Cancer Care Ontario
Action Cancer Ontario

CLINICAL SPECIALIST RADIATION THERAPIST (CSRT) SUSTAINABILITY PROJECT

*FINAL REPORT – **2013/14***

FINAL REPORT
June 10, 2014

Driving quality, accountability and innovation in all cancer-related services

TABLE OF CONTENTS

EXECUTIVE SUMMARY

It is an important time in the ongoing integration of the CSRT into the permanent fabric of the radiation medicine team. Support for the role around the province continues to gather momentum and, despite timelines, the number of positions has grown from 7 in 3 centres to 17 in 6 centres, with another 7 positions coming online over the summer of 2014. With 3 of these new positions being in 3 new centres, this brings the total number of sites that will have CSRTs to 9 of the 14 regional cancer programs. In addition, the number of positions that are permanent, fulltime positions has doubled from 3 to 6 with efforts ongoing for the remainder of the existing positions.

Data collected continue to advance the understanding of what CSRTs are capable of and characterize the positive impacts on the system. This year provided an opportunity to compare data collected during the Demonstration Phase of the Project showing that patient, team member and Radiation Therapist satisfaction with the CSRT role remains steadily positive. Early indicators reported by junior CSRTs are promising and provide an optimistic hint that successes, comparable to those from the senior CSRTs, will begin to be identified by this second wave of practitioners.

Despite this positive progress, several challenges still lie ahead for complete and successful establishment of the CSRT role in Ontario. During this transitional time of good support and uptake of the role until a time where there is a recognized professional credential and certification process, the Project Integration Support Team must work diligently to ensure that all positions aligned with the project adhere to the standards established by the project's work and to support and inform the development of the certification process. Work towards the certification process continues and is making good progress, with the first pilot scheduled for fall of 2014.

The CSRT Sustainability Project continues to meet goals and targets and is committed to the full realization of the shared Cancer Care Ontario and Ministry of Health and Long-Term Care's vision for a new way of working that sees the effectiveness and efficiency of the radiation treatment system improve while containing costs and providing the high quality radiation therapy that the citizens of Ontario expect and deserve.

A/ BACKGROUND

Ontario's heath care system faces many challenges, including increasing costs, an aging population, shortage of health professionals, the introduction of expensive new treatments and technologies, and a growing complexity of care. It is estimated that in their life time 46% of males and 41% of females are expected to develop cancer).[1] Cancer Care Ontario (CCO) estimates each day 180 Ontarians are diagnosed with cancer, and that by 2015 400,000 people will be living with or have survived cancer in Ontario.[2] In this context, the demand for innovative clinical practitioners and flexible and responsive interprofessional teams has never been stronger.

In response to these system demands – and recognizing the value of interprofessional practice[3] – the Ministry of Health and Long-Term Care (MOHLTC) began exploring non-traditional and creative solutions to recurring issues in radiation therapy.[4] These efforts ultimately led to the development of the Clinical Specialist Radiation Therapist (CSRT) role and the CSRT Projects (see Figure 1). The CSRT role provided an opportunity to think creatively about traditional and new ways of working, within the context of an interdisciplinary team environment. The work of the CSRT Demonstration Project confirmed CCO's commitment to drive quality, accountability and innovation throughout Ontario's cancer system. A detailed background and timeline for the series of projects can be found in Appendix A.

Figure 1: CSRT Projects – Project Phases

- Advanced Practice Radiation Therapy (APRT) Development Project (2004-2006)
- CSRT Demonstration Project – Phase I (March 1, 2007 to March 31, 2008)
- CSRT Demonstration Project – Phase I Extension (April 1, 2008 to March 31, 2009)
- CSRT Demonstration Project – Phase II Expansion (August 1, 2008 to March 31, 2010)
- CSRT Demonstration Project – Phase IE[2] (April 1, 2009 to March 31, 2010)
- **CSRT Sustainability/Integration Project – April 1, 2010 to March 31, 2016**

A Demonstration Project introduced and evaluated the CSRT role in a number of different health care institutions across the province. Up to 10 full-time equivalent (FTE) CSRTs were supported in this project which ended March 31, 2010. The results of the final phase of the CSRT Demonstration Project were reported in May 2010 showing the overall positive impact that the pilot CSRT positions were having in their respective programs and services. In concert with the submission of the final results, CCO also recommended a "Sustainability Phase" of this health service development work. In March of 2011, the CSRT Sustainability Project received funding for a three-year plan to integrate the CSRT role into Ontario's cancer care system. This included 11 additional CSRT pilot positions in 2012 and 2013. It was subsequently agreed by both parties to revise the original project activities and timelines to fund the project transition over six years ending in 2015/16, aligning with Ontario's Action Plan for Health Care. These changes, prioritizing the needs of palliative patients in all jurisdictions, focus on the roll out

[1] Canadian Cancer Society, Cancer Statistics at a Glance. http://www.cancer.ca/en/cancer-information/cancer-101/cancer-statistics-at-a-glance/?region=on (accessed February 25, 2014)
[2] CCO, Ontario Cancer Plans. https://www.cancercare.on.ca/common/pages/UserFile.aspx?fileId=84204 (accessed on May 22, 2013)
[3] Institute of Medicine, Crossing the Quality Chiasm: A New Health System for the 21st Century. Washington, D.C.: National Academies Press, 2001.
[4] Goodyear, J. Innovative Solutions: New and Expanded Roles in the Healthcare System. Presentation at CCO Advanced Practice Workshop. Toronto, Ontario, March 26, 2004 (March 26, 2004).

of the Palliative Radiation Therapy CSRT for the final three years of the project.

The CSRT Sustainability/Integration Project has several performance goals and/or targets for 2013/14 (Agreement Appendix E, Part C):

1. Extending agreements with each employment site for the original (up to) seven FTE CSRTs that outline requirements and responsibilities of each site as a participant in the project and oversee the ongoing data collection as CSRTs transition to full scope;
2. Overseeing the "Integration Support Team" which will assist with the support of existing and implementation of new CSRTs into cancer care teams;
3. Extending agreements with each employment site for the new (up to) eleven FTE CSRTs that outline requirements and responsibilities of each site as a participant in the project and oversee the ongoing data collection as CSRTs transition to full scope;
4. Supporting the hiring of (up to) seven FTE additional Palliative Radiation Therapy CSRTs through various activities related to education, communication, preparation, supporting selection processes and ongoing assistance with position implementation and assessment;
5. Formalizing the CSRT role by continuing to collect evidence, analyzing and reporting on key findings about how CSRTs are working in original and new sites; and working with relevant organizations to formalize the CSRT role;
6. Developing comprehensive "models of care" for radiation medicine which capture the contributions of the Palliative Radiation Therapy CSRT that may be introduced to maximize system efficiencies and add flexibility to the interprofessional health care team; and
7. Conducting knowledge creation and dissemination activities focusing on the Palliative Radiation Therapy CSRT, including employer surveys to contribute to labour market knowledge about radiation therapy for use in health human resource forecasting and planning.

In general, the CSRT has proven to be a valued and high-performing member of the interprofessional team, contributing to the provision of high quality, cost effective radiation therapy and care to the people of Ontario while serving as leaders in the advancement of the overall science and practice of radiation therapy. The sustainability and integration measures that are part of this project will go a great distance to facilitating the long-term integration of the CSRT role in Ontario and beyond.

B/ KEY ELEMENTS

1. CSRTs

1.1 General Overview

There are currently 18 CSRTs in place across the province placed in 7 of the 14 cancer centres in Ontario (see Figure 2) Seven "senior" CSRTs have been in their positions since 2007 (5) and 2008 (2). Eleven "junior" CSRT positions were implemented in July 2012 (10 positions, 9.5 FTEs) and July 2013 (1).

Figure 2: Summary of CSRT Positions

SENIOR CSRTs

1. Palliative Radiation Therapy CSRT – Princess Margaret Cancer Centre (PM)
2. Target Visualization and Delineation CSRT, Head and Neck Site Group – PM
3. Palliative Radiation Therapy CSRT – Odette Cancer Centre (OCC)
4. Patient Assessment and Symptom Management CSRT, Breast Site Group – PM
5. Skin Cancer CSRT – OCC
6. Metastatic Bone Cancer CSRT - Juravinski Cancer Centre (JCC)
7. Head and Neck Cancer CSRT – JCC

JUNIOR CSRTs

1. Brachytherapy CSRT - OCC
2. Brachytherapy CSRT – PM
3. Thoracic HDR Brachytherapy CSRT – JCC
4. Breast CSRT - JCC
5. Planning Image Definition and Contouring Head and Neck (H&N) CSRT - London Regional Cancer Program (LRCP)
6. Skin Cancer CSRT - LRCP
7. Stereotactic Body Radiation Therapy CSRT - OCC
8. Image Guided Adaptive Radiation Therapy (IGART) CSRT - PM
9. Palliative CSRT - Stronach Regional Cancer Centre (SRCC)
10. Palliative CSRT - Cancer Centre of Southeastern Ontario (CCSEO)
11. Palliative CSRT - Carlo Fidani Peel Regional Cancer Centre (CFPRCC)

A more detailed description of each position is provided in Appendix B. A workplan of activities for the junior CSRTs and associated deadlines can be found in Appendix C.

In Spring 2014, the part-time (0.5 FTE) Palliative Radiation Therapy CSRT position at the CCSEO was put on hold. At this time the centre was undergoing changes in their cancer program administrative and managerial staff and experiencing unexpected budgetary pressures. The CCSEO raised these concerns with the project team shortly after deciding to put the position on hold and continues to work with project staff to consider the reestablishment of this position and/or future opportunities.

In addition, the project is currently working with three Ontario sites to develop Palliative Radiation Therapy CSRT positions (estimated for Summer 2014) as well as the development of four new positions with a variety of foci for implementation in the Summer 2014 (additional details provided in Section 3).

1.2 Characterizing CSRT Practice

One of the most well documented challenges in developing permanent and integrated new health care professional roles is the clear communication of concrete job descriptions and role expectations. It has also been found throughout the duration of this project, that collecting evidence across positions is difficult given the variations seen in the nature of clinical activities. To mitigate these issues as far as possible, a competency profile has been developed. This competency profile forms the basis for all CSRT positions despite area of specialization. The provincially (and now nationally) validated competency profile, that was presented in previous reports, can be found in Appendix D.

CSRT positions vary from each other with respect to the emphasis that is placed on clinical, research and teaching activities, as well as other tasks. It has been further recognized that the breakdown of work responsibilities will change from time to time for a single CSRT in response to shifting programmatic pressures. To more clearly understand the variation amongst positions, the breakdown of each CSRT's work week is documented below (Table 1) under the following headings:

1. **Clinical** – any patient related activities - planning, consults, set up consults, telephone calls, on treatment reviews, follow-ups, online support groups, dictation, documentation, etc.
2. **Innovation** – data collection/analysis, clinical trials, document writing, presentation, etc.
3. **Administrative/Quality Assurance (QA)** - documentation, meetings, committees, QA activities, etc.
4. **Referrals** – triaging, handling and sorting new patient referrals to appropriate clinics, specific physicians, services, etc.
5. **Teaching** – education and evaluation on any level.

Table 1: Percentage of Total Workload by CSRT

	Clinical	Innovation	Admin/QA	Referrals	Teaching
SENIOR CSRTs					
Bone Mets CSRT, JCC	35	15	25	25	
Breast CSRT, PM	50	25	20		5
Skin CSRT, OCC	50	15	10	20	5
TV&D CSRT, PM	80	10	5		5
H&N CSRT, JCC	25	45	20		10
Palliative CSRT, OCC	50	25	12	8	5
Palliative CSRT, PM	80		15		5
JUNIOR CSRTs					
Brachytherapy CSRT, OCC	70	20	5		5
Brachytherapy CSRT, PM	50	30	10		10
Thoracic HDR Brachytherapy CSRT, JCC	80	20			
Breast CSRT, JCC	40	20	20	10	10
Planning Image Definition & Contouring H&N CSRT, LRCP	60	25			15
Skin CSRT, LRCP*	50		50		
SBRT CSRT, OCC	65	25			10
IGART CSRT, PM		80			20

Palliative CSRT, SRCC	80	10	10		
Palliative CSRT, CCSEO	85		15		
Palliative CSRT, CFPRCC	65	20	5	10	

**The Skin CSRT, LRCP is initially focusing on a reduction in the existing backlog of referred patients and will implement the full scope of the position in 2014/15.*

Providing a clear description of the CSRT position has been repeatedly identified as directly linked to maximizing successful integration of the position at the local level. As such, constant efforts are being put into characterizing the various positions and their clinical contexts. This work is ongoing.

1.3 CSRT Data

As reported in 2012/13, the project collects and reports findings under the headings of Quantity (capacity building), Quality and Innovation/Knowledge Translation (See Figure 3). The categories reflect CCO's belief that these areas of impact are of greatest importance when considering a change in model of care.

Figure 3: CSRT Data Collection Categories

i) Quantity

Does the new model save the system money or allow for increased patient capacity with the same money?
Does the new model allow patients to enter/move through the system more quickly?
Does the new model reduce the cost of human resources required to meet existing patient demands and/or optimize the use of human resources?
(While maintaining patient and provider experiences as well as patient outcomes)

ii) Quality

Does the new model improve patient experience, outcomes and/or provider experiences? (e.g. new services, process streamlining, standard setting, etc.)

iii) Innovation and Knowledge Translation

Does the new model bring the promise of improved patient treatment, care and/or outcomes? (e.g. new technique, adoption of new technology, etc.)

a) i) Quantity

Capacity building continues to be a top priority of the CSRT projects. The impact of the CSRTs related to quantity currently appears to fall into 2 categories – through direct patient care or through work behind the scenes that indirectly impacts on patient care. The breakdown of clinical activities for each position (and therefore, direct versus indirect impact) will be affected by department goals and objectives and the group/program that the CSRT is a part of.

Tables 2 and 3 illustrate the continued impact of the CSRTs on their particular areas. The capacity increases for the senior CSRTs remains relatively stable as the clinical requirements of the positions have plateaued as the departments work to solidify each position. It is expected that several values for the junior CSRTs will continue to increase or fluctuate as the CSRTs find their permanent footing.

Table 2: Direct CSRT Impact on Quantity

QUANTITY – DIRECT		
SENIOR CSRTs		
Bone Mets CSRT, JCC	• Additional patients seen if CSRT is present in clinic • Unscheduled referrals accepted and managed by CSRT outside of regularly scheduled clinics	• ~12 patients/month (no change) • ~8 patients/month (no change)
Palliative CSRT, PM	• Additional new patients accepted in rapid response clinic if CSRT present	• ~14 patients/month (decrease from 20)
Skin Cancer CSRT, OCC	• Increase number of new patients in each weekly clinic when CSRT is present	• ~8 patients/month (no change)
Breast CSRT, PM	• Additional new patients seen if CSRT present in clinic • Unscheduled assessments possible due to CSRTs increased flexibility	• ~8 patients/month (no change) • ~12 patients/month (no change)
Palliative CSRT, OCC*	• Additional referrals accepted with CSRT part of the rapid response team • "CSRT-only" Bone Metastases Clinic	• ~12 patients/month • ~10 patients/month
JUNIOR CSRTs		
Palliative CSRT, SRCC	• Additional referrals accepted with CSRT part of the rapid response team	• ~16 patients/month (NEW)

**At the time of this report, the Palliative CSRT, OCC has been redeployed in the development of a new Brain Tumour Program and will no longer see patients in the Rapid Response Radiotherapy Program (RRRP).*

As mentioned, there are some CSRT positions that focus on activities and functions that are behind the scenes, not at the front line interfacing directly with the patients. The impact of these positions remains harder to firmly measure as the activities result in time savings for the radiation oncologists and other team members, but how that surplus time is used is difficult to quantify. These activities usually involve the assumption of some function normally completed by a radiation oncologist which is usually scheduled outside of a dedicated clinic. These activities interrupt the oncologist in an alternate clinic or completing some other activity. This has a negative impact on the patient experience as well as on the effective use of department resources while the unit and staff are in a holding pattern waiting for the physician to arrive. Table 3 below is a sampling of some of these activities and the indirect time savings that result from the CSRT assuming these activities from the radiation oncologist. CSRTs continue to make inroads in reducing this type of interruption for the RO and on the treatment floor.

Table 3: Indirect CSRT Impact on Quantity

QUANTITY – INDIRECT		
SENIOR CSRTs		
Bone Mets CSRT, JCC	• Completion of virtual simulation independent of Radiation Oncologist (20 min/simulation x 40 simulations/month)	• ~ 20 hours/month (no change)
Target Visualization CSRT, PM	• Time saved by assuming responsibility of contouring – ~13pts/week x 55 minutes/patient (previously reported)	• ~ 50 hours/month (no change)

H&N CSRT, JCC	• Bolus marking in place of Radiation Oncologist - ~ 3 patients/week at 15 minutes/patient • "on treatment" review in place of RO - ~12 patients per week x 6 minutes/patient	• ~ 4 hours/month (no change) • ~ 5 hours/month (no change)
Palliative CSRT, PM	• Discharge plans for patients completing treatment - ~24 patients/month x 15 minutes/patient • Pages to the treatment unit to view first day treatment or problem solve set up (10 pages/mo @ 15 min/page) • Contouring targets, delineating treatment fields and entering eBookings in lieu of ROs • Conducting "on treatment" reviews (~18/mo @ 6 min/pt)	• ~ 8 hours/month (increase from 6) • ~ 2 hours/month (NEW) • ~ 8.5 hours/month (decrease from 10) • ~ 2 hours/month (NEW)
Palliative CSRT, OCC	• Placing of treatment volumes and treatment fields for rapid response palliative RT patients	• ~ 20 hours/month (no change)
JUNIOR CSRTs		
H&N CSRT, LRCP	• Delineation of normal tissue organs at risk (OARs) – 15 cases/mo @ 118 min/case (range: 40 – 165 min) • Constraint documentation, planning and IGRT instruction – 15 cases/mo @ 15 min/case	• ~ 30 hours/month (NEW) • ~ 5 hours/month (NEW)
Palliative CSRT, SRCC	• Placing of treatment volumes and treatment fields for patients through the rapid response clinic - ~16 cases/mo @ 30 min/case	• ~ 8 hours/month (NEW)
Brachytherapy CSRT, OCC	• By assuming the completion of prostate contouring for brachytherapy patients – average of 6 cases/mo (range: 4 – 8) @ 30 min/case	• ~ 3 hours/month (NEW)
SBRT CSRT, OCC	• Assuming the task of approving cone-beam CT images at first treatment for lung SBRT patients – 80 pts/mo (~4/day) @ 7 min/case (minimum)	• ~ 9 hours/month (NEW)
Brachytherapy CSRT, JCC	• Contouring target volumes for external beam radiation therapy for esophageal patients – 2 cases/mo @ 30 min/case • Assuming patient teaching for new patients considering RT for esophageal cancer – average of 12 pts/mo (range: 8 – 16) @ 22 min/case (range:15 – 30 min)	• ~ 1 hour/month (NEW) • Average of 4.5 hours/month (NEW)

Additional activities remain in development that will positively impact the number of patients seen or the efficiency of the patients' trajectory through the system. Efforts continue to quantify how these indirect time savings impact the various program and department activities. Establishing direct correlations continues to be difficult, however qualitative feedback from the team indicates that there are many benefits.

In addition to these activities that can be concretely quantified at this time, additional activities related to improving wait times and patient throughput are being undertaken. In most cases, data collection for these activities is ongoing and will be reported as the junior CSRTs continue to develop their knowledge, skills and abilities and new/revised processes take root. Table 4 summarizes the number of such activities being reported at this time.

Table 4: Wait time and throughput activities leading to program efficiencies

Activity/Initiative	Number of activities/initiatives Senior + Junior CSRTs
Wait time and patient throughput activities	12

The more detailed descriptions of the capacity building activities and wait time and throughput improvement projects can be found in Appendix E.

b) ii) Quality

The CSRTs continue to build their practice around Quality initiatives. In general, these activities relate to:

- Improving the patient experience – reduction in inappropriate referrals, addition of new patient services, activities focused on streamlining workflow, etc.
- Improving patient outcomes – introduction/enhancement of quality assurance processes, development/introduction of treatment/care standards, etc.
- Improving the provider experience – activities focused on streamlining workflow, introduction of practice standards or policies, etc.

The CSRTs continually look for opportunities to modify and improve the way things are done, as well as for gaps where new services can be added to enhance patient experience and/or outcomes. Table 5 summarizes the number of activities being undertaken to either improve the quality of an existing process or activity or add a service or activity that contributes to an improved experience for the patient or the team and/or improve the quality of care, and potentially outcomes, for the patient.

Table 5: Quality of care activities

Activity/Initiative	Number of activities/initiatives Senior + Junior CSRTs
Improvement in quality of care/treatment for current patients	9
New skills development that will lead to new activities being delegated to CSRTs	14

A detailed description of the Quality initiatives being undertaken by all CSRTs can be found in Appendix F. A detailed description of the concordance data regarding new skills development can be found in Appendix G.

c) Patient Satisfaction

The project employed the "Patient Satisfaction Questionnaire" originally designed and validated by the Rheumatism Research Unit at the University of Leeds[5] (the modified version was altered to make the questionnaire more generic for use in all clinics, rather than clinic specific).[6] The questionnaire takes approximately 10 minutes to complete and has a total of 46 questions that are responded to on a five point scale ("strongly agree" to "strongly disagree"). It has a Cronbach Alpha of 0.94 (reliability). In 2009, in response to the limitations of the palliative population being cared for by several of the CSRTs, an abbreviated version was developed to reduce the time commitment of the survey. The satisfaction survey was conducted in a "pre-CSRT/post-CSRT" design. Data were originally collected for the senior CSRTs in 2010 (reported in 2012/13 report). The junior CSRTs (7 of 11 positions) collected patient satisfaction data in 2012/13.

Patient satisfaction was collected from a total of 163 patients (pre n = 75, post n = 88).[7] Results indicate that the CSRTs were able to maintain patient's high level of satisfaction associated with their health care teams. There were no significant differences between the patient groups for any of the questions. This continues to align with previous data by senior CSRTs, further contributing to the support of patients for the CSRT role within the health care system and on their health care teams. The feedback received from CSRTs' direct supervisors, as detailed in the next section, support data indicating that patients are pleased with their interactions with the CSRT involved in their care.

A detailed description of Patient satisfaction data can be found in Appendix H.

d) Direct Supervisors

The direct supervisors of 'junior' CSRTs were invited to participate in a semi-structured interview with project staff. The purpose of the interviews was to gain insight into the status of junior CSRT positions approximately one year post-implementation, the barriers and facilitators to integrating CSRT positions, the benefits and impacts associated with the positions, and the supervisors' thoughts on the CSRT role in general (Table 6). These interviews complement discussions with direct supervisors of 'senior' CSRTs which were conducted in early 2013 (reported in 2012/13). Interviews were conducted with 9 direct supervisors, one for each junior CSRT position that started in Summer 2012 (one direct supervisor spoke about his experience with two of the CSRTs). Interviews (approximately 30–60 minutes) were recorded, transcribed verbatim and analyzed using a thematic analysis.

All supervisors (9/9) indicated that the CSRT(s) that they work with makes positive contributions to the program/service. Similar to the benefits realized by way of senior CSRTs, junior CSRTs were described as being able to decrease wait times, improve access to care, develop program innovations and process improvements, and improve both patient and team member satisfaction. Supervisors also highlighted the ability of the CSRTs to provide education and act as a knowledgeable resource for members of the interprofessional team, their radiotherapy colleagues and especially patients.

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[5] Hill, 1997
[6] Mortimer Market Centre: Service User Satisfaction Survey; Miles et al., 2003.
[7] NOTE: The terms 'pre' and 'post' to describe patient groups reflect those CSRT positions that utilized a formal pre / post research design as well as those CSRTs that handed out surveys consecutively to patient who had seen the CSRT (post) and those who had not (pre).

All supervisors (9/9) indicated that the effort devoted to developing and implementing the CSRT positions has been worth it. Supervisors indicated that they believe that the effort has been minimal compared to the scale of benefits that their programs have realized in the past year. Supervisors also noted that they expect to realize more benefits as the positions become more mature and evolve over time. Potential avenues for position evolution include increased duties, enhanced clinical autonomy, the development of additional new programs and processes and the pursuit of original research. Junior CSRTs were also recognized for the important contributions that they are making on academic, program development and knowledge translation fronts. Many CSRTs have presented their original work at professional conferences and are leading programmatic expansions (e.g. image guide adaptive radiotherapy, use of MR in brachytherapy, etc.) within their centres. Such activities are essential to harnessing and sharing knowledge and innovative approaches to practice within the radiation therapy profession.

> "The sustainability, in my mind, within our program comes from just the inherent value of having these people in these roles and the way that they contribute to program evolution and evolution of the scenes that they are involved in."
>
> (Supervisor, PMH)

Table 6: Direct Supervisors' Impressions of Junior CSRT Positions

Benefits	• Quality, program innovation, service improvement • Stakeholder outcomes (team members, patients) • Access to care and wait times • Financial
Challenges	• Team acceptance and integration • Defining scope of work and managing stakeholders' expectations • Financial pressures
Recommendations	• Carefully select the candidate to fill the position • Thoughtfully assess available resources and local needs • Allow for growth and learning • Take advantage of the flexibility of the role • Regularly communicate about the positions and their impact
Vision for CSRT Role	• Aligned with health care funding reform and the utilization of innovative models of care • An enhancement to the discipline of radiation therapy • Key to driving the future and advancing the science of radiation medicine

All interviewees indicated that they think that CSRTs can play an important role in the radiation therapy system. Respondents suggested that the scope of the CSRT role is flexible and can be tailored to address centre-specific needs, and encouraged expansion to other disease areas and radiotherapy programs. The CSRT role was suggested to be important to the enhancement of the radiation therapy profession, advancement of the science and practice of radiation medicine, development of new models of care, and alignment with future health care funding reform. This signifies the degree to which the direct supervisors believe the role is useful and the value that would come from investing in it further to meet future health system demands.

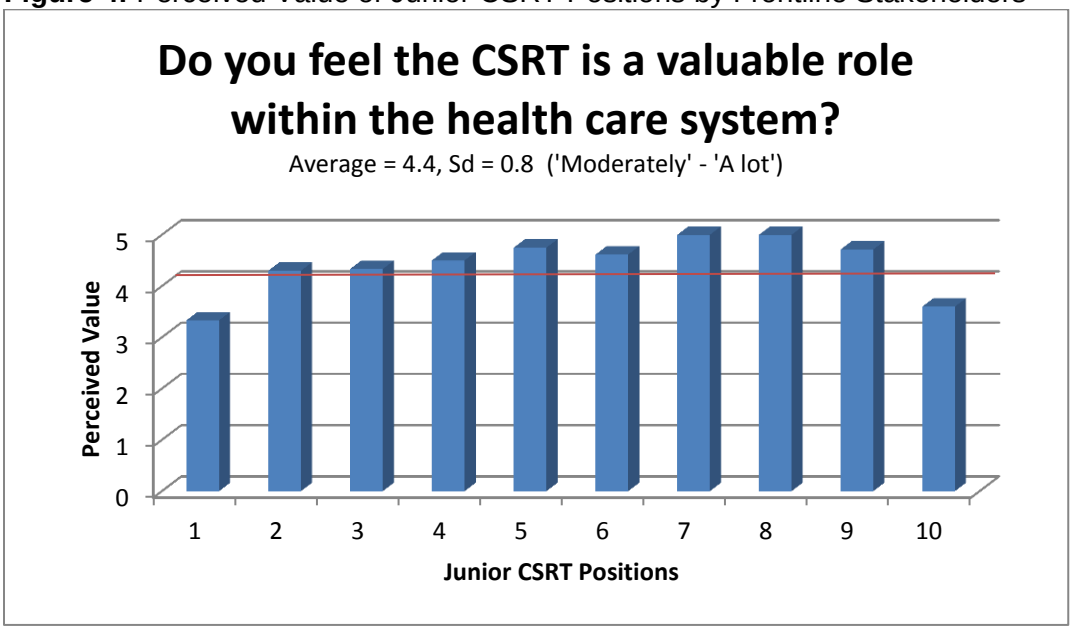
> "…this is the way of the future. When we think of health care funding reform, programs need to focus on what only they can do and do more for less and this will allow us to do it. I just think that this is health care reform in action, so, we have to press for more of these."
>
> (Supervisor, SRCC)

The results of the thematic analysis and a detailed summary of interview responses can be found in Appendix I.

e) Frontline Stakeholder Satisfaction

Team functioning and team member job satisfaction and support for the CSRT position is imperative to its long term implementation and overall success. In order to assess stakeholder support of the individual CSRT positions, health care professionals who work alongside the CSRT were surveyed for their feedback on the benefits and ongoing challenges with the positions' integration into the team. Perception of the individual CSRT positions and overall CSRT role was obtained from 76 individuals, representing 10 of the 11 positions. On average each CSRT position had 8 surveys completed, ranging from 4 to13 per individual. Surveys were disseminated in the last quarter of their first year of the positions. The survey content consisted of one Likert scale question and four open ended questions asking information on the respondents opinion of the role to date and in the future, known benefits and challenges, and the ability to provide any further comments they wished. Figure 4 displays the high level of perceived value of the CSRT role as indicated by the stakeholders. 84% (64/76) of participants stated that they feel the CSRT role have 'moderate' to 'a lot' of value to the health care system. These results are consisted with the senior CSRT results from previous years suggesting that across time the implementation process of positions has continued to excel and resulted in stakeholder endorsement of the role.

Figure 4: Perceived Value of Junior CSRT Positions by Frontline Stakeholders



f) Radiation Therapy Job Satisfaction

The Radiation Therapist Job Satisfaction Survey is a quantitative and qualitative questionnaire that was disseminated to radiation therapists in the departments where a junior CSRT was introduced (n = 10). The data represents radiation therapist responses from seven different cancer centres within Ontario, totaling 278 individuals. All scores and comment themes are in close alignment with previous data collection from senior CSRTs, representing the overall high level of job satisfaction for radiation therapists and the ability of the CSRT role to combat some of the known limitations of the profession (lack of career opportunities, low wages, and opportunities to specialize). Two new themes emerged in the comments received in response to the question “If a friend of yours told you he/she was interested in working in a job like yours, what would you tell him/her?” Respondents indicated that it was important to ensure that people interested in radiation therapy as a career should be aware of the current downturn in the employment situation and that selecting the “right kind of person” for these health care professional roles is very important to overall team functioning.

Radiation therapy job satisfaction survey results are summarized in Appendix J.

g) iii) Process Innovation and Knowledge Translation

As they develop advanced knowledge, skills and judgment in their area of specialization, the CSRTs naturally begin to take the lead and direct initiatives related to new radiation therapy approaches and new ways of working. This can be either through the generation of new knowledge or by translating existing published knowledge into new techniques and approaches in their programs. As such, CSRTs are engaged in a number of projects in their respective departments that bring with them a promise or proof of improved patient experience and/or outcomes as well as improved provider experience – all critical elements in the provision of the highest quality care to our patients. Once again, it is important to note that the amount of time that each CSRT contributes to different activities is directly tied to each

unique job description (see Section 1.2). These activities are outlined in detail in Appendix K and summarized in Table 7 below.

Table 7: New Practice Innovations

Activity/Initiative	Number of activities/initiatives Senior + Junior CSRTs
Creation and/or adoption of new ways of practicing leading to improved patient treatment/care	21

As this number increases over the years, it is evident that CSRTs continue to push boundaries in radiation therapy practice. These activities also translate into unprecedented academic activity for the CSRTs, reported in section 6 (Knowledge Creation and Dissemination) below.

2. Integration Support Team

In order to support existing initiatives and to nurture new initiatives contributing to province-wide adoption of the CSRT model of care, a small integration support team directs the activities of the project. Comprised of a Project Manager, Project Coordinator and Radiation Treatment Program Manager, the Integration Support Team (IST) is utilizing tools and processes developed during previous project phases to facilitate a number of key outcomes, including:

- Disseminating key outcomes of the CSRT Project phases across the province;
- Providing assistance to centres for internal needs assessment, the translation of needs into measurable objectives for a new position, the creation of job descriptions, preparation of business cases (including specific metrics to track success);
- Ensuring accountability and consistency of implementation through selection of incumbents and design of on-site education and training program;
- Overseeing the monitoring, measuring and reporting of activities and outcomes; and
- Overseeing communication strategies including website and digital media.

Table 8 offers a summary of the timelines for IST activities this year including an indication of what has been completed to date.

Table 8: Timeline Summary of IST activities

Activity – *11FTE implemented in 2012/13*	**Target/Completion Date**
Data collection regarding key outcomes of position implementation	Ongoing
Submit CSRT Report 2013/2014	May 2014
Activity – *7.0 FTE to be implemented in 2014/15*	**Target/Completion Date**
Issue Request for Proposal (RFP)	December 2013 √
RFP submission deadline	March 2014 √
Assess proposals and award funding	March 2014 √

Conduct site visits to centres developing new Palliative Radiation Therapy CSRT positions	Mar – May 2014 √
Submit CSRT Final Report 2013/2014	June 2014√
Evaluate professional portfolios	June 2014
Implement 7.0 FTE new CSRT positions	Summer 2014
Education and training support	Begins: Summer 2014
Data collection regarding key outcomes of position implementation	Ongoing

The accountability framework established during the Sustainability project phase remains in place for all new positions. Strategies include:

- Requirements of the clear identification of a sustainability plan in the position proposal;
- Implementation of a problem solving process to follow when challenges are encountered at the local site, including the engagement of project representatives in the resolution; and
- Status report on locally implemented CSRTs required at the quarterly meeting between CCO senior administration and Regional Vice-Presidents.

3. Implementation of (up to) 7 new CSRT positions

Aligned with the focus on palliative care articulated in the Integration Project's goals, in December 2013 a formal announcement was sent to those Ontario cancer centres which at the time did not have a CSRT in place, asking them to express their interest in receiving seed money to support planning activities associated with the development and implementation of a Palliative Radiation Therapy CSRT. Four of 7 eligible centres did not feel prepared at the time to proceed with planning for and implementing a CSRT in their respective programs but will continue to consider the possibility going forward. Of the 4, one centre (Windsor) initially expressed interest however, upon further consideration of the program's budget pressures and the feasibility of establishing a method to sustain the position within the compressed planning timelines (January – March 2014), the site decided not to pursue development of a Palliative Radiation Therapy CSRT at the time. Positive responses were received from 3 regional centres:

- Simcoe Muskoka Regional Cancer Centre, Barrie
- R.S. McLaughlin Durham Regional Cancer Centre at Lakeridge Health, Oshawa
- The Ottawa Hospital Cancer Centre, Ottawa

Site visits by project representatives were completed at these 3 centres during March – May 2014. At these visits, proposed position activities and responsibilities were discussed and finalized with the local team. Hiring for these positions will take place in July – August 2014. Successful candidates are anticipated to be in their respective positions by September – October 2014.

In addition, given the unused funds, a second call was put out to centres who currently host successful CSRT positions to offer seed funding for the development of "other" new CSRT positions. Four centres submitted positive responses and completed the necessary proposal documentation for review by the project team by March 2014 deadline. While an additional site (London) was also very interested in

developing a third CSRT position for implementation at their centre, due to operational pressures associated with radiation treatment machine repairs/replacement and significant budget constraints anticipated for 2014/15, the site decided not to pursue development of the position at the time. It is expected that the following approved new positions will also be filled by September – October 2014:

- Supportive Care and Sexual Health CSRT – OCC
- Image Guided Adaptive Radiation Therapy (IGART) Chest / Upper Abdomen CSRT– PM
- Stereotactic Body Radiation Therapy (SBRT) and Stereotactic Radiosurgery (SRS) CSRT – CFPRCC
- SBRT Lung – SRCC

Together with the 3 new Palliative Radiation Therapy CSRTs and 4 additional new CSRT positions the total number of active CSRT positions in the province is anticipated to be 24 (24.0 FTE) by Fall 2014.

4. Formalization of the CSRT Role

Progress continues to be made in the establishment of CSRT positions as “permanent, full-time” positions in the relevant sites. At this time, an additional 3 positions have become permanent, full-time positions, doubling the number reported last year (n = 3) bringing the total to 6 of 17 current CSRT positions. Departments continue to work internally to complete the steps necessary to convert the remaining pilot positions accordingly.

The project manager is facilitating the creation of a CSRT community of practice (CoP). Members of this voluntary group will begin to engage in activities they deem appropriate for ensuring the standardization and consistency of the CSRT position as well as its formalization within the province. An initial meeting in January 2014 was used to create a vision and goals for the CoP and an action plan for moving forward (see Appendix L). The project manager will continue to guide the development of the CoP and initiate the necessary activities to formalize the CoP under the auspices of CCO.

Work also continues with the Canadian Association of Medical Radiation Technologists (CAMRT) for the creation of reliable and valid certification process. In November 2013, the co-leaders of the initiative (CSRT Project Manager and CAMRT Director of Profession Practice) presented a business case to the CAMRT Board of Directors to garner their support for the continuation of the certification project. Unanimous approval was received (along with financial support) for the ongoing collaboration that will culminate in the pilot test of the certification process in Fall 2014. Several meetings of the working group, which includes several CSRT Project Oversight Committee members and a current CSRT, have taken place. Current activities are focused on compilation of a case bank that will be used to build questions and assessments for the process. Subject matter experts are also being recruited to contribute to the question bank development – scheduled for Spring 2014.

In addition to this, CCO is currently completing negotiations with the CAMRT for use of the portfolio creation and assessment protocols built during the CSRT Project series for use in the certification process. This ensures the ongoing use of the intellectual property built during the project. Appropriate acknowledgement of the MOHLTC, CCO and the CSRT Projects are an important part of these negotiations.

5. Models of Care

As reported in the 2012/13 CSRT Sustainability Report[8], the project manager participates on a number of Models of Care (MOC) Program committees at CCO; a program created in response to priorities identified in the 2011 – 2015 Ontario Cancer Plan. The Program seeks to develop and implement sustainable, integrated, patient-centred models of care in response to pressures in the cancer system, including Ontario's growing and aging population which is driving an increased demand for cancer services and fiscal challenges. As outlined in last year's report, the goals of the MOC Program are to:

1. Develop and implement best practice models of care to promote value for money;
2. Identify and address regulatory, funding and other policy barriers to enabling new models of care; and
3. Enhance the ability to accurately predict health human resources demand while incorporating changes in models of care.

Efforts over the past year have focused on two MOC activities. The CSRT Project has been working with the Evaluation Subcommittee to test a variety of rubrics and frameworks they have created to guide the development and implementation of new models of care. This includes the identification of relevant evaluation categories and of the groups of stakeholders that need to be included in robust model implementation. Other work has focused on converting results from the CSRT Projects to values that can be used in the future by the Health Human Resources Planning and Prediction Committee for appropriate distribution of CSRTs within the province. This is a complex task that requires input from many teams within CCO and work is ongoing. It is anticipated that establishing these values will lead to changes in planning processes for regional cancer centres.

6. Knowledge Creation and Dissemination

Academic activity – through knowledge creation and dissemination – is an important aspect of maximizing the contribution of the CSRT role to enhance the quality and efficiency of the work being done in the radiation therapy programs.

CSRTs continue to make significant contributions to the knowledge base of not only radiation therapy practice, but to the overall practice of radiation medicine. The level of scholarly contribution continues to escalate – one of the most rapid areas of growth for the senior CSRTs, and of rapid uptake for the junior CSRTs. Not only are CSRTs actively engaging in research and knowledge creation activities at their local site, they are also undertaking more widespread knowledge dissemination activities – fundamental to translating new knowledge into practice in other jurisdictions.

This constant increase in their academic production, and the continued recognition of their work at the provincial, national and international level, illustrates how the CSRTs continue to integrate into and contribute to the interprofessional radiation therapy team and the creation of new knowledge. Table 9 provides a year over year summary of the variety of knowledge creation and dissemination activities undertaken by the CSRTs illustrating the rapid integration of the junior CSRTs into their roles as leaders and investigators.

[8] N. Harnett, CSRT Sustainability Report 2012/13, pp 16 – 17.

Table 9: Knowledge Creation and Dissemination activities

Activity/Initiative	Number of activities/initiatives - ALL CSRTs						
Year	2008	2009	2010	2011	2012	2013	2014*
Presentations - Peer reviewed podium		1	4	2	5	8	10
Presentations - Peer reviewed poster	3	2	6	5	7	15	15
Presentations - Invited/external podium		1	4	3	7	6	3
Presentations - Intra-departmental	1	9	8	3	9	9	11
Presentations - Interdepartmental		4	4	2	5	6	2
Presentations - Workshops		1			5	9	4
Peer-reviewed publications - Manuscripts	1	1	3	24	27	17	12
Peer-reviewed publications - Abstracts	1	1	4	2	3	1	4
Peer-reviewed publications - Guidelines						5	
Book - Chapter				2		11	
Book -Editor			1	2		1	
Awards/Honors			2	5	8	6	7
Total Activities/ Initiatives	6	20	36	50	76	94	68

**As of March 2014. Due to time constraints, this table only recognizes 11 CSRTs.*

More details regarding the innovative and scholarly work being conducted by the CSRTs can be found in Appendix M.

Also, In order to promote the work of the CSRT Project facilitating greater understanding of the project and its goals of the wider Ontario-based audience, a video has been produced "The Clinical Specialist Radiation Therapist: Effective, Efficient, Evidence-based". The video has been distributed to all regions in Ontario via the communication directors and is posted on the CCO website for public viewing.

Finally, the report for the 2014 Labour Market Survey Report is currently being finalized. The survey that informed this report can be found in Appendix N.

C/ DISCUSSION

While the core mandate of the CSRT Sustainability Project continues to be the accumulation of evidence to further support province-wide, CSRT implementation, it has also focusing additional efforts on strategies to facilitate the realization of our ultimate goal of permanent integration of CSRTs into the radiation treatment fabric.

Data consistently show the actual and potential benefits of the appropriate addition of a CSRT to an existing interprofessional health care team. Senior CSRTs continue to maintain the levels of capacity expansion reported previously and build new services that contribute to better team functioning, better patient satisfaction and overall improved care for the patients they service. They have been increasingly taking on leadership roles in program development and innovation which speaks to how their skills and capabilities are being recognized and harnessed. Junior CSRTs continue to gain momentum and establish concrete scopes of practice as they build their competence assume more responsibilities. As with the senior CSRT, they are beginning to affect positive changes in the capacity and quality of the programs where they work, and contributing to the discovery of new ways of working that increases both the effectiveness and efficiency of their local teams. Patients' satisfaction with the care they receive from these new CSRTs is comparable to the levels reported by the patients from the senior CSRTs' practice. Radiation therapist and stakeholder satisfaction levels also remain consistently high.

As data continues to be collected and positive results are shared, the difficulties of generalizing data from one department to another provides an ongoing barrier to full understanding of the potential benefits of this new model in some areas. Successful implementation of CSRT positions requires strong leadership and advocacy, neither of which can be garnered when there is lack of understanding. As such, the project team continues to seek ways to make existing data relevant to the local domain. Upcoming peer-reviewed publications, a short video on the role of the CSRT and various presentations across the regions will help to address this ongoing challenge and assist in widely broadcasting the various benefits of the role to key audiences.

Further to this internal momentum shift regarding the new CSRT role, a change has also been seen in several regions around the province. Experiences of the Integration Support Team confirm the reality that the CSRT model of care has become part of the quality and/or quantity improvement discussion in centres where CSRT implementation has already been a success. Strategies considered by these departments when addressing a change in practice will routinely include the development of a CSRT position. This is evidenced in the fact that when seed money was offered to sites with CSRTs already in place, 5 of 7 sites responded immediately with ideas that were already being considered. This bodes well for the satisfaction of these departments with their existing CSRTs and for the further use of CSRTs in the future.

D/ FINANCIAL REPORT

Project expenditures continued to come in under budget for fiscal 2013/14. Fiscal third quarter (Q3) expenses for the 2013/14 funding year and forecast for the 2014/15 funding year were submitted to the MOHTLC by CCO Finance in early February 2014. The final financial report for 2013/14 has been submitted to the MOHLTC under separate cover in coordination with this report on June 10, 2014.

E/ CONCLUSIONS

Experience to date shows that despite a few ongoing challenges the CSRT role is gathering support and actively being discussed and adopted across the province. Cancer Care Ontario believes the CSRT Sustainability Project continues to meet, if not exceed, expectations in the development and formalization of this new CSRT role. Despite some funding challenges inherent in the system, the number of CSRTs has grown from 7 to 17 (and expected to grow to 24 by Summer 2014) in the past two fiscal years under extremely tight timelines. Data continue to be collected and reviewed and feedback from new departments has been tremendously positive.

One of the most important foci for the project team is to find methods of establishing and maintaining practice standards for CSRTs. This will ensure safe and high quality practice as well as ensure a common understanding of the role moving forward. It is critical as strive for complete integration into the clinical programs that clear standards are set and adhered to across all positions and departments. The project team continues to work with the CAMRT towards a single national certification process and establishment of a professional credential, to lead the newly established CSRT CoP and be academic alloy productive. It is evident that long term sustainability of this innovative and valuable role is becoming increasingly certain.

It is a critical time for the implementation of the CSRT role. We must find ways to capitalize on the levers currently in place to facilitate greater uptake of the CSRT role throughout the province where need exists. The CSRT role must be put on the table during discussions about alternate funding formulae and considered in the toolkit of strategies available for dealing with increased incidence, prevalence and treatment complexity as these factors collide – potentially threatening the system's ability to maintain existing levels of access to and quality of care.