BUILDING A TRAUMA IMAGING COURSE FOR CAMRT

*We spoke with **Jessica Kimber, MClSc, BHSc, MRT(R)**, CTIC, about the process of building a full-length course for CAMRT.*

What inspired your course, Trauma Imaging for MRTs?

I've always enjoyed being involved in trauma care! I like the pace, the teamwork and the responsibility MRTs have as members of the trauma team. Early in my career, especially as a newbie to practice MRT, I enjoyed being part of the trauma team, but had an internal, slightly frantic feeling during high intensity cases. I wanted to build my knowledge so I could feel more confident, which led me to start doing my own deep dives into trauma pathologies and mechanisms of injury beyond what I had learned in school. The more I learned, the more confident and adaptable I became, and that was the seed that inspired me to start writing this course. Gaining that deeper knowledge helped me feel more confident in my practice. I had already done quite a bit of my own research and wanted a way to access the information I'd started gathering for my own knowledge and reference. So I thought—why not turn it into a course?

How did your background in advanced health care practice and trauma prevention influence the content or approach of this course?

During undergrad, we were often scheduled in the ER x-ray or in CT, where students would gain experience working with traumatic injuries. Starting in that environment as a student gave me an invaluable learning opportunity because I wasn't the sole MRT responsible for a trauma case—I could observe, participate, and learn as I went. I've now been a practicing technologist for nearly nine years, so over time you naturally develop confidence. But for me, I also wanted to understand the why behind what we do, prompting me to dig deeper into trauma imaging concepts on my own.

In undertaking graduate studies, I had more experience with research, dense academic reading, and knowledge translation. I came to realize I was well-positioned to translate the information I sought out early in my career around trauma imaging into something more accessible—evidence and explanations grounded in real clinical context, tailored to what MRTs actually need to know, and material that goes beyond what I had learned in my undergraduate studies. Most references used to form the course were written for physicians, but with my academic and clinical experience I've been able to connect that information back to the MRT practice and show how it can influence the way we work on a day-to-day basis.

Trauma cases can be unpredictable—how does this course help MRTs build adaptability and confidence in those high-pressure moments?

One of the biggest challenges in trauma imaging is the pace—everything unfolds incredibly quickly, and MRTs must make rapid decisions that directly affect patient care. This course is designed to give MRTs the clinical insight they need to stay composed, adaptable, and confident during those unpredictable moments. Technologists are already familiar with performing standard image-quality checks. When any image is taken, technologists automatically review many things – patient positioning, exposure, visibility of the regions of interest, IV contrast timing, to name a few. Many routine elements of image and exam quality are assessed rapidly, often checks that were established during MRT training. But this course goes a step further. It provides guidance on what else to look for specifically in trauma imaging—where to focus your attention after those initial checks, and how to identify subtle signs that may indicate more serious underlying issues.

One section of the course walks through patterns MRTs can take in beginning to interpret a trauma-series set of radiographs. When reviewing a pelvic radiograph, how can we notice some of the subtle indicators of pelvic instability—details that could influence how you prepare for the patient's CT scan or how patient transfer might be best managed. Recognizing these early signs allows MRTs to anticipate challenges and adjust accordingly.

What makes this course stand out from other continuing education opportunities in trauma imaging?

Many available courses offer isolated, 'one-off' sessions dedicated to a single, specific injury or trauma. Others tend to focus on general communication and working effectively within interprofessional teams. This particular course, distinguishes itself by exploring different

pathologies, mechanisms of injuries, and relevant warning signs in substantial, high-level detail.

I believe the information presented here exceeds what I encountered during my undergraduate (MRT) studies, and it goes beyond the scope of my initial training in CT and X-ray modalities within a hospital setting. The material provides a deeper dive into pathologies—content typically reserved for the training of radiologists or emergency physicians—yet it centers these topics within a MRT context.

This represents a higher-level course that genuinely elevates our professional understanding of critical pathologies.

Can you share an example from your own experience where quick thinking or image adaptation made a difference in patient outcomes?

There have been many instances where during the initial review of the pelvic imaging of a trauma case, I have observed some subtle fracture through one of the pelvic rims. Though subtle, the location of some specific pelvic fractures is a significant red flag, indicating a high risk for a potential bladder or urethral injury. In these cases, I will highlight the finding, prompting the radiologist to formally confirm the fracture and prompting discussion between the trauma team lead and the radiologist around their concern for associated soft tissue injuries. If I have observed this during a whole body trauma CT pan scan, where flagging this gives the opportunity for both radiology and trauma lead to discuss and agree whether further imaging of the bladder is warranted. If so, and the patient is clinically stable, we can then keep the patient on the CT table for an additional 10 minutes, allowing the contrast medium, which they have already received during the CT pan scan, to reach the bladder, allowing us to take delayed images, and better determine if there is any contrast leaking around the bladder, indicating injury. This practice is a win-win: it optimizes my own workflow as it prevents the patient from returning later for bladder imaging, provides superior care to the patient, and fosters improved communication among the physicians and team members present in the room. It genuinely promotes overall better care and effectively positions the technologist as an essential, proactive member of the trauma team.

How do you see imaging technology evolving to better support trauma diagnostics in the future?

As technology evolves, image quality is only going to keep improving - we'll be able to detect even more subtle injuries. This definitely supports trauma diagnostics, but it also puts more pressure on the MRT. The more we can see, the more we have to evaluate—and more things could potentially be missed during our regular checks. At the same time, our equipment is only going to get faster, meaning there will be more information to process in less time for MRTs. We're going to need to become increasingly adaptable, which is exciting for evolving technology—but it also means that technologists themselves need to keep evolving alongside it.

What advice would you give to MRTs who may feel nervous or uncertain when faced with trauma cases?

What worked for me—or what still works—is simply getting more information. I kept asking "why" about everything, wanting to better understand the patterns that exist in trauma imaging and approaches to optimize imaging in this patient population. Having the information from this course readily available is fantastic. I've referred to it many times myself because, even though I read the textbooks and learned the material, being able to readily reference it in the moment is endlessly helpful to my own practice.

Feeling nervous or uncertain when faced with trauma cases is somewhat inherent with the critical nature of trauma imaging. You have to work quickly, and people are naturally nervous because they want to do a good job and get it right despite the stress of the environment. A lot of that nervousness can be managed through practice: don't shy away from trauma cases during training/onboarding, get involved, and if you don't know something, ask your colleagues or try to gain as much hands-on experience as possible.

Even though it's normal to feel nervous or uncertain, that high-intensity environment can be channelled differently when you feel prepared. For me, those exams have become really exciting and interesting because I've channelled the intensity of the room into doing my job exceptionally well.

Looking ahead, are there other areas of MRT education you're passionate about developing next?

First, I'm really interested in the trauma prevention side of things—specifically, the mental well-being of MRTs who face challenging cases and heavy workloads every day. That's an area I'm passionate about and might want to develop some content for in the future. The Trauma Prevention and Recovery Certificate for first responders course, which I have taken goes hand in hand with trauma imaging, and some of these learnings can be moulded into a mental wellbeing course or session for MRTs who are involved in trauma imaging. This trauma imaging course doesn't directly address mental well-being for MRTs. In a way, it leads in that direction: the more information and knowledge technologists have, the more supported and confident they can feel in their work. Hopefully, that confidence helps with their mental well-being as they tackle challenging cases. When MRTs feel they can handle cases competently, it can have a positive impact on their mental health—even if the course itself doesn't specifically address MRT mental well-being.

I'm also passionate quite broadly about quality – image quality, quality control, and quality assurance. These would be topics I could comfortably develop material for!