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Canadian Association of Medical Radiation Technologists
1300-180 Elgin Street
Ottawa Ontario K2P 2K3
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The CAMRT News is the official member newsletter of the Canadian Association of Medical Radiation Technologists (CAMRT). It reaches approximately 12,000 members within the field of medical radiation sciences.

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Submissions: Do you have a story idea or a topic you would like us to write about? We welcome your feedback and suggestions.

Please email us at jmcgregor@camrt.ca.

Issue	Submission Deadline	Mailed Out
Number 1	December 5	End of January
Number 2	March 5	End of April
Number 3	June 15	End of July
Number 4	September 7	End of October

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CAMRT ACTRM



On the cover... MRT Week poster used to celebrate MRT Week November 4-10, 2018.

DISCLAIMERS:

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President's Message

As we near the end of 2018, we enter an exciting time for CAMRT and its members.

For one thing, CAMRT is nearing the end of its current strategic plan and just about to begin the next. We have been working diligently, and in broad consultation, on our strategic goals since the beginning of the year. Our November board meeting will be the time where we solidify our plans for the association over the next three-year period – a period that promises exciting developments ahead for the association and the profession as a whole.

And of course, November is the month of MRT Week, and all the important and exciting professional awareness activities that come with it. For my part, I am looking forward to spending time in Ottawa with my fellow Board members and I will take the energy of #MRTWeek2018 to our meetings with MPs, Senators and other officials on Parliament Hill. We will do our best to amplify your voices as we seek to raise awareness about the essential contributions made by the MRT profession to the health of Canadians and instigate action on issues of importance to our professionals.

I enjoy MRT week as it causes me to reflect on all of the positive experiences of being part of our chosen profession. It is a week that brings people together within their facilities and communities, but also across provinces and the whole country.



CAMRT is thrilled to play its part in the festivities and in building awareness over the week. Did you know that each year the association sends out over 4,000 posters for displays in 500+ facilities across the country?

This visual coordination, together with the energy from all of you on the ground makes for an amazing week of awareness and recognition for our profession. To make sure that we all get the most out of the week, we ask you to bring the spirit of MRT Week to life by doing what you've always done best during this special week: promote your good work, educate others about what you do, get those CAMRT posters up in prominent places, and show off your MRT pride at your facilities and online.

Happy MRT Week everyone!

Go Social with MRT Pride during MRT Week, November 4-10!

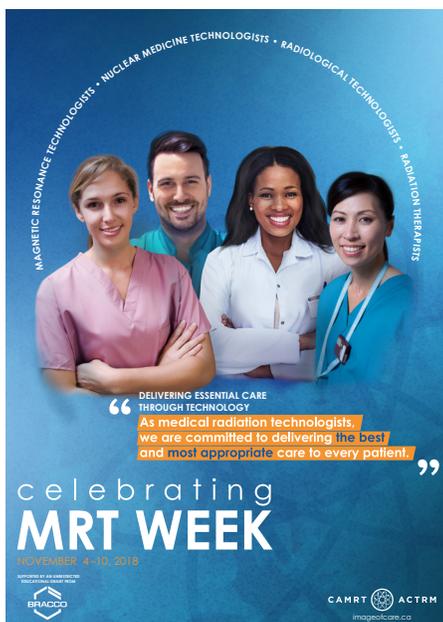
The power of MRT Week comes from the energy and creativity of your engagement. One of the ways we can make your contributions more powerful is by sharing your successes over the course of the week, and by using the successes of past activities to strengthen the next.

Social media gives us all the capacity to share what is most important to us with a wide audience. MRT Week is a perfect time of the year to share stories, pictures, or other information that demonstrates the best qualities of your profession, the MRT profession.

So, throughout MRT Week, be sure to send us your photos and your stories for us to share more widely.

- Create your own content for one of CAMRT's social media pages ([Facebook](#), [Twitter](#), [LinkedIn](#), [Youtube](#))
- Be on the lookout for CAMRT content to share in your own networks of friends and colleagues. Retweet, like, and share posts and get the message out that MRTs are the essential link, linking technology and patient care
- Use the hashtag #MRTWeek2018 so everyone can follow your tweets and posts
- Send your photos and stories by email (news@camrt.ca) to share in the next edition of the CAMRT News

Last year the #MRTWeek Facebook filter was a smashing success. Visit <http://www.camrt.ca/events/mrt-week/> for more details on how to add the filter to your Facebook profile.



Be sure to register for this year's, MRT Week webinar!

Webinar title: MRT Week 2018: Choosing Wisely and Appropriateness

Presenter: Stephanie Schofield, RTR, Quality Control Technologist, Diagnostic Imaging Nova Scotia Health Authority, Halifax, NS

Broadcast times:

- Mon Nov 5th 11:00AM EST
- Wed Nov 7th 12:00PM EST
- Thurs Nov 8th 2:00PM EST

[Register today by visiting the CAMRT online CPD catalogue!](#)

Advocacy @ CAMRT

Healthcare in Canada is a complicated beast. And while it may be true that it is governed provincially, there are just as many important discussions and opportunities to affect change at the national level. The clearest example of success of influence at the national stage has been the years-long push, followed by a Liberal government commitment to initiatives that focus on mental health and homecare – long-time projects of national associations. While the CAMRT is not currently pushing for projects in the same magnitude as those federal budgetary commitments, we are identifying key stakeholders and sharing our message to ensure that the MRT voice is heard loud and clear in healthcare decision-making forums.

Palliative Care Framework

Many MRTs are involved in the care of people undergoing, or soon to be undergoing, palliative treatments. The federal government is soon to be publishing a framework that describes how it sees palliative care delivery across the country for the foreseeable future.

The CAMRT has had the chance to provide input through a number of channels to this important work. CEO, François Couillard, took part in a consultative phone conversation with the authors of the upcoming framework, during which he was asked and provided insight on the roles MRTs take in the palliative realm and how the MRT education prepares professionals for this.



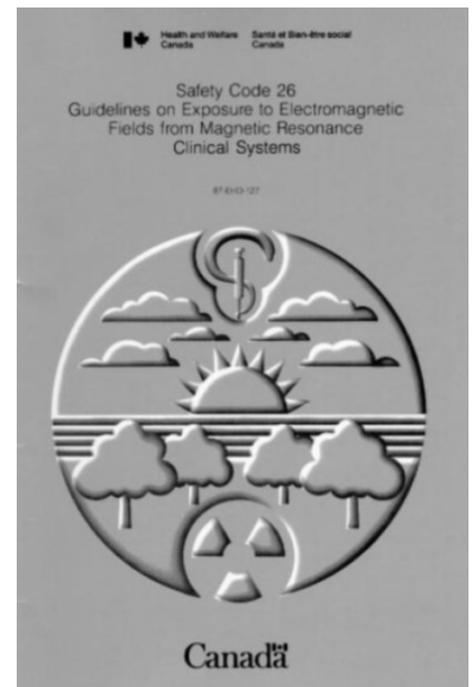
CAMRT CEO, François Couillard and other HEAL members meeting with MP John Oliver

In addition, the CAMRT marshalled support from a number of radiation therapist MRTs that work exclusively with palliative cases. These MRT leaders put together a very convincing case for increased continuity of palliative radiation therapy through rapid palliative access clinics and advanced practice radiation therapy roles, which was shared.

Submission to the Federal Budget 2019

This year, the CAMRT made a formal submission to the Federal Pre-Budget Consultations. Our first recommendation to the federal government focused on the appropriate and optimal use of medical imaging equipment, and the need to study the striking differences shown across the country in the Canadian Agency for Drugs and Technologies in Health (CADTH) Medical Imaging Inventory. A second

recommendation was that MRTs be considered an important player as consultations on artificial intelligence in health at the national level. The [full CAMRT Pre-budget submission is available to read in the Publications section of the CAMRT website.](#)



Safety Code 26

CAMRT was successful in convincing Health Canada to instigate a review of its Safety Code 26. This document, originally compiled in the late 1980s (with some minor adjustments over the years) is in need of an overhaul. In our meetings with Health Canada we impressed on them the importance of updating the





code, and that consultation with MRTs would be essential to the success of any review.

This review is now underway. CAMRT sent a communication to all MRTs working in MRI and received an overwhelming response. With our members, we will present the MRT view on the safety code and work this into subsequent drafts to help Health Canada update and improve their document.

Isotopes

Through the Multi-Stakeholder Working Group, CAMRT maintains an important voice in government monitoring of the isotope supply situation in Canada. Because of the connections made through this endeavour, CAMRT has been able to offer its members in nuclear medicine relevant and timely updates over what has been an eventful year for nuclear reactor isotope production worldwide. (For the latest updates, please see our [Isotope Supply page](#)).

Work with Government Agencies

The CAMRT contributed a lengthy submission to the pan-Canadian review on these agencies, conducted last year by Dr. Danielle Martin (of CBC-fame) and Dr. Pierre Gerlier-Forest. CAMRT has been working with many of these agencies for years (e.g., CIHI, CPAC), and is increasingly seeing value in collaborations with the agencies to build evidence and understanding of the healthcare system as it relates to MRTs. We are extremely pleased to have signed a memorandum of understanding with CADTH this summer, which enshrines our mutual commitment to maintaining up-to-date assessments and understanding of up-and-coming technologies in the field.



Meeting the Current Federal Health Minister, The Honourable Ginette Petitpas-Taylor, Hill Day 2016

the federal government in health. The updated *Canadian Way 2.0* assesses the federal governments, achievements in healthcare since entering office, and lays out some broad recommendations on concrete steps the government can take in its identified areas of priority.

HEAL



Organizations for Health Action

Hill Day 2018

The CAMRT Board of Directors is excited to be taking to Parliament Hill again this year. With a dozen representatives, CAMRT is planning more than 20 meetings with a variety of MPs and other federal government officials. While awareness about the MRT profession and its important contributions to the healthcare system is always on the agenda, we also expect to discuss a number of priority issues like advanced practice (in both medical imaging and radiation therapy), access to medical imaging, and appropriateness with officials connected to federal healthcare decision-making bodies.

Organizations for Health Action (HEAL)

As co-chair of HEAL, CAMRT CEO, François Couillard has had the opportunity to meet with a number of prominent decision-makers in healthcare, including the Federal Health Minister, the Conservative critic for health, and the leadership of Health Canada, among others. A recent focus at HEAL has been the revamp of its 2015 document *The Canadian Way*, which is a call to action for



Upcoming



We are leveraging the CAMRT's strong national and provincial partnerships (as well as the ever-expanding possibilities from virtual collaboration platforms) to broaden activities, and deliver education and networking opportunities of the highest quality to the most possible members, while minimizing the barriers of time and money. Check out these upcoming events in 2018-19, where members can customize their learning experience, and access the content that is most relevant to their professional reality, in a format that meets the needs of their personal and professional circumstances. For more information about upcoming events, visit www.camrt.ca/conferences.

The first Radiological Technology Roadshow is coming to BC, Ontario and New Brunswick!
Sports Injuries and Trauma Radiology

Visit the "Events" page at www.camrt.ca



Vancouver, BC
November 3, 2018

London, ON
November 3, 2018

Moncton, NB
November 17, 2018

Save the date for CONNECT 2019 - add May 10-11, 2019 to your calendar!

Keep an eye on this website <http://www.camrt.ca/conferences/regional/> for future updates, speakers and program information, as well as registration details!



Updates from the JMIRS



The *Journal of Medical Imaging and Radiation Sciences* (JMIRS) is a cutting edge, peer-reviewed journal that aims to influence practice within the rapidly evolving fields of

radiological, nuclear medicine, MRI and ultrasound technologists and radiation therapists. JMIRS provides an essential platform for Canadian and international medical radiation technologists and therapists to publish and discover their own body of knowledge to define and inform their practice, enabling translation to a global audience.

September Issue Highlights (Vol 49.3)

Remember, as CAMRT members, you must log-in through the Member's Resource area of the CAMRT website to access full JMIRS content.

[How We Found Purpose, Passion, and Happiness in Our Profession](#)

In this commentary, two MRTs share their personal and professional experiences after a year of living an academic practice agenda (as outlined in a [2017 article](#) by the Vice President of Clinical Operations for the Joint Department of Medical Imaging (JDMI) that described how changing organizational strategy can create a culture of academic practice for all medical imaging professionals).

[Optimum Positioning for Anteroposterior Pelvis Radiography: A Literature Review](#)

Pelvic radiography is used for the identification of hip joint changes, including pathologies such as osteoarthritis. Several studies have recommended that the position for this radiological procedure should be standing, not supine, to reflect the functional appearances of the hip joint. The aim of this review was to evaluate pelvis radiography positioning with respect to the image appearances and information provided for clinical decision-making. Aside from this, potential recommendations to the

radiographic technique for an erect pelvis projection will be considered.

[Image-Guided Radiotherapy in Paediatrics: A Survey of International Patterns of Practice](#)

Image-guided radiation therapy (IGRT) is widely used in the treatment of various tumour types in both adult and paediatric patients. However, there are no international guidelines on its optimal use in paediatric radiotherapy. This study proposes to evaluate the current patterns of practice regarding IGRT policy in paediatric patients compared with adult patients through an international survey.

[An Evaluation of Image Acquisition Techniques, Radiographic Practice, and Technical Quality in Neonatal Chest Radiography](#)

Neonatal chest radiography is a frequently performed diagnostic examination, particularly in preterm infants where anatomical and/or biochemical immaturity impacts on respiratory function. However, the quality of neonatal radiographic images has been criticized internationally and a prevailing concern has been that radiographers (radiologic technologists) fail to appreciate the unique nature of neonatal and infant anatomical proportions. The aim of this study was to undertake a retrospective evaluation of neonatal chest radiography image acquisition techniques against key technical criteria.

[Creating a Culture of Continuous Improvement in a Radiation Therapy Planning Department: A Pilot Initiative Using Quality Conversations](#)

Clinical and technical excellence is the foundation of high functioning health care organizations. Read about this pilot project where the authors explore the value of weekly quality conversations (QCs), short weekly team huddles that provide increased opportunities to identify and act on best practices.

LTWRAP 2018
October 20-21, 2018
Leading the Way
International Radiographer
Advanced Practice Conference



Issue Supplement - LTWRAP

Included as a supplement with this issue are the abstracts from the **International Leading the Way: Radiographer Advanced Practice (LTWRAP)** conference, which took place in Toronto, Ontario October 20-21. We encourage you to review the abstracts and connect with the authors to collaborate, share, and engage as we build our own body of knowledge and spark possibility for further inquiry.



Call for Papers

We are preparing a special issue of the JMIRS on the topic of **Artificial Intelligence (AI)**, to be published in

December 2019. Our goal is to present research findings, educational and clinical perspectives, systematic reviews, teaching cases, and commentaries of the highest quality that inform medical radiation technologists (MRTs) and members of the healthcare team on the role of MRTs in AI.

We invite MRTs, as well as our interprofessional colleagues to submit papers on the topic of AI, which may cover:

- Preparing clinicians to work within an AI environment
- Demonstrating the impact of big data, AI and machine learning on care, practice, treatment, interventions and outcomes
- Sharing foundational knowledge on AI, big data, data mining and machine learning
- Describing current case-based examples of the use of AI within medical imaging and radiation sciences
- Understanding the impact of AI on educational curriculum, teaching, learning, continuing education and professional development

Submissions are due by **May 1, 2019** through the JMIRS website: <https://www.jmirs.org>.

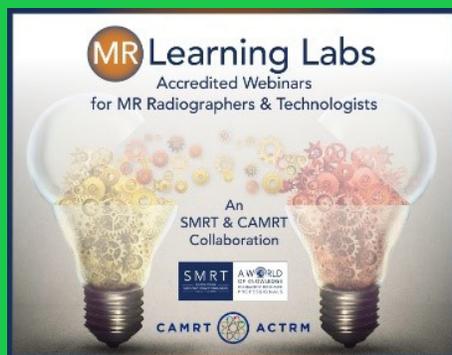
CAMRT'S MOST POPULAR WEBINARS

There are over 30 webinars in the CPD catalogue covering a variety of topics spanning all disciplines. Webinars are free for members – simply log-on to the CAMRT website and **browse the collection**. Register for a webinar at no cost, complete the accompanying 10-question quiz, and receive Category A credit!

Most popular so far in 2018 include:

- 1. Adult Head Trauma** “Learn a practical approach to screen the imaging of cases with recent head trauma”
- 2. Chest Pathology** “Refresh pertinent normal anatomy on chest CT, common chest pathologies”
- 3. Patient Communication** “A comprehensive overview of patient communication as it relates to the MRT profession”
- 4. Safe Patient Handling** “Best practices for repositioning on the treatment table, risk factors for musculoskeletal injuries”
- 5. Good Death: A Canadian Perspective** “key concepts of palliative care, including medical assistance in dying”

Be sure to check out these recently recorded webinars!



MRI Contrast Agents: Safety Issues and Practice. A collaboration with SMRT



Two-part series on Digital and Artificial Intelligence: How can we use digital and analytics to improve x-ray quality and to monitor & set targets for dose? A collaboration with GE Healthcare. Part three coming soon!

A Twitter Chat on Limited Practice



Every month, medical radiation technologists from all disciplines all over the world participate in an hour-long chat using the hashtag #MedRadJClub. A recent chat was on the topic of limited practice, based on this paper: [Assistant radiographer practitioners: Creating capacity or challenging professional boundaries?](#) The following themes were posted in advance for discussion, followed by a few selected tweets from each theme. For more details on #MedRadJClub, visit <https://medradjclub.wordpress.com/>!

1. In the UK, Assistant Radiographer Practitioners (ARPs) are part of the skills mix strategy and embedded in the team. Is this the case for other countries? What's the experience in other disciplines (e.g. radiotherapy?)

 **Adam Westerink**
@adamwesterink

In Australia (aussie aussie aussie oi oi oi) we have LXOs (licensed X-ray operators) who are not Radiographers (they may be nurses, doctors, gardeners, wards persons) and provide X-ray services in rural settings. #MedRadJclub

4:07 PM - Aug 21, 2018 · Brisbane, Queensland

♡ 7 👤 See Adam Westerink's other Tweets

 **Mark Given**
@MarkRGiven

Currently in Canada there are between 1300 and 1450 individuals practicing radiography in a limited capacity. #MedRadJClub

4:14 PM - Aug 21, 2018

♡ 4 👤 See Mark Given's other Tweets

 **Richard Evans**
@RichardEvans40

Assistant practitioners are not intended to introduce a "race to the bottom" mentality. The idea is to provide headroom for service and professional development. #medradjclub

Kim Lewis @avidkeo

T1: We don't have ARP's or ADP in NZ. I think before we get ADP, we would need to have AdP's first so current radiographers have somewhere to go, and dont just feel like their jobs are being taken by cheaper labour. #medradjclub

4:09 PM - Aug 21, 2018

♡ 14 👤 See Richard Evans's other Tweets

 **François Couillard**
@couillardf

In Canada we also have combined Lab/X-Ray Techs in several provinces- they are regulated in only 1 province (Alberta) . They work in remote areas. They have separate associations nationally and provincially. @CAMRT_ACTRM #medradjclub

4:12 PM - Aug 21, 2018

♡ 4 👤 See François Couillard's other Tweets

2. Does the role of the ARP in the UK contribute to role expansion for registered radiographers as was originally expected?

 **Big RAD Tom** @BigRadTom · Aug 21, 2018

T2: with the vast expansion of modalities such as CT etc does the plain film speciality need more APs to allow short falls in other modalities to be filled? I value plain film but has the way it is viewed changed in recent years? 🤔 #medradjclub @SCoRMembers twitter.com/MedRadJclub/st...

 **Kim Lewis**
@avidkeo

Seeing some of the new technologies coming out, like Carestrams mini CT for extremities, I think there is definitely a change to plain film. maybe that this is where general Xray is heading #medradjclub

4:27 PM - Aug 21, 2018

♡ 1 👤 See Kim Lewis's other Tweets

 **Rowanne** @Rowanne72 · Aug 21, 2018

#MedRadJclub

As a failed first time radiographer who ultimately worked as an ARP for 3 years before restarting the full course, working at this level hugely boosted my confidence. The course is very academic but as we know, radiography is very hands on

 **Kim Lewis**
@avidkeo

And that's another huge advantage, it opens doors for people who are not academically minded and find the uni study hard, but wold make excellent radiographers, give them another avenue to pursue. #medradjclub

4:31 PM - Aug 21, 2018

♡ 4 👤 See Kim Lewis's other Tweets

3. Scope creep in response to service pressures is also an issue highlighted in the paper, has anyone experienced this and what impact can this have (e.g. with supervision?)

Louise Harding @louiseaharding · Aug 21, 2018
Replying to @BigRadTom @SCoRMembers
Plain film/primary imaging is a specialist area in its own right and is a valued diagnostic modality...do not underestimate the power of the radiograph 🙄🙄 #medradjclub

Kim Lewis @avidkeo
Definitely! How often do you say to another radiographer, "I just do general". General is the foundation which everything else is built on. its the first top on the way. its vital to healthcare and if you didnt have it everyone would be complain. #medradjclub
4:34 PM - Aug 21, 2018
11 likes · See Kim Lewis's other Tweets



4. Most ARPs work in plain film and breast imaging – is this optimal use of the role and how might this change in radiography and beyond?

Mark Given @MarkRGiven
I think regulation and standards are key to the question. CLXTs are a regulated profession in Alberta but are unregulated in all other jurisdictions. Ed. programming and standards vary dramatically between jurisdictions. We need to advocate for standardized practice! #MedRadJClub
4:49 PM - Aug 21, 2018
2 likes · See Mark Given's other Tweets

Naomi Burden @naomi_burden
I think this is historical. Time to really start modelling the workforce for 2023 at all levels. Technology is driving us forward and attitude is holding us back #medradjclub
4:55 PM - Aug 21, 2018
17 likes · See Naomi Burden's other Tweets

Anne Mayes @amayes79 · Aug 21, 2018
Replying to @avidkeo and 4 others
Completely agree, so many newly qualified wanna move on too quickly before really securing good skills and knowledge of plain film- often seen as a stepping stone to other modalities. But 'plain film' deffo requires the most skill set #biggingupplainfilmrads

Sian @MrsMcLean11
You learn so much as a newly qualified radiographer and gain invaluable experience working in different areas and within multi disciplinary teams as well as experience of working with a wide variety of service users which is a good foundation before specialising #medradjclub
4:56 PM - Aug 21, 2018
3 likes · See Sian's other Tweets

Access to medical imaging service is an essential element of today's healthcare system. As we study limited practice internationally it is important to understand the complex healthcare landscape particularly in rural, remote and Indigenous communities. Ensuring safe and effective care for all our respective patients needs to be the focus, regardless of who is providing that care. Please refer to the CAMRT document: [Basic Overview of Limited Practice in the Canadian Medical Radiation Technology Landscape](http://www.camrt.ca/publications) (available at www.camrt.ca/publications), which provides a view of limited practice roles that are currently practiced in Canada, with insight into these roles from a historical, educational, regulatory and practice standpoint. This document also suggests potential action the CAMRT may take regarding the future direction of the association in relation to limited practice. Questions? Contact us at info@camrt.ca.

Celebrating Member Success



New Cone Beam CT Assessment of Acute Stroke Patients: Are We Ready for Prime Time?

Nicole Cancelliere, MRT(R) MSc, is a Clinical Research Technologist at the Joint Department of Medical Imaging in Toronto. She recently presented her team's work on stroke imaging technology at the Society of NeuroInterventional Surgery conference in San Francisco and in a SiriusFM Doctor Radio interview on the 'Vascular Surgery Show with Dr. Todd Berland', along with Dr. Vitor Mendes Pereira, the lead investigator of the study. Their research group's findings on cone beam CT assessment of acute ischemic stroke patients, and the potential for reduction of treatment delays and improved patient outcomes, are summarized below.

Stroke is the leading cause of disability in Canada and the third leading cause of death. Every year there are over 50,000 new strokes, with nearly 14,000 of cases resulting in death. For every minute delay in treating a stroke, a patient loses 1.9 million brain cells. Thus, it is vital that revascularization therapy is performed as soon as possible.

Upon arrival to the hospital, a patient suspected of suffering an acute ischemic stroke (AIS) must undergo either a CT or MRI of the brain in order to rule out a hemorrhage, determine the site and size of occlusion, and assess the infarcted area. If it is determined that the patient has a large vessel occlusion (LVO) with a small infarcted area and larger area at risk, they are an ideal candidate for endovascular thrombectomy (EVT) treatment. Using mechanical aspiration or stent retrieval techniques, the clot can be removed allowing reperfusion to the ischemic tissue (Pereira et al., 2015).

In 2015, five randomized control trials showed that EVT treatment is more effective than standard medical care for patients with AIS caused by occlusion of arteries in the proximal anterior circulation (Goyal et al., 2016). These trials also demonstrated that reduced time between symptom onset and

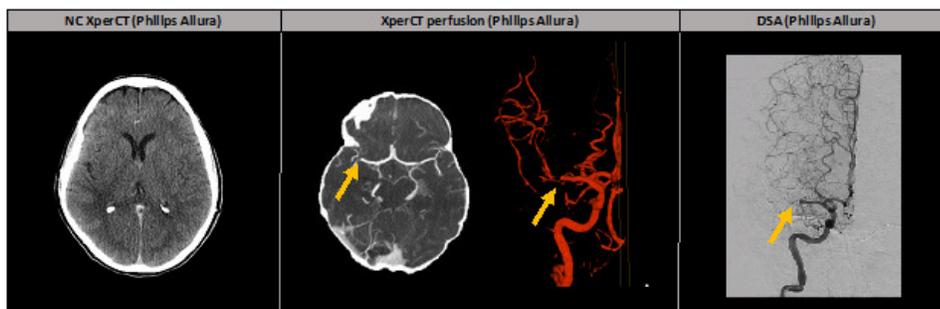


Figure 1. Stroke imaging using cone beam CT in the angiography suite. Non-contrast enhanced XperCT (left) illustrates absence of cerebral infarction. Intravenous XperCT perfusion imaging and 3D reconstruction (middle) demonstrates the exact location of the right M1 occlusion (yellow arrows) as visualized on the Digital Subtraction Angiography (DSA) image (right).

revascularization is an independent predictor of improved patient outcomes. Thus, it is important that EVT candidates receive treatment as soon as possible.

Analysis of the time between patient arrival and treatment has shown that intra-hospital transfer from CT to the angiography suite (where revascularization takes place) can take up to 60 minutes. This has motivated the Toronto Western Hospital's (TWH) multidisciplinary neurovascular research team to work with the angiography suite imaging research engineers to develop advanced stroke imaging within the angiography suite, offering the possibility to skip the traditional CT and bring patients straight to the angiography suite for treatment. The group has improved the imaging quality of CT-like images acquired in the angiography suite and developed software to analyze these brain perfusion images.

These images are acquired using cone beam techniques, utilizing the c-arm fluoroscopic x-ray system ('XperCT', Philips Healthcare, The Netherlands). Using a 5-point quality assessment questionnaire, the perfusion XperCT imaging was evaluated by an experienced interventional neuroradiologist and compared to previously acquired standard CT, perfusion CT and follow-up CT imaging acquired 24 hours later. Preliminary results including 9 patients demonstrate that XperCT stroke imaging software in the angiography suite provides the necessary diagnostic information required for treatment decision-making, including detection of ischemic core, collaterals

and vessel patency (Figure 1). Moreover, core definition compared to baseline CT, CT perfusion and follow-up CT showed good prediction of the final infarct in cases with complete revascularization in less than 60min from baseline imaging.

Currently, stroke patients must first visit the CT department for imaging to confirm LVO before going to the angiography suite for EVT treatment. The results of this study suggest that in the future eligible patients could

Celebrating Member Successes!

We want to use our national and international platforms to spread the word about the accomplishments of MRTs across Canada. Have you or your colleagues:

- published a paper?
- presented a poster?
- won an award?
- been accepted to speak at a conference?
- received a grant?

Let CAMRT know!

This is your association, and it is a powerful vehicle to share our achievements and collective learning.

Simply contact Jessica (jmcgregor@camrt.ca) and we will prepare an article for the quarterly CAMRT newsletter, the bi-weekly e-news, or our social media channels (Twitter, Facebook, LinkedIn).

bypass CT and go directly to the angiosuite for imaging and treatment. Nicole concluded the study results at the conference saying, "By using this technology in the angiosuite, hospitals can reduce treatment delays by up to 60 minutes and hence the time of stroke symptom onset to treatment, which will significantly reduce brain damage and improve outcomes for patients."

Nicole and Dr. Pereira would like to thank the following co-authors who were instrumental to the research being presented: Nicholson P¹, Bracken J², Nijnatten F³, Grunhagen T³, Hummel E³

¹ Division of Neuroradiology, Department of Medical Imaging, Toronto Western Hospital, University Health Network, Toronto, Ontario, Canada

² Image-Guided Therapy, Philips, Toronto, ON

³ Image-Guided Therapy, Philips, Best, The Netherlands

The manuscript for this work is being drafted and the authors are looking forward to submission later this year. Readers interested in further information about this study can contact the author at Nicole.Cancelliere@uhn.ca.

References

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Spinal SBRT and VMAT Planning Project: Q&A with Leah Classen



Leah Classen received her Certificate in Dosimetry (CDC) through the CAMRT June 2018. During this process, she was encouraged to take the next step and publish her study on the topic of spinal SBRT and VMAT planning. We spoke with Leah about her research and her experience with navigating the publication process for the first time.

Congratulations on completing your Certificate in Dosimetry! What was your motivation to get this certificate?

Upon finishing my training in radiotherapy, I felt that if I could learn more in one aspect of the field it would be in treatment planning, since I found it to be the most challenging and interesting. I graduated from radiotherapy in 2003 and despite embarking on a new, busy, and challenging career in a brand-new clinic in Prince Edward Island, I still craved further knowledge in our field. I tasked myself with a goal to assess where I was in my career in 10 years' time and ensure I was fully comfortable in dosimetry; and maybe even receive a credential. By 2013, I had been working in treatment planning full time (after returning from my second maternity leave) and passed the CMD boards (right on track to meet that 10-year goal I had set). I was very proud of myself, but found I was still craving more dosimetry knowledge. The board exam is simply pass/fail, so there wasn't a huge learning opportunity apart from the 2-day preparatory course you can take, which I did and loved. I was reading the CAMRT E-News and saw the

advertisement for the CDC program. It was great because there were courses to take, clinical work to document, and a research component. The CDC program is a great comprehensive learning experience.

Tell us about your research project!

I love doing research (pre-RT, that was my career path) and often have questions when doing clinical work. After discussing with management to ensure I would have clinical support, I embarked on this journey. Traditionally, spinal treatments have been delivered from a posteriorly directed beam, avoiding entrance through the anteriorly located organs. However, when planning with VMAT it is often desirable to use full arcs so as to take full advantage of all the control points available. This contradiction left me to wonder if various approaches should be addressed. I did a literature search and found few studies comparing different VMAT plans with various arc arrangements in a controlled, systematic manner. An analysis of the optimal arc arrangement is of clinical significance, since minimizing the number of arcs will also decrease overall treatment and delivery time.

In treatment planning, I frequently question and assess what is the best beam arrangement to facilitate this plan delivery? In our center, we have yet to treat spine SBRT clinically, so I thought that would be a good topic to work on since our SBRT program will likely continue to grow. This is where my research project "Treatment planning study of three different volumetric modulated arc therapy beam arrangements for various targets in spinal stereotactic body radiation therapy" for the CDC program began. My study investigated the optimal plan design (that meets RTOG dosimetric criteria for spinal SBRT), while maintaining efficiency in plan delivery by ensuring treatment time is minimized. I also used a phantom to control confounding anatomical variables. I conducted this study using the three most common

shapes. I ensured that all volumes were contoured at the same anatomical level as a control as well.

What have been your first steps in getting your research published in a peer-reviewed journal, and why did you think this was an important step?

First, I thought about which journal my study would best suit. I had two journals that many of the studies I referenced came from. One is *Medical Dosimetry* and the other is *JMIRS (Journal of Medical Imaging and Radiation Sciences)*. After thinking about my study and knowing it was Canadian work, I decided to reach out to the journal that is associated with my professional association. I then read the authors section and contacted the editor to confirm I could apply to publish through them. I am currently editing my study for publication. I felt publishing is an important step because it completes the research process. It gives you a chance to have your work peer reviewed. It is also important to share what clinical knowledge we gain with others, as it may help shape our day-to-day work. It is the ultimate form of collaboration across centers and disciplines.

What sort of practice changes are you hoping to see as a result of your research?

I am hoping that this work proves useful to any center starting up a spinal SBRT program. It may provide a great format to start thinking about the best plan techniques to use, based on volume criteria. It was interesting to find that in a non-complex target volume a single arc was sufficient, this is usually very different than what's used clinically. I hope that sharing my information will start people thinking about the most efficient plan design to use while being able to meet metrics. Sometimes questioning why you are doing what you are doing and going back to the basics is the best place to start, instead of going into autopilot and auto planning templates.

“Hi, I’m...” Introducing the CAMRT Education Team!



One of the newer faces at CAMRT, **Carrie Bru**, Director of Education oversees the entry-level certification process as well as CAMRT’s continuing professional development

activities. In certification, Carrie works with Agnesa to lead the processes associated with the development and delivery of the national certification exam. One big project they currently have underway is the revision of the entry-to-practice competency profiles. For continuing professional development, Carrie works with Melanie and Mira to develop and deliver new educational offerings as well as maintain current offerings, including our popular certificate programs. All of the activities and projects that occur in the education department cannot occur without the input and expertise of our dedicated volunteers. Exam development work groups, certificate program committees, special project committees and task teams, we couldn’t do this without you! If you have questions for the Education department, or if you are interested in getting involved, contact Carrie Bru at cbu@camrt.ca; 613-234-0012 ext. 227.



Meet **Mélanie Bérubé**, CAMRT’s Manager of Continuing Professional Development. For many years, Mélanie has been managing all aspects of the CPD program – from course development all the way to delivery. She also oversees the logistics for each of the CAMRT’s Certificate Programs and is the primary point of contact for both

candidates and committees. Through her involvement with the Continuing Education Credit Approval Program (CECAP), Mélanie provides a Canadian perspective on the ARRT’s Recognized Continuing Education Evaluation Mechanism Committee (RCEEM) which supports and promotes CAMRT’s mandate for life long learning. If you have an idea for course development, are interested in obtaining a post certification credential in a specialized area of practice or are responsible for an upcoming educational activity, feel free to reach out to Mélanie to see how the CAMRT can help at mberube@camrt.ca; 613-234-0012 ext. 226.



As CAMRT’s Education Coordinator, **Mira Peneva** is your first point of contact for any enquiries related to the vast array of CAMRT’s Continuing Professional Development (CPD) opportunities. She is in charge of the administration of all program offerings: from short quick self-studies and virtual programming options, to full-length courses and certificate programs. She works hard to provide excellent service to candidates while supporting

them in achieving their CE goals through CAMRT’s programs. If you have questions about any of the CPD offerings, please do not hesitate to reach out to Mira and she will be happy to assist you at mpeneva@camrt.ca; 613-234-0012 ext. 237.



As CAMRT’s Manager of Certification, **Agnesa Stoyanov** is responsible for all operational requirements of the certification process for medical radiation technologists in Canada, including all aspects of managing the national certification exams. She interacts with all stakeholders in the process of the credential assessment and

provides guidance to Canadian and internationally educated MRTs applying to write the certification exams. Contact Agnesa at astoyanov@camrt.ca; 613-234-0012 ext. 245.

All You Need to Know about Category A Credit



Submitted by Melanie Bérubé, Manager of Continuing Professional Development

Any MRT that has browsed through CAMRT's Continuing Professional Development (CPD) catalogue—or better yet, completed a CPD course through the CAMRT—has noticed that most educational offerings (including Virtual Programming and Events) have been assigned Category A credit. In fact, MRTs are increasingly seeing activities offered outside of the CAMRT with this specific credit type. You may be wondering—what exactly is Category A credit and why is it important to me?

What is a Category A credit?

The CAMRT has been given the status of a Recognized Continuing Education Evaluation Mechanism (RCEEM) organization by the American Registry of Radiologic Technologists (ARRT). The ARRT is a leading credentialing organization that recognizes qualified individuals in medical imaging, interventional procedures, and radiation therapy. An organization with RCEEM status can evaluate and approve continuing education activities for Category A credit, a process that ensures the quality of educational activities that contribute to the MRT's ongoing competence. Through this process, all components of an educational activity are assessed by subject matter experts for the assignment of continuing education credit/hours. This includes evaluation of the learning objectives, speaker credentials, as well as duration of the activity.

An activity that has been approved by a RCEEM for Category A credit is recognized by organizations and regulatory bodies in Canada mandating continuing education. Activities approved by a RCEEM are assigned credit/hours as well as a unique reference code for validation. A Category A credit **validates participation in an educational activity and provides irrefutable evidence in the case of an audit.**

Activities approved for Category A credit are peer reviewed by subject matter experts to ensure it contributes to the enhancement of the MRTs professional knowledge, skill, and judgement. It also ensures the subject matter is comprehensively covered and related to current or future practice.

One (1) Category A credit = one (1) hour of CPD.

Is a Category A credit required for MRTs in Canada?

No, a formalized Category A is not required; however, it does meet the need of any MRT belonging to an organization that has legislative requirements for continuing professional development in Canada.

What is the benefit of Category A credit?

A Category A credit approved by a RCEEM ensures that the activity:

- was developed and delivered by credentialed individual(s)
- has undergone peer review and meets the definition of a continuing education activity
- meets or exceeds minimum standards of quality

In short, Category A credit not only helps you meet your continuing education requirements, it also validates the quality and relevancy of the learning activities.

Each participant of an educational activity approved for Category A credit should receive documentation that validates participation or successful completion of the activity. Such documentation can be submitted to an MRT's quality assurance program and/or added to the MRT's professional portfolio.

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Certificate in Breast Imaging Updates

With ongoing advances in technology, the Certificates in Breast Imaging (CBIS and CBID) provide an opportunity for the medical radiation technologist specializing in mammography to obtain credentials that are recognized by professionals in the discipline of breast imaging. Over the years, the CBI program has undergone many changes to enhance the program and fit the current needs of the mammography technologist.

Beginning January 2019, further changes outlined below will be in effect for new and existing candidates.

Breast Imaging 1 and Breast Imaging 2 Courses

The existing Mammography 1 and Mammography 2 courses are being phased out and replaced with the newly developed Breast Imaging 1 and Breast Imaging 2 full-length courses. The Breast Imaging courses will provide comprehensive coverage of current mammography practice, adjunctive imaging modalities, and address advances in technology, including breast tomosynthesis.

Breast Imaging 1 and Breast Imaging 2 will be available beginning Winter 2019.

Mammography 1 and Mammography 2 Courses

No full-length registration or challenge exam will be available for Mammography 1 and Mammography 2 after **Fall 2018**. Only rewrite exams for those who qualify will be available. As of **January 2021**, Mammography 1 and Mammography 2 will no longer be accepted as pre-requisites for the CBIS or CBID programs.

Prerequisite Requirements Effective January 2019:

For **Certificate in Breast Imaging – Screening**

- Breast Imaging 1 and Breast Imaging 2 — *Mammography 1 and Mammography 2 can be substituted for Breast Imaging 1 and 2, respectively, until Fall 2020.*
- Quick Self Study (QSS) – Breast Cancer Overview

QSS – Breast Cancer Overview must be completed within the 5 years preceding the candidate's CBIS program expiration date.

For **Certificate in Breast Imaging – Diagnostic**

- Breast Imaging 1 and Breast Imaging 2 — *Mammography 1 and Mammography 2 can be substituted for Breast Imaging 1 and 2, respectively, until Fall 2020.*
- Imaging Breast Pathology (IBP)

Imaging Breast Pathology must be completed within the 5 years preceding the candidate's CBID program expiration date. To be eligible to use these courses towards the Certificate Program, 75% or higher is required on the final examination for each.

Experience Requirement

Starting January 2020, experience requirements will be part of the CBI programs. For the CBIS, the candidate will require a minimum of 1450 hours as a practicing mammography technologist over the 3 years preceding entry into the CBIS program. For the CBID, the candidate will require a minimum of 1750 hours as a practicing mammography technologist over the 3 years preceding entry into the CBID program.

CBI Program Timeline

After January 2021, the CBI programs will require that all prerequisite courses be completed within the 5-year period preceding the candidates' entry into the CBIS or CBID program.

CPD Highlights

Continuing Professional Development in Breast Imaging — AVAILABLE WINTER 2019

These courses described below will be the new didactic component for the Certificates in Breast Imaging (CBI) — both screening and diagnostic. There will be a transition period whereby both Mammography and Breast Imaging courses will be accepted towards the CBI programs prerequisites; however, Mammography

1 and Mammography 2 will eventually be phased out. See page 20 for more information on the changes our CBI program has undergone to enhance the program and fit the current needs of the mammography technologist.

Breast Imaging 1 (replacing Mammography 1)

Breast Imaging 1 is designed for new and practicing mammographers. As the role of the mammographer expands, so does their knowledge base. Topics covered include breast anatomy and physiology, mammographic positioning, patient care in mammography, screening and diagnostic protocols and recommendations, breast cancer types, staging and grading of tumors, treatments and surgical interventions.

Textbook required:

Andolina, Valerie. Mammographic Imaging: A Practical Guide, Lippincott Williams & Wilkins, 2018, 4th edition.

Breast Imaging 2 (replacing Mammography 2)

Breast Imaging 2 is designed to complement Breast Imaging 1. Content includes basic interpretation and critique of mammographic images, the BI-RADS system, and breast density classification; basic breast pathology; factors pertaining to diagnostic imaging, such as diagnostic breast imaging procedures, biopsies, pre-surgical localization and clip placement, specimen radiography, TRAM flap imaging, cryo-freezing, and interventional procedures; physical components and features of a full field digital mammography direct system, as well as image quality, exposure and exposure index values; quality control procedures, quality assurance, and CAR accreditation procedures; and adjunctive breast imaging modalities.

Textbook required:

Andolina, Valerie. Mammographic Imaging: A Practical Guide, Lippincott Williams & Wilkins, 2018, 4th edition.

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UPCOMING CHANGES TO THE CERTIFICATE IN DOSIMETRY PROGRAM

Medical dosimetry is a field that has gone and continues to go through radical change. With continuous advances in technology and ever-changing standards, the Canadian Dosimetry Certificate (CDC) provides an opportunity for the radiation therapist to obtain credentials that are recognized by professionals in the discipline of radiation oncology.

Over the years, the CDC program has undergone many changes to enhance the program and fit the needs of the medical dosimetrist. **Beginning in January 2019**, further changes outlined below will be in effect for new and existing candidates.

Didactic Component

All didactic course material has recently been updated by practicing Canadian radiation therapists and physicists to reflect current practice.

Clinical Component

The Summary of Clinical Competence (SCC) is an in-depth summary of treatment planning techniques that will help the candidate develop and obtain a comprehensive skillset in dosimetry.

The SCC has been updated to reflect current techniques used at centers across Canada.

Candidates with 5 years or more full-time experience within the last seven years as a Dosimetrist in Radiation Therapy are only required to complete one case per category.

Research Proposal Component

For the third and final requirement, the candidate is required to complete a detailed research proposal directly related to dosimetry. This replaces the previous requirement for a full research paper submission. CAMRT strongly encourages the candidate to carry out the research

project and submit their paper for publication however is not required.

This change also applies to the candidates currently in progress with the CDC program should they choose to complete the research proposal in lieu of the project.

CDC Timeline

The CDC program is designed to be completed within a 5-year period. To allow more flexibility for completion, this timeline **will now begin with the successful completion of Dosimetry 2**. Eligibility requirement for the CDC registration will be 75% or more on the examinations **for both Dosimetry 1 and 2**.

Today across Canada, many Radiation Therapy departments recognize the CDC as an advanced credential and considers it a desired asset when applying for dosimetry related positions.

Reader Response re: “The Millennial MRT” (Volume 36, Issue 1)

Submitted by: Carole J. Sinnott RTR, ACR.
Note that the original letter has been edited for length in publication.

I find that the article is slanted towards honouring the “Millennial MRT” and putting down the “Baby Boomers”. All x-ray departments have “state-of-the-art technology and software available in the workplace”. Ionization radiation equipment is installed, calibrated and maintained by expert technical support staff. Protocols are set up under Radiation Protection guidelines. There is no “easier, faster, or more intelligent way to do something” and no “opportunity to explore.” The Technologists (baby boomers) who use this technology daily to obtain diagnostic images actually teach the millennials how to work with the equipment. Being proficient in technology (tech-savvy) does not make a person a good technologist in and of itself. As in any occupation that a person may be working at or training in, whether it be McDonald’s or an X-Ray Department/Program the hours required are usually set by the facility in accordance with the province’s Employment Standards. Students/staff work their shift and if the department has multiple shifts the next shift will take over, if not the department is closed and will open the next working day.

Technologists usually work their shifts and complete all x-rays in that time frame. There is no “working long hours”. It is not possible to have “working hours should be flexible or condensed” in the medical field. Each technologist is responsible to work their whole shift. “Requests for short notice vacation requests and extended weekends” cannot work in this profession as again who will have to work their shifts when they are away “to allow better expression of individuality and work-life balance.” X-ray is an essential service where patient care is top priority. Job responsibility means being there when needed.

In an X-Ray department all Technologists, students and other support staff work as a team to create a safe, efficient, professional and respectful workplace. The correct positioning of the patient to obtain a diagnostic image is the most important and basic requirement to become a skilled MRT. In this respectful workplace the Millennials learn from the Baby Boomers and the Baby Boomers also learn from the Millennials.

The sentence “We all have a vested interest in listening carefully to our millennial colleagues to learn more about how we can create a mutually happy, safe and effective workplace!” should read: We all should have a vested interest in listening carefully to our “seasoned” colleagues as they are the ones who will be teaching the “millennials” how to become

The Millennial MRT

A Force to be Reckoned With!
Submitted by Alan Thibault, Professional Practice Manager, Medical Radiation Technology, Ottawa Hospital

There is no shortage of discussion regarding the importance of achieving a highly engaged workforce in healthcare institutions. We all agree that patient-centered care is our primary objective. However, some healthcare employees may remain skeptical, when they perceive that they are not similarly valued or empowered by their employer. Despite overwhelming evidence that high employee engagement is directly linked to positive patient experiences and outcomes, many hospitals fail to fully engage their staff.

effectively engage and retain this new workforce. Currently, baby boomers are the largest generation occupying the healthcare workforce. However, in the next 20 years, a dramatic shift will occur as the boomers exit and the millennials begin to dominate healthcare. Some estimates forecast that millennials will make up approximately 50% of the healthcare workforce by the year 2020.

A fair performance management system is integral to maintaining an engaged and happy millennial healthcare workforce.

Historically, managers have controlled and, in some cases, dominated employee behaviours, training, reward systems, and discipline. Moving forward, most organizations will see a dramatic cultural shift where employee control will increase and autocratic management styles will be considered outdated. Personal expression and coaching for success will become the new gold standard. These considerations may lead to a daunting task for managers. It's quite simple, employees (regardless of generation) just want to be treated with respect and dignity and for their careers to be a gratifying experience.

Advice for Leaders
Generational gaps do indeed exist within healthcare teams. Managers expecting to lead with a one-size-fits-all approach will be sorely disappointed with their staff engagement results. Consequently, leaders must consider ways to make the workplace more interesting for the younger generation. Team discussions will help leaders to work with new staff to identify opportunities to make the healthcare workplace more fun and engaging.

Millennials typically have a lower tolerance for workload inequities and egregious behaviours from their peers and leaders. To ensure that such perceptions do not proliferate, managers must model exemplary leadership styles. Equal, but differing attention must be given to high, medium, and low performers. Providing effective coaching and mentoring for medium and low performers will ensure that they reach their full potential and remain engaged. When discipline is deserved and warranted, it should be done fairly, transparently, and according to a clear formalized process.

High performers may not require constant affirmation and reassurance; however, it is important to ensure that they have all the tools and resources required to accomplish their tasks. High performers will quickly become disengaged when they see their low



Although it is impossible to generalize completely accurately, the classic boomer will not always challenge long working hours. They may also be more likely to remain with one organization for many years. Boomers are also accustomed to the typical hierarchical structure of management, rather than one that is team-based and democratic; whereas millennials prefer to contribute equally to the decision-making process and appreciate a more lateral management style. They typically want constructive feedback on a more regular and informal basis, rather than solely through an annual performance review. They also hold very high expectations for themselves and for those who lead them. They seek constant intellectual stimulation, social interaction, and job challenge to remain fully engaged in the workplace. They also place a high value on work-life balance and expect their managers to regard this desire as an important consideration. As a generation that grew up with Google and Wikipedia, they expect information to be readily available and solutions to be innovative.

Employee Engagement for Millennials
Much has been written about the variations in leadership styles required to manage different generations effectively. As the healthcare workforce becomes increasingly dominated by millennial employees (those born between 1982-2000), healthcare leaders must adapt quickly with management styles that will

Provincial Updates



Manitoba

The MAMRT was proud to invite members to the 2018 Banjo Bowl football game on September 8th, with 38 members attending to see an exciting game that unfortunately ended in a loss by our Blue Bombers. Thank you to those

who came out to cheer and participate in yet another MAMRT event (even if some of you were cheering for Saskatchewan!).

MRT Week is November 4-10, 2018, and we have many things planned (Hint: there will be a contest for the “creative”!), so keep an eye out on the MAMRT Facebook page for details. We are hoping to have a bigger and more visible presence in the public in 2019, with a

professional skilled Technologists who work as a team, upholding the work ethics of the profession, totally responsible for their workload and respectful of their colleagues. I’m an X-Ray Technologist (RTR) with advanced certification in Radiography (ACR) and retired sonographer (RDMS) and Echo cardiographer (RDCS). I have worked in hospitals, clinics, Doctor’s offices and even in the military. This “seasoned” MRT has easily adapted to all the advancements in technology from conventional x-rays right to today’s computer based (DR) digital radiography to become “tech savvy” like my “millennial colleagues”.

follow up to our highly successful 2017 bus shelter campaign.

As summer draws to a close, we look forward to our 90th anniversary celebrations in 2019 and invite all members interested in volunteering in any capacity to contact the office at admin@mamrt.ca.

Reports from CARO-COMP-CAMRT 2018 Conference

The first Joint Scientific Meeting among three sister organizations, the Canadian Association of Radiation Oncology (CARO), the Canadian Organization of Medical Physicists (COMP), and the CAMRT was recently held in Montreal this past September. With the theme “All for One – Collaborating and Innovating for Person-Centred Care,” attendees enjoyed a variety of presentations on topics relevant to the professionals working in therapeutic radiation sciences. We asked four CAMRT members to report on sessions they attended and some key takeaways for our readership.



Session: Radiation Therapy Speaker Exchange: Considering the Thyroid in Breast Irradiation
Presenter: Melanie Dempsey, PhD, RTR(T, CMD, FAAMD (Virginia Commonwealth University)
CAMRT Reporter: Jenny Soo, RTT, ACT, MEd (BC Cancer)

Thyroid function abnormalities and radiation treatment for breast cancer, what's the link? Radiation-induced hypothyroidism is a common complication of head and neck cancer or Hodgkin disease treated with radiation to the thyroid region. Treatment fields for breast cancer are designed primarily with radiation directed specifically to the whole breast plus/minus nodes around the neck & supraclavicular region but can be close to the thyroid gland. As Radiation Therapists, our duty is to ensure what is planned is accurately replicated when the patient is receiving treatment but also practicing/ following the principles of Radiation Safety – specifically ALARA and reducing doses to surrounding tissues/structures. Given the proximity of the thyroid structure to the treatment fields designed for breast cancer treatment, this raises the important point of how do we (RTs) ensure our practice does not compromise patient's quality of life? What implication does this have on survivorship?

The wider discussion is, does screening for thyroid abnormalities occur for patients who received radiation treatment? If screening for thyroid abnormalities is not routinely conducted and symptoms/signs of hypothyroidism are non-specific and vague, as patient's advocate, we need to be proactive and ensure patients have routine thyroid functioning tests to diagnose and treat these problems early on. As a practicing RT, we can play a role in ensuring our patient's thyroid is not forgotten. This can start with having dose limiting strategies in the planning of the treatment. Consider the thyroid as an organ-at-risk and determine how much radiation is received by the thyroid using the planning software. Being aware the potential of hypothyroidism as a latent effect is building knowledge increasing understanding of the after-effects of treatment. Although mortality rates from breast cancer are declining, many breast cancer survivors will experience physical and psychological sequelae that affect their everyday lives. If hypothyroidism can be identified in the early onset of the survivorship journey, patient's quality of life will not be affected.

Session: CARO Oral Session #2 – Outcomes / Survival
Presenters: Listed below
CAMRT Reporter: James Loudon, RTT (Stronach Regional Cancer Centre)

Understanding the impact of clinical care on patient outcomes and survival is essential. At the “Outcomes / Survival” session, Brundage *et al.* found unexplained variations in cancer survival outcomes in Ontario. Among the 14 Ontario LHINs, significant differences were found to exist. Although a number of variables were analyzed, more research is needed to better understand the underlying causes of these differences. A memorable aspect of this presentation was the extent of these survival differences. It was clear that these variations need to be better understood so patients can access the same high-quality outcomes across the province.

Stosky et al. examined practice patterns in Alberta for patients receiving palliative radiation therapy at the end of life. Patients closer to end of life were correlated with reduced completion of intended fractions. Outcomes of this research can guide decision-making tools to guide more single treatments and reduce over-treatment. This presentation highlighted how practice can be refined so

that both patients and the healthcare system can benefit.

A proof-of-concept study by *Velev et al.* sought to reduce a fragmented patient experience by aligning Radiation Therapists (RTs) to patients, instead of specific tasks. The priority points of care identified had primary RTs aligned to 80% of patient activities, compared to a standard of 40%. Patients were highly satisfied with meeting their information needs and staff satisfaction also increased. Another benefit reported was reduced use of drop-in supportive care required by patients; however, more research is needed to understand why. This last point was interesting as the resources required to realize benefits associated with aligning RTs to patients may also be offset by decreased resource requirements in other services.

Rodin et al. evaluated the 5-year impacts on fiscal effectiveness on the implementation of the Choosing Wisely Campaign. Adhering to Choosing Wisely recommendations would support the goal of reducing use of low value services, not supported by evidence. Implementation of Choosing Wisely was found to have a modest change; however, more targeted education, financial incentives and behavioural interventions were suggested. This presentation resonated as increased fiscal constraints will only necessitate increased adherence to Choosing Wisely recommendations. It would be interesting to evaluate how patient engagement with Choosing Wisely could impact its uptake.

Session: Radiomics Symposium
Presenters: W. van Elmpt, PhD (Eindhoven University of Technology), B. Haibe-Kains, PhD (University of Toronto), & J. Seeuntjens, PhD (McGill University)
CAMRT Reporter: William T. Tran, RTT, PhD (Sunnybrook Health Sciences Centre and University of Toronto)

Medical imaging plays an important role in patient care; primarily used as a tool to identify anatomical structures and determine their morphological characteristics. In recent years, the development of functional imaging modalities using magnetic resonance imaging (MRI) and positron emission tomography (PET) have been shown to yield information about physiologic or metabolic processes in organs or malignant tissue. As medical imaging systems are becoming increasingly



digitized, a rapidly developing field of *radiomics* has been focused on extracting high-dimensional, quantitative data from medical images that are clinically meaningful — in essence, to be used as a decision-support tool for clinicians (1). Attaining radiomics data constitutes a discreet workflow, which involves the following steps: 1) images are acquired; 2) regions of interest (ROI) are selected; 3) features are extracted from the image-sets and lastly; 4) data mining and modelling (1,2). Data output is usually large, thus the term “big data” is used interchangeably to refer to radiomics analyses in the same way as it is referred for other “omics”-type sciences (e.g. genomics). This is because these scientific approaches contain immense biological datasets that are minable, and computationally expensive. Fortunately, high performing computers in the modern technological era have provided an opportunity for rapid data analyses, which can approach data problems with machine learning, deep learning and artificial intelligence.

In oncoimaging, radiomic features have been shown to represent the spatial and temporal properties of tumors associated with metabolism, cellularity and tissue composition. Recent reports have used radiomic attributes (features) derived from imaging signals to model prognostic and treatment-response outcomes (3,4). Taken together, the ultimate goal for radiomics is to provide *actionable insight* from quantitative imaging data, i.e. to give clinicians enough information to prognosticate or predict outcomes; for example characterizing aggressive versus indolent tumors, or measuring tumor response to treatments such as radiotherapy. Radiomics holds the promise of providing objective, measurable, and quantitative data; however there are still several translational challenges before routine clinical implementation, which include standardization, repeatability, reproducibility, and carrying-out robust data provenance. To work out these challenges, several working groups and consortiums have been created, which include the *Quantitative*

Imaging Network (QIN), the *Care Consortium*, and the *Image Biomarker Standardization Initiative (IBSI)*. Progress has been made so far in terms of bringing together experts in the field, and developments in establishing the imaging biomarker workflow that can be adopted in both academic and clinical settings.

The impact of radiomics to radiation oncologists, medical physicists and radiation therapists span across potential changes in managing the patient’s care, to recognizing that there is uncertainty about how artificial intelligence and automation will impact (and potentially replace) clinicians and physicists in the clinical setting (5). Despite these current and forthcoming considerations, advancements in medical imaging analyses and radiomics will continue to grow, and will have to be laid out carefully in terms of its impact to patients and clinical endusers.

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Session: Investigating Radiation Therapy Incidents: The Power of a Collaborative Investigation

Presenters: Carol-Anne Davis RTT, MSc, FCAMRT, (Dalhousie University); Nicole Harnett RTT, BSc, Med (University of Toronto), Brian Liszewski RTT, BSc (University of Toronto)

CAMRT Reporter: Natasha McMaster RTT (Nova Scotia Health)

What happened and who did it? These types of statements tend to be the first questions asked when an incident occurs. While this information is important, it doesn’t address the “how”, or in other words, the factors that

may have contributed to the incident and Carol-Anne’s talk showcased the importance of this in a very interesting and engaging way.

The talk focused on an event that took place in September of 2017 where members from the Canadian Partnership for Quality Radiotherapy (CPQR) hosted a “murder mystery”-style event on incident reporting, of which I had the pleasure of attending. Participants included radiation oncologists, radiation therapists, medical physicists, dosimetrists, and residents. All participants were broken up into multidisciplinary teams. An incident was presented to the groups and participants were asked to rank the top 3 contributing factors prior to the investigation and after, the results were eye-opening. Prior to the investigation the top result was inadequate hand-offs and after it was policies/procedures non-existent/inadequate with communication being common before and after.

A second big focus of the talk was the multidisciplinary aspect of the investigation. Each discipline contributes to the overall care of the patient in different ways and therefore their understanding of an incident may be influenced by differences and practice and perceptions. However, working together and using these differences is crucial in uncovering contributing factors and, according to the presentation, can alleviate:

- overrating the significance of some factors/actions
- misjudging the relevance of facts/data
- misunderstanding of other team members’ roles

As health care professionals, we strive to deliver the best possible care to our patients and this includes learning from our mistakes. Incident reporting is not about placing blame or the incident itself, it is about understanding how things happen, the processes involved, and then how we can adapt our practice and learn so that similar incidents can be prevented. I think events like the one presented in this talk are a great way to showcase the importance of understanding the factors involved in and incident in a way that is tangible and relatable to the learner. Speaking from the experience of the event itself, it was something that has stayed with me and has influenced my practice in incident reporting and investigation.

Announcements



In the last issue (Vol 36.3) we printed an incorrect photo from the CAMRT awards ceremony on page 9. The Welch Lecturer for 2019 is Sophie Huang, pictured here.

Resolutions or Motions for 2019 Annual General Meeting

CAMRT members are invited to submit resolutions or motions to be debated at the 2019 Annual General Meeting, which will be held on Saturday, **April 27, 2019**, in Ottawa, Ontario.

All resolutions or motions must be sponsored by ten CAMRT voting members.

The deadline for receiving resolutions is **DECEMBER 28th, 2019**. Please send to

the attention of François Couillard, Chief Executive Officer by either fax: (613) 234-1097 or email: fcouillard@camrt.ca.

CAMRT AWARDS PROGRAM — COMPETITIVE

The CAMRT invites submissions for the new 2019 CAMRT Competitive Awards Program.

Deadline: February 15th, 2019

CALL FOR NOMINATIONS FOR THE CAMRT HONORARY AWARDS

Now is the time for you to honor those colleagues and submit their name for nominations to the following awards.

- 2020 Welch Memorial Lecturer
- Life / Honorary Life Member Award
- Dr. Marshall Mallett "Lamp of Knowledge" Award

- Early Professional Achievement Award
- Steward of the Profession Award
- Grassroots Advocacy Award
- Outstanding Service Award

Deadline: January 15th, 2019

Annual Speaker Competition—43rd ASRT Radiation Therapy Conference **September 15-17, 2019, McCormick Place, Chicago IL**

We are looking for an innovative or forward thinking presentation that addresses a topic in Radiation Therapy or Dosimetry.

Deadline: October 30, 2018

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CAMRT Research Grant Program

The Canadian Association of Medical Radiation Technologists (CAMRT) annually awards a research grant of up to \$5,000 for original research related to the medical radiation sciences.

The deadline for applications is April 1. Applications must be completed in accordance with the Guidelines and Policies for Submission of Grant Applications and forwarded by email to: editor@camrt.ca.

Guidelines and Policies for Submission of Grant Applications

APPLICANT ELIGIBILITY

- The Principal Investigator must be a CAMRT member in good standing for the current year and for the duration of the project funded by this grant.
- Collaborators may be non-members of the CAMRT, but must not be agents of any commercial entity.
- Previous research grant recipients are eligible to apply.
- Applicants may not have concurrent CAMRT research grants.
- Applicants are limited to the submission of one application as principal investigator per year.
- Proposals will be considered for projects that are ongoing applications for or have or received funding from another source.

For more information go to: <http://www.camrt.ca/mrt-profession/professionalresources/research-support/> or contact editor@camrt.ca.

PROPOSAL ELIGIBILITY

1. Preference will be given to proposals that are relevant to the CAMRT and MRT profession.
2. Proposals for research related to radiation therapy, dosimetry or medical imaging (including radiography, nuclear medicine, MRI, sonography and advanced specialties) are eligible for consideration.
3. Proposals related to education and administration in the field will also be considered.

LIMITATIONS

Members of the research grant committee are not eligible to apply for a grant during their term on the committee.



Join us Saturday, April 13, 2019

OAR Breast Positioning Event

Course Will Also Be Webcast Live!



HANDS-ON Positioning Workshops with Live Models!

Course Director:
Joan Glazier, MRT (R) CBI

Provincial MRT Lead, Ontario Breast Screening Program (OBSP), Cancer Care Ontario and diagnostic mammography, breast ultrasound and interventional procedures technologist, Breast Imaging Department, Women's Health Centre, IWK Hospital, Halifax, Nova Scotia



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NOTE: A videographer will participate in the positioning workshops to ensure that webcast participants can experience close-up visuals of hands-on positioning to provide an optimal learning opportunity. Evaluations from webcast participants from last year's program said the close-up visuals provided a phenomenal learning experience.

Note: The OAR offers **20% discounts** for all live webcasts of CME events for groups of 4 or more MRTS. For more details please contact the OAR office at: mail@oarinfo.ca