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# JOURNAL

of medical laboratory science

## FROM VITAL SIGNS TO BLOOD PRESSURE READINGS:

The Risks of Working Out of Scope

My Mental Health Journey:  
Lorenne's Story

David Ball Award



Fall 2019 | Vol. 81, No. 3

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Christine Nielsen  
CHIEF EXECUTIVE OFFICER

The CSMLS is a two-sided organization. One side is the certification branch, where we provide the gold standard certification testing for the medical laboratory profession in Canada. The other side is the association branch, where once you are a certified medical laboratory professional, we support you on your career journey. How exactly do we do that? By providing you with great products and services that help you excel in all aspects of your career. Some of those products are obvious, like the one you are reading right now; the CJMLS is a product to keep you up to date on industry and association news while giving insight into trends and popular topics.

Other products include professional development, be that online courses, webinars or live events, like LABCON. There are many benefits to being a member of your professional association. Our job

## Hitting the Mark for Members

at the CSMLS is to ensure we keep giving you those benefits. The challenge for us is finding the range of benefits for each member and at each stage of their career. With 14,000 members, it can be difficult to know what everyone needs. But challenges are what keep us motivated!

We constantly review our analytics, industry trends and your comments through email and social media. No surprise – we love DATA! We note your concerns and needs. We use this information in conjunction with formal research to determine our next steps in developing relevant products and offerings.

---

*Based on your feedback, buying habits and value systems, we are constantly modernizing our products and services to meet your needs because we exist for our members.*

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That means, you may have been asked to fill out a survey or two or asked to be part of a focus group. Your feedback is helpful to us as we shape the CSMLS into the association you need.

The Society has been around for over 82 years, and we'd like to be around for another 100 years, but we can only do that if we shift and change with the profession. While these changes most often come from external forces, like health care transformation, they also come from changes in consumer behaviour. We know that each generation is motivated by different factors and seeks value in different ways. What was considered valuable to members in the 1940s is very different than what is valuable to our members of today and tomorrow.

Based on your feedback, buying habits and value systems, we are constantly modernizing our products and services to meet your needs because we exist for our members. Just this year, six CSMLS members received a pin commemorating their 50-year membership. That means those six members spent the majority of their lifetime with us. We are honoured to be an important part of your career and your life, and we plan to keep handing out those long-term pins for many more years to come. ■



Maria Klement  
2019 CSMLS PRESIDENT

Critical conversations often are not easy. They require patience, openness and tactfulness – a willingness to truly listen to the other party involved. Despite some inherent difficulties, critical conversations shouldn't be avoided, especially when people's lives and livelihoods are at stake.

I bring this up because critical conversations are necessary in addressing the health human resource (HHR) shortage. As CSMLS President, I have been fortunate to speak with government officials and provincial committees on behalf of the national medical laboratory profession.

If you follow our communications channels, like eNEWS and social media, you probably know that I participated in an interview with Global News during Lobby Day to raise awareness of the profession. In June, I had the opportunity to meet with the B.C. finance committee. While there, I

## Safeguarding Our Profession One Conversation at a Time

talked about the current HHR shortage in British Columbia, not just from a CSMLS perspective but from a personal one as well. As a lab director, I have seen the effects of the shortage in my own community and at my workplace. It's not pleasant.

I urged the committee and provincial government to get involved in addressing the shortage. I guided the conversation to focus on two main considerations. First, I recommended that the government increase the supply of new laboratory professionals by increasing the capacity of local training programs in British Columbia. The conversation also centred on creating bridging programs for internationally educated MLTs and incentivizing MLTs to work in remote or rural areas hardest hit by the shortages.

My second consideration involved the regulation of medical laboratory technologists in the province. At the time

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*Regulation is critical to ensure scope of practice and entry to practice standards are defined uniformly across the province.*

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I am writing this message, the profession in B.C. is at the tail end of completing the process of self-regulation, but that process is facing suspension in light of the Cayton Report, based on an inquiry into the performance of the College of Dental Surgeons of British Columbia and the *Health Professions Act*. The Cayton Report highlights scenarios where the author asserts self-regulation did not work well within the province. It's a hefty document, but you can access it online. We encourage you to read it so you understand why some people have concerns about self-regulation.

It is our stance, however, that suspending the process of self-regulation leaves the public without the safety and reporting mechanisms provided to other health occupations. Regulation is critical to ensure scope of practice and entry to practice standards are defined uniformly across the province.

I recognize that other provinces and territories are feeling the pinch of an overburdened workforce. This issue is not isolated to British Columbia. Be assured that CSMLS actively advocates for the profession in all provinces and territories in Canada. When we're needed, we are more than willing to offer our support whether it's in person, over the phone or via teleconference. We are accustomed to critical conversations, and we won't shy away from them. ■

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IN FOCUS



## MY MENTAL HEALTH JOURNEY: Lorenne's Story

This year, I was honoured and delighted to be able to speak at LABCON2019 in Fredericton, New Brunswick. I shared my mental health story which is deeply personal and, although it was difficult, I hope I was able to share how important it is to show empathy towards others and how to make time for yourself through self-care.

If anyone has visited the CSMLS Mental Health Toolkit, you will see me as one of the Faces of Mental Health. Through the ups and downs of my own story, I have learned over and over again that it is important to slow down in your everyday life and take inventory of what your body is trying to tell you. It is difficult to recognize in yourself when you need to make a change before you reach a point of exhaustion or burn out. Without making changes, you may stress yourself even further and it will require more work on your part to get to a point where you feel more like yourself again.

Everyone has different symptoms. For me, my stomach felt like a heavy ball and my entire body shook as if I wanted to jump out of my own skin. Other times, I walked around feeling like at any moment I would burst out in tears, and I wanted to sleep all day due to exhaustion. I have trouble looking at myself and realizing that I need help, and it is hard to remind myself that other people in my life may be having their own struggles that I do not know about and possibly need help, too.

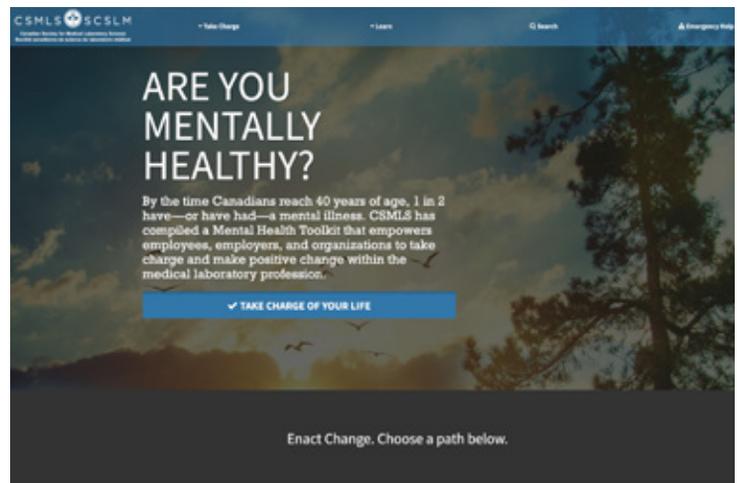
Why do we feel like we have an endless to-do list? There are too many expectations that we put on ourselves, which leads to these mountainous feelings of inadequacy. For me, I use up all my energy and strength to work full-time, take care of my three young kids, manage my household and enjoy my marriage. This can take up all my time and I forget to take care of me. It can be hard, but everyone should try to find some time in their day to do something that is just for you – that makes you feel happy or relaxed.

I enjoy a workout before I go to work in the morning; it helps me feel strong and fit both physically and mentally, which in turn makes me better prepared for the rest of the day. When I feel overwhelmed by my thoughts that get stuck on repeat in my head, I turn to journaling. Reading books is a great way to relax, as well as a warm bath, yoga or going for a walk.

Another tool I find very useful during times of intense emotions is an app called Mindshift. The app helps with anxiety, perfectionism and panic, to name a few. There are descriptions of what your signs/symptoms may be and tips to manage these feelings using strategies.

Sometimes, you just cannot get through these things alone and require some outside help to sort out what is going on in your life. By talking with a health care professional, like your doctor, you can be referred to seek help through your Employee Assistance Program (EAP) to see a counselor/therapist. I saw a therapist and what a world of a difference that made for me. I cannot explain how freeing it felt to talk to someone and let go of all my feelings of guilt and fear. In return, I was given tools and strategies to try at home. One of the tools I tried was meditation and deep breathing exercises.

Also, try to check in with people in your daily life. Let others know you are there for them, too, if they want to talk; for example, saying hello and “how are you?” can make a difference because you care about them. We don’t know what is going on in someone else’s life or if they may be going through their own struggles. Others may not see that you are struggling, as well. Take time to be empathetic towards each other. This world is so big,



and we shouldn’t have to feel alone in it. We should feel comfortable in recognizing when we just don’t feel like ourselves, and be able to seek help without feeling any judgment. I want to work on changing the stigma surrounding mental health and make it a daily discussion. It is okay to not be okay and to make the necessary changes in your life to find some balance so that you can feel more like yourself.

Although you can’t see it or measure it, mental health is real. We need to take our own health seriously. All in all, only you know yourself best, and it is in your best interest to take care of you. 📌

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LORENNE FRIESEN  
MLT, Senior Technologist



# Personal Protective Equipment – GETTING THE RIGHT FIT

**M**aking good decisions about the selection, use and maintenance of personal protective equipment (PPE) is important for all medical laboratory professionals (MLPs). Management's responsibility is to ensure the health and safety of lab personnel, and getting the right fit requires understanding, cooperation and a practical, risk-based approach between both management and staff.<sup>1,2</sup>

"Leave it until last." PPE must be the last item to consider when implementing hazard controls. That may sound surprising to an MLP who is organized, effective and action-oriented, but the use of PPE is the least effective hazard control. Simply put, if you are relying on PPE alone, the risk is not adequately managed. Instead, begin with the hierarchy of controls so that other methods to reduce risk are considered. Practices and safety culture within the laboratory have improved over the years, where colleagues and management can speak to all lab personnel to remind them to wear PPE. If you are an employee with a non-supervisory role, and your colleague isn't wearing PPE, you can let him or her know about the requirement to wear the protective gear, without fear of reproach. The role of management is to promote and monitor compliance to the established standards, and PPE requirements are no different.



One size does not fit all. Failure to adhere to PPE requirements is often thought to be due to comfort issues. While this would appear to blame the worker, the opposite is the case.

In the modern lab environment, it should be easy to spot missing PPE and this should lead to a check-in to understand why PPE is not being worn. Whatever your role, use the opportunity to remind lab personnel about the importance of maintaining standards. When there is too much emphasis placed on PPE alone, it can lead to situations where other hazard controls are diminished in importance. Let's not forget to draw as much attention to other methods of hazard control that may not be as visible. Remember, effective engineering controls and up-to-date protocols and procedures need to be considered before relying on PPE.

One size does not fit all. Failure to adhere to PPE requirements is often thought to be due to comfort issues. While this would appear to blame the worker, the opposite is the case. The organization is responsible for ensuring that the barriers to wearing PPE are removed, including any comfort issues. This can be a financial challenge, and it's important for the organization to embrace the need for a variety of PPE sizes, types and fits for PPE to match the diversity of lab personnel. In most cases, PPE includes eye, face, hearing and respiratory protection, as well as hand protection, such as gloves for handling chemical, biological and physical (hot/cold) hazards.<sup>3</sup> Donning and doffing PPE is a topic worthy of competency checking. In fact, training without a formal assessment is insufficient. For example, a proper method is required to remove gloves and wash hands or remove and fold a lab coat to prevent external contamination. The best way to improve understanding is to use hands-on demonstration for PPE use.

Incidents involving PPE must be investigated with an open mind. There are times when PPE has reduced the severity of injury. In such cases, it may seem easier to brush off these incidents as close calls or near misses. But the most valuable information has yet to be uncovered. In cases where PPE prevented injury or illness, it's important to acknowledge the higher potential for injury or illness should the PPE have failed. Work with your colleagues to further investigate such an incident. Be bold about the corrective actions and see where it takes you.

Lab incidents involving high pressure and high temperature

occur more frequently than desired. Consider the following incident scenario: While completing a task, a worker suffers a steam scald to their forehead but no injury to their eyes because safety glasses were being worn. Would you be satisfied to perform such a task with a face shield since it provides coverage of the eyes and face? That's the easy solution, but it does not go far enough to protect you and your colleagues. The organization needs to consider modifying the device; for example, placing a guard so that the steam cannot escape towards the worker. How about changing the device's programming, such as controlling the sequence of operations so that the device cools first, before opening?

Rather than relying solely on PPE, the health and safety management system can be used to establish and implement effective solutions. This type of analysis requires a concerted effort on behalf of lab personnel and management. Spending time and resources to effectively manage hazards in the lab will lead to better outcomes for all involved. ■

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# Fast-Track Models for Delivery of MLT Programming:



## A Perspective on the CSMLS Call to Action

As we all know, the CSMLS has released a Call to Action to help address the predicted health human resources (HHR) shortages in Canada.<sup>1</sup> While much of this work, as well as other initiatives over the last several years, has focused on reducing clinical practicum time, increasing simulation, addressing the issues for internationally educated certification candidates and increasing the graduation rates of medical laboratory technologists (MLTs) in Canada,<sup>2</sup> it may be time to revisit and rethink an old argument: the baccalaureate degree.

The 2017 CSMLS Newly Certified Graduate Survey indicated that 59% of certified MLTs began their medical laboratory science program with a bachelor's degree or higher.<sup>3</sup> This statistic is a significant one as this potential trend raises questions regarding degree entry requirement opportunities while respecting entry for those individuals with other academic qualifications. Before beginning this argument, it is essential first to state my positionality. I have been a faculty member at the College of the North Atlantic (CNA) for over a decade and have advocated for degree entry to practice. However, I thoroughly understand that the likelihood of degree entry to practice occurring in my lifetime is slim to none. This reality is in part due to several forces and perspectives related to educational credentialing in Canada, barriers to education, government funding models and other forces internal to the laboratory profession.<sup>4</sup> Indeed, this topic and others, such as subject certification, have been extensively explored by the CSMLS as well as researchers aligned with the field.<sup>5,6,7,8</sup> The purpose of this discussion is not to revisit the idea, as I believe this chapter of the book closed some time ago.

Instead, what I am referring to is the myriad of unemployed or underemployed life science graduates that permeate the Canadian labour market. Reminding me of this trend is a recent article by the CBC, "The millennial side hustle, not stable job, is the new reality for university grads." In it, the author introduces a 21-year-old mechanical engineering graduate who applied for 250 engineering jobs but received only four interviews<sup>9</sup> and had to apply for work at his local grocery store. In many industries,



The 2017 CSMLS Newly Certified Graduate Survey indicated that 59% of certified MLTs began their medical laboratory science program with a bachelor's degree or higher.

this story is not an uncommon one in Canada. For example, between 1991 and 2011, the number of university degrees increased significantly, yet many young university degree holders are still considered overqualified, working in occupations requiring lower levels of education.<sup>10</sup> Anecdotally, it is difficult to refute this when in my own experience I have met many baristas, food servers and retail associates who can discuss the final exam they just completed in comparative animal physiology. In simple terms, Canada has a resource that we are not taking full advantage of: our very well-educated youth.

What does this have to with the Call to Action? After nearly 10 years of teaching in an accredited MLT program, there are more than a few things that I have learned about students. One of these concepts is that students with an existing baccalaureate degree are more likely to excel than those without a degree. This conclusion is not to say that there isn't a fair number of exemplary students direct from high school or poor achievers with existing credentials, as any MLT educator may attest. It is merely a description of an anecdotal broader trend. Attributed to this trend may be any number of factors linked to more general learning theory. For example, students with existing credentials have had the opportunity to develop several key traits that their peers have yet to realize fully. These may include effective study habits, maturity, critical perspective and a base of learning on which they can easily layer MLT skills. This aspect of learning is simply an example of assimilative learning, wherein learning is characterized by a steady and stable progressive development in which new learning is constructed, integrated and stabilized.<sup>11</sup>

This last point is of the most considerable significance, and one that educators should note. As we know, graduates of many Canadian and international degrees, including those in the fields of biochemistry, biology, physiology, microbiology or kinesiology, undoubtedly have a strong foundation from which to build laboratory medicine skills. It is naive for educators to believe that we need to spend an inordinate amount of time familiarizing these students with topics like laboratory glassware, pipetting, centrifugation and spectrophotometry when they already have a foundation on which they can construct (assimilate) knowledge. To obsess over the lack of competency-based training observed in many university academic environments is an axe which I have heard many continue to grind. It is not that these topics are irrelevant (though I would argue their significance in contemporary lab medicine); we merely need to recognize that these individuals are more likely to have been tacitly and incidentally educated with complementary MLT skills during their academic careers. Sure, a life science graduate may not have completed a competency that explicitly states, "The student will operate a centrifuge," but why would we take this competency-based omission as an implicit indication that they do not have the necessary skills, prerequisite learning or understanding to perform the task with minimal intervention?

So what am I proposing? To begin, we can look at comparative



What does this have to with the Call to Action? After nearly 10 years of teaching in an accredited MLT program, there are more than a few things that I have learned about students.

health professional education programming. The nursing profession, for example, has done something very well of which we should take note. Nursing has aptly recognized the prior learning of many graduates and existing post-secondary students to attract highly successful candidates to its programs. Due to their success, accelerated nursing programs are commonplace in Canada, including those from Memorial University of Newfoundland, McMaster University and St. Francis Xavier University, to name a few.<sup>12,13,14</sup> Why haven't we created such programs? Should we be advocating that our governments should fund such models? Is this a means to address the HHR shortage?

Below is the proposal that I have mulled over for many months, trying to conceptualize what a fast-track MLT program may look like within the Canadian landscape. This model uses a lens of MLT education of which I am most familiar at CNA, and of course, is naturally biased towards the approach CNA uses. I offer this not as a perfect fit for all Canadian institutions, nor as a complete program; rather, as a starting point for discussion about what this could be, how it might fit into our existing programming and as a means to provide the highly qualified, underemployed baccalaureate graduates in Canada a career in a profession that is experiencing workforce shortages.

I argue, and would readily entertain debate, that with appropriate simulation training and guidance, Canadian institutions can produce highly qualified, career-ready MLT graduates in 16 months at a reduced training cost to the institutions when compared to our current two- to four-year programming.

# Accelerated MLT Program Proposal

## Target Audience

- Holders of undergraduate BSc. or equivalent Canadian baccalaureate degrees
- Current undergraduate science students who have completed significant portions of life science degrees (e.g., cytology, biology and biochemistry)
  - Note: High academic standing with courses including life sciences, mathematics, research and chemistry
  - Minimum suggested GPA requirements in line with comparable professions such as nursing

## Program Goals

- Increase program seats to address the national shortage of qualified MLTs to meet significant industry demand
- Increase market targeting of unemployed and underemployed life science graduates across Canada and create a more streamlined avenue for internationally educated MLTs
- Attract high achieving students to MLT programs, increasing the prestige and research capability by placing greater emphasis on recruitment and admission strategies that target relevant and existing educational backgrounds of potential students
- Maximize utilization of physical spaces within institutions and clinical opportunities in all Canadian provinces by reducing clinical practicum time
- Develop graduates who are eligible for both American and Canadian certification

## Projected program to include:

- 16–17 month accelerated applied degree or advanced diploma exit program, including four months of clinical training with rotation through each clinical area
- Utilization of pre-existing clinical sites and partnerships with the expansion of preceptor roles
- Complement existing two- to four-year programs and increase utilization of laboratory spaces

## Sample Training Delivery Schedule

Summer intake (post university convocation) with clinical practicum set for summer of the following year, graduation in fall and October national certification exam.

- May–December: Compressed MLT didactic training year (8 months)
- January–April: Clinical simulation and advanced study (3 weeks per discipline; 15 weeks in total)
- May–August: Clinical practicum (3 weeks per discipline; 15 weeks in total)
- September–October: Advanced study seminar and national examination preparation (2–4 weeks) ■

*The author would like to acknowledge the contribution of Laura Zychla of CSMLS for her help with the CSMLS-related data, as well as serving as a sounding board for some of my more mutinous thoughts.*

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## Digging up the Truth About Vampires

In 1896, George R. Stetson, writing in the academic journal *American Anthropologist*, catalogued numerous cultures that held a belief in vampires, as well as practices meant to put an end to vampires' predation upon the living.<sup>1</sup> Of particular interest to Stetson was the contemporary belief in vampirism in parts of rural New England at the end of the 19th century. In response to an outbreak of "consumption" – what we now call tuberculosis – some of the dead, he writes, were "exhumed: the heart burned, and the ashes scattered" in practices that were supposed to protect the living from succumbing to the disease.<sup>1</sup>

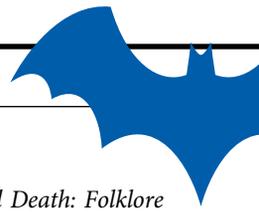
Vampires and infectious disease: to modern people the connection may not be obvious. When we think of vampires, we are more likely to think of Bram Stoker's *Dracula* than microorganisms. In books and films, Count Dracula is an easily recognized figure in the horror genre, but the fear of vampires existed long before Stoker's 1897 novel.<sup>2</sup> Spread across generations and across cultures, the belief that the dead can return to feed upon the living came from a lack of understanding about infectious diseases and the way in which the human body decomposes after death. These two factors led people to believe in vampires.<sup>3,4,5</sup>

For most of human history, people simply did not know how microorganisms cause disease. Without microscopes, and lacking methods to study bacteria, viruses and other pathogens, the mechanisms of deadly infections were completely invisible to people. They buried the first victims of malaria, tuberculosis or cholera epidemics, but not understanding that microscopic pathogens require an incubation period, or – in the case of malaria – were spread by vectors, they blamed vampires when these illnesses later sickened the deceased's family members and then other members of the community.<sup>3,5</sup>

Similarly, the decomposition of the human body wasn't well understood.<sup>2,3,5</sup> We know now that after death, bacteria in the body produce gas, causing the abdomen to swell and look bloated, sometimes forcing blood from the lungs to trickle out of the mouth.<sup>3,5</sup> Within three days after death, muscle fibers decay, and rigor mortis retreats, allowing limbs to become

flexible.<sup>6</sup> Given time, cuticles and gums retract, making it seem as if the nails and teeth of the dead have grown into claws and fangs.<sup>3,5</sup> The lips may pull back, giving the corpse a snarling appearance.<sup>6</sup> In a process called "skin slippage," sheets of skin peel away, exposing "new" skin underneath.<sup>5,6</sup> If stabbed with a wooden stake, the chest might expel methane gas, possibly letting out "a painful sound."<sup>2,6</sup> To people unaware of these normal changes, it might appear that the body of the dead was somehow able to move, groan in pain and become engaged from feasting on the blood of the living.<sup>3,5</sup>

Nevertheless, it has been proposed that the hemoglobin abnormality, erythropoietic porphyria, could be at the root of vampire mythology, but this suggestion reflects popular horror-fiction, not common folklore or historic accounts of vampire exhumations.<sup>5-7</sup> In Serbia in the 18th and 19th centuries, vampire exhumations were taking place on a weekly basis, despite the fact that erythropoietic porphyria is actually an extremely rare disorder.<sup>7</sup> Furthermore, for



people with erythropoietic porphyria, exposure to sunlight can cause scarring, disfigurement and even the loss of fingers. In stark contrast, an outstanding feature of accounts of disinterred “vampires” is that rather than being disfigured, they looked remarkably healthy.<sup>5-7</sup>

Several factors appear to have made it more likely that deceased individuals might be perceived as vampires. The dead who had been newcomers to the area, those with an unusual physical appearance, people born outside of marriage, the unbaptized, victims of violent death, those suspected of practicing witchcraft or the first fatalities in a communicable disease outbreak might be blamed for subsequent illness and death in their communities.<sup>5,8,9</sup> The fear that these people were returning and killing the living led to unusual burial practices, commonly called anti-vampire burials, but known to anthropologists as apotropaic burials (using burial practices believed to have the power to deter evil), or deviant burials (because they deviated from normal burial customs).<sup>8</sup>

These practices have been with us for a very long time. In a fifth century children’s cemetery in the Italian town of Lugnano, the remains of 47 bodies – ranging from fetuses to a young child of perhaps two or three years of age – buried in rapid succession, attest to an ancient fear of the dead.<sup>10</sup> Little respect seems to have been employed in the burial of the fetuses and neonates, while discarded clay roof tiles and amphorae served as makeshift caskets for some of the children. The hands and feet of another child were weighed down by stones and a heavy tile. These were victims of a malaria epidemic, specifically *Plasmodium falciparum*, a pathogen that the Romans didn’t understand. Not knowing that the disease is caused by a mosquito-borne parasite, they attributed malaria to “bad air.” The ritual sacrifice of puppies, among several other magical practices, was performed on the site, as the Romans feared that those who had died so young would fall prey to sorcerers who would use them to harm the living.

In other instances, suspected vampires were dug up and mutilated in ways that would make it impossible for the dead to return.<sup>3,5,6</sup> Writing in the 12th century, English historian William of Newburgh recorded the story of one dead man who was believed to leave his grave at night and spread disease and death. Two young brothers, wanting to put an end to the dead man’s nightly predations, dug up the body and stabbed it, unleashing “a stream of blood, that it might have been taken for a leech filled with the blood of many persons.”<sup>3</sup> Presumably, all of that blood only confirmed their belief that the dead man was feeding upon the living.

In the case of some controversial burials in Drawsko, in northwestern Poland, suspected vampires may have been early victims of one of the waves of cholera outbreaks that swept through the region in the 17th century.<sup>8</sup> In addition to coins placed in the mouths of the dead (a practice literally giving the dead something to chew on),<sup>5</sup> one body had been buried with a stone placed on its neck, perhaps with the belief that it would stop the dead from biting or to block the throat so that it couldn’t feed on the living.<sup>8</sup>

Perhaps more dramatically, other skeletal remains in the Drawsko excavations were found with sickles placed over the abdomen or the neck. It was believed, researchers suggest, that in these instances, the reanimated corpse would tear open its abdomen or be decapitated and rendered unable to harm the living.<sup>8,9</sup>

This interpretation of the Drawsko grave findings has been disputed, because the graves show no evidence of having been reopened for anti-vampiric procedures, which, according to Marek Polcyn and Elżbieta Gajda, would be typical in such instances.<sup>11</sup> (In his influential

work, *Vampires, Burial and Death: Folklore and Reality*, however, folklorist Paul Barber reports that the measures used against active vampires were also used preventatively).<sup>5</sup> According to Polcyn and Gajda, the sickles still may have had some anti-demonic significance.<sup>11</sup>

Commenting on Polish anti-vampire practices in general, anthropologist Polcyn acknowledges, “We have evidence of people going to the cemetery during plague time and driving stakes through [the first victims of a plague] and dismembering the bodies, burning them, because they believed that this person is responsible for the disease.”<sup>9</sup>

In the 18th century, on the frontiers of the Austrian empire, Imperial Army medical staff investigated outbreaks of vampirism. These incidents were reported in the popular press throughout Europe.<sup>12</sup>

Closer to us in geography and time, New England’s late 19th century anti-vampire exhumations continue to be of interest today. The bodies of these suspected vampires – in this case, victims of tuberculosis outbreaks – were sometimes turned facedown in the coffins, or as Stetson had reported, the heart was cut out and burned.<sup>1,13</sup> One well-documented case involves Mercy Brown of Exeter, Rhode Island, who died of tuberculosis in 1892. When her brother Edwin subsequently fell ill, her body was exhumed and her heart was burned.<sup>6</sup> The ashes were consumed by Edwin, but – as we would guess – it failed to save him.<sup>4</sup> Although German physician Robert Koch had already discovered the bacillus responsible for the disease in 1882,<sup>14</sup> the case of Mercy Brown



Opposite page (photo): Vampire skeleton of Sozopol in Sofia PD 2012 06. Bin im Garten [CC BY-SA 3.0 [https://creativecommons.org/licenses/by-sa/3.0]] No changes made. [https://commons.wikimedia.org/wiki/File:Vampire\\_skeleton\\_of\\_Sozopol\\_in\\_Sofia\\_PD\\_2012\\_06.JPG](https://commons.wikimedia.org/wiki/File:Vampire_skeleton_of_Sozopol_in_Sofia_PD_2012_06.JPG)

This page (photo): Individual 49/2012 (30–39 year old female) with a sickle placed across the neck. <https://doi.org/10.1371/journal.pone.0113564.g001>

Citation: Gregoricka LA, Betsinger TK, Scott AB, Polcyn M (2014) Apotropaic Practices and the Undead: A Biogeochemical Assessment of Deviant Burials in Post-Medieval Poland. *PLoS ONE* 9(11): e113564. <https://doi.org/10.1371/journal.pone.0113564>

demonstrates that some residents of the eastern United States continued to respond to tuberculosis deaths with anti-vampire exhumations into the 1890s. Nevertheless, even if the people of Exeter had known of Koch's discovery, it may not have helped Mercy or Edwin Brown, as streptomycin, the first effective antibiotic treatment for tuberculosis, was not developed until the 1940s.<sup>13,15</sup>

Today, we no longer hear of anti-vampire practices, but vampires still intrigue us. The discovery in 2012 of a 700-year-old anti-vampire burial in the Bulgarian town of Sozopol, for example, was reported in *National Geographic*, the London-based newspaper *The Telegraph*, *BBC News* and *Time*.<sup>16-19</sup> The skeleton, possibly the remains of a pirate called Krivich, had been repeatedly stabbed with a metal implement. In fact, Bulgarian anti-vampire burials were still taking place in the 20th century. The country currently has about 100 known anti-vampire burials, making the economically depressed nation a destination for vampire tourism.<sup>18,19</sup> Once feared, the vampire has become an object of fascination, as well as a commodity.

As science writer Matt Kaplan explains, "Vampires... might now be entering their twilight years as the result of increasing scientific awareness. People knew next to nothing about communicable diseases when vampires first emerged as monsters, but this is no longer the case."<sup>3</sup>

An arsenal of crosses, necklaces of garlic, wooden stakes and other anti-vampire paraphernalia has been replaced by public health measures, modern diagnostic procedures and antibiotics. Vampires are still present in popular culture, but we no longer believe that they can rise from their graves to spread death among the living. ■



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# Improve Your Job Search and Find Opportunities



**A**re you wondering where to take your career? Maybe you are looking to work in a new organization or hospital. Before making the change, do your field research. One of the most effective ways of gaining intel on your next big career move is conducting **informational interviews**. It is a way to get a face-to-face meeting with an expert in the field and gather specific information that will help in your job search. Needless to say, some research has to be done before approaching a professional. So, let's start by listing three benefits of doing field research:

- Gaining information about an organization that might not be readily available on its public website
- Using lessons learned from an individual's career path to inform your own job search
- Expanding your network by connecting with potential future mentors

Now that you are aware of the benefits, you might be asking "How do I do it, then?" Let's get down to it:

## 1. Preliminary Research

Come up with a short list of organizations and professionals. Nowadays, there are many online resources available to assist with this search, which is essential to help one prepare for informational interviews. Know that it is okay to visit people's online profiles to learn about their career journey.

Finding alumni on LinkedIn is just one of the ways to identify potential interviewees. An easier way might be to ask family and friends, a hair stylist or a dentist if they know someone in the field.

## 2. Preparation

Prepare your pitch so you can introduce yourself clearly when approaching the professional, either via email or phone, to request an informational interview. Be concise on your introduction, and clear on what is being asked: 15-20 minutes for an informational interview, not a job interview or help with finding a job.

Prepare open-ended questions that will elicit information from the interviewee, but be careful not to betray their trust and ask for help. Although it is rather difficult, you must manage the anxiety and eagerness. Remember that they are the experts in the field sharing their knowledge and experience with you. Make the interview about them!

While scheduling the meeting, show flexibility as to the location and time for the interview.

Provide alternatives and avoid lengthy email exchanges.

## 3. Conducting the Interview

Approach the informational interview as if you were going to a job interview, even though you should not be asking for help to get a job. Take notes and show that you are valuing the time they are volunteering to answer your questions. It is okay to bring an updated résumé, even if you just get feedback on it, but keep in mind that you need to respect the professional's time. Lastly, you can ask for suggestions based on the chat you just had, including who else they would recommend that you contact to conduct a similar interview.

## 4. Nurture the Relationship

Aside from sending a thank you note within 24 hours of the informational interview, you may want to ask the professional what is the best way to stay in touch with them, how often can you contact them and what is the preferred method.

Good luck in your field research! 🍀



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\* course being updated in 2019

## Differential Diagnosis of a Persistent Mild Increase of Human Chorionic Gonadotropin (hCG)

**H**uman chorionic gonadotropin (hCG) is mainly secreted by syncytiotrophoblast of placenta. hCG interact with luteinizing hormone/choriogonadotropin receptor (LHCGR) of ovary to promote the maintenance of corpus luteum. This allows the corpus luteum to secrete progesterone to sustain the growing of fetus. Normally, hCG doubles every 48 hours – excludes multiples, gestational trophoblastic diseases, ectopic pregnancies and spontaneous abortions. hCG has a half-life 12 – 36 hrs, therefore, it can take up to 40 days to normalize hCG levels after a pregnancy loss. During pregnancy, hCG starts to increase in the 2-3 weeks of gestation, peaks to ~100,000 IU/L (higher in twin pregnancy) at 8-11 weeks, decreases until ~24 weeks then plateaus. Numerous molecular forms of hCG present in pregnancy serum such as intact hCG, nicked hCG, free  $\beta$  subunit, nick free  $\beta$  subunit, and the urine exclusive  $\beta$  core fragment. Depend on the immunoassay design, if the test detects both intact hCG and free  $\beta$  subunit, it can be used for pregnancy and oncology testing; if the test detects intact hCG only, it is just good for pregnancy diagnosis and monitoring purpose.

It is not uncommon for a laboratory to face with a persistent presence of low level serum hCG. A few possible differential diagnoses should be considered (Table 1).

### New pregnancy

Serum hCG is the most sensitive test for pregnancy. Patient's medical history is the good start information for differential diagnosis for a new viable pregnancy, ectopic pregnancy, or heterotopic pregnancy. Variable serum hCG level and doubling rate provide very important information. Ectopic pregnancy may represent 15% of emergency medicine patients and 10% of all maternal mortality. Its clinical symptoms include vaginal bleeding, abdominal pain, with or without adnexal mass, usually happens at 5-10 weeks of gestation. Serum hCG level 1500 – 2000 IU/L can be a discriminatory zone for ectopic pregnancy and level less than 53% increase in 48 hours may indicate a nonviable pregnancy. Progesterone < 16, 16-64, and  $\geq$  64 nmol/L may suggest abnormal, equivocal, and normal intrauterine pregnancy respectively. Other work up may include ultrasonography and even laparoscopy.

### Retained products

Retained products could cause mild persistent hCG but the levels should not see a “fall and rise” pattern. Usual work up include ultrasound, endometrial biopsy, dilation and curettage, and hysteroscopy, etc.

### Phantom hCG

The false-positive serum hCG, so called phantom hCG, due to heterophilic antibody interference on the hCG immunoassay is another possible cause of low level increase in serum hCG. The presence of heterophilic antibodies or other interfering substances may be indicated if:

- (1) The urine pregnancy test is negative and the serum hCG value is at least 50 IU/L;
- (2) Lack of linearity / recovery in the serum serial dilution study;

Normally, hCG doubles every 48 hours and has a half-life of 12-36 hours. Therefore it can take up to 40 days to normalize hCG levels after a pregnancy loss.

- (3) Serum hCG test becomes negative after treating serum to remove heterophilic antibodies (e.g. with heterophilic blocking tube, Scantibodies, Santee, CA);
- (4) A different commercial hCG immunoassay generate a substantially discrepant result.

### Pituitary or menopausal hCG

Pituitary hCG is produced in the anterior pituitary gland along with LH and FSH when gonadotropin releasing hormone production becomes unrestricted due to the absence of sex steroid feedback to the hypothalamus. Pituitary hCG usually increases mildly ( $\leq 39$  IU/L) along with rising FSH ( $>30$  IU/L) during peri- and postmenopausal period, or premature ovarian failure such as chemotherapy.

### Gestational Trophoblastic Diseases (GTD)

GTD is a general term for a group of rare tumors which involves abnormal growth of trophoblasts in the uterus with substantially elevated hCG level. Average serum hCG levels are 49,000 IU/L and up to 100,000 IU/L in partial and completed moles respectively. Serum hCG level can be even higher (e.g. over 600,000 IU/L) in choriocarcinoma.

When GTD is present, the secretion of  $\beta$  subunits of hCG increases. The USA hCG Reference Service recommends free  $\beta$  hCG  $>40\%$  of total hCG suggestive invasive gestational trophoblastic diseases. Moreover, invasive cytotrophoblast cells secrete hyperglycosylated hCG (hCG-H), a discovery of Dr. Laurence Cole. hCG-H has an identical  $\alpha$  and  $\beta$ - subunit amino acid sequence to the hormone hCG, but at least 3 of 4 very different O-linked carbohydrate side chains at  $\beta 121$ ,  $\beta 127$ ,  $\beta 132$ , and  $\beta 138$ . This difference causes hCG-H folds very differently to hCG, so that hCG is a hormone whereas hCG-H an autocrine or cytokine binding a transforming growth factor  $\beta$ -II receptor. Serum hCG-H (a send out test)  $>30\%$  of total hCG is suggested to distinguish invasive GTD.

In the 10-year report of the USA hCG Reference Service, 168 of the total of 596 consulting cases demonstrated 0 IU/L of

serum hCG-H. These cases showed 3-month to 2-year plateau of stable hCG ranging from 1.6 to 212 IU/L. Dilation, curettage, and histology on some of these cases only found highly differentiated syncytiotrophoblast tissue. This group of benign disorders is collectively named quiescent gestational trophoblastic disease in 2001 – 2003. The hallmarks of this unique disease are: previous history of GTD, low persistent elevation of hCG  $< 212$  IU/L, and undetectable hCG-H. This is essentially a benign disorder (85% cases resolve over 3-6 months). The mass is usually too small for diagnostic imaging studies, and usually does not grow or invade and does not respond to chemotherapy. The Obstetricians and Gynaecologists of Canada recommends follow hCG till normal for 6 months with no new conceptions after evacuation of a molar pregnancy. There is no significant difference in outcomes between individuals in the surveillance and chemotherapy groups.

Possible causes	Investigations/results
Pregnancy, ectopic pregnancy, heterotopic pregnancy	History Variable serum hCG level and doubling rate Ultrasound Laparoscopy
Retained products	Ultrasound, hysteroscopy, endometrial biopsy, curettage
Phantom hCG	Interference confirmed if: (1) Urine pregnancy test is negative and serum hCG $\geq 50$ IU/L (2) Lack of linearity / recovery in the serum serial dilution study (3) Serum hCG is negative after heterophilic blocking tube treatment (4) A different commercial hCG immunoassay generates a substantially discrepant result
Pituitary hCG	Serum hCG $\leq 39$ IU/L FSH $> 30$ IU/L Peri- and postmenopausal period
Gestational trophoblastic disease	
Quiescent gestational trophoblastic disease	History of previous gestational trophoblastic disease Serum hCG $< 212$ IU/L Undetectable hyperglycosylated hCG
Other gestational trophoblastic diseases	Significantly elevated serum hCG level Elevated hyperglycosylated hCG ( $>30\%$ of total hCG suggests invasive gestational trophoblastic disease) Elevated free $\beta$ hCG ( $>40\%$ of total hCG suggests invasive gestational trophoblastic disease)
Non-trophoblastic cancer	Variable elevated serum hCG level Elevated free $\beta$ hCG ( $>40\%$ of total hCG) Elevated urine $\beta$ -core fragment Diagnostic imaging

Table 1. Differential diagnosis for a persistent low-level increase of serum hCG (Reprinted with permission from Chen et al. Persistent mild increase of human chorionic gonadotropin levels in a 31-year-old woman after spontaneous abortion. Box 1. Canadian Medical Association Journal 2016;188(17-18):E504-E508. © Canadian Medical Association [2016].

**Non-trophoblastic cancer**

Persistent low levels of hCG may also be caused by non-trophoblastic cancers that originate from the ovary, bladder, colon, brain, liver, breast, pancreas, kidney, lung, and prostate. In these cancers, serum hCG levels varies and free β hCG is usually higher than 40% of total hCG. Urine β-core fragment (usually a send out a test) level is also elevated. Other workup includes MRI of the head and abdomen, and CT of the chest, abdomen, and pelvis etc. ■

*(Based on LabCon 2019 presentation on Persistent mild increase of human chorionic gonadotropin (hCG) – Am I pregnant?)*

*Reprinted from (Chen J, Samson SL, Bentley J, Chen Y) (Persistent mild increase of human chorionic gonadotropin levels in a 31-year-old woman after spontaneous abortion – Box 1) Canadian Medical Association Journal (Dec 6;188(17-18):E504-E508.). © Canadian Medical Association (2016). This work is protected by copyright and the making of this copy was with the permission of the Canadian Medical Association Journal (www.cmaj.ca) and Access Copyright. Any alteration of its content or further copying in any form whatsoever is strictly prohibited unless otherwise permitted by law.*

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Answer a short quiz on this article at [learn.csmls.org](http://learn.csmls.org). You'll earn Professional Enhancement Program (PEP) hours toward your professional development plan.

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# FROM VITAL SIGNS TO BLOOD PRESSURE READINGS:

## The Risks of Working Out of Scope



Angie Gatt is a medical laboratory assistant (MLA) in Toronto who works as an independent contractor for various companies, and she also has attended nursing school. She is often asked to take vital signs, and because of her nursing background, she is more than comfortable doing it. >>

Despite her ability to perform the task, there is a problem. Taking vital signs isn't within the scope of practice for a medical laboratory assistant.

Scope of practice generally refers to the job skills that a professional is trained in and certified to perform. Depending on individual education levels, experience and

on-the-job instruction, some professionals may have a broader range of skills and knowledge than others. In a regulated profession like medical laboratory technology, however, your scope of practice will be restricted to those tasks included under the regulations.

Reflecting on it, Gatt wishes that part of her formal education as an MLA had focused on defining her scope of practice once she got into the work force. "I wasn't taught in school, 'you can't do this or that.' That would have been great to learn." While medical laboratory assistants are not currently regulated in Canada, they are still restricted to the type of work being performed under their education and certification.

One of the attractive features of the medical laboratory profession can be the variety of work. With different techniques, technology and equipment always being developed, adding to the skillset is an element of the job. But if you're asked to perform a task that you aren't properly trained to do or certified to perform, there may be risks, especially to the patient.

"There's a patient at the end of what we do, all the time," says Valentin Villatoro, Council President for the College of Medical Laboratory Technologists of Alberta (CMLTA). "We should keep that at the forefront and ask ourselves, 'Would I be comfortable performing this task if it was a loved one?'"

The mission of the CMLTA, similar to other regulating colleges, is to "protect the public by regulating Medical Laboratory Technologists and fostering excellence in professional practice." As a regulator of the profession, its purpose is to ensure professionals are only practicing within the skills they have obtained through certification.

"Regulatory bodies set entrance-to-practice requirements, and hold professionals to standards of practice that ensure not just anyone can call themselves an MLT. Defining the scope of practice also ensures that not just anyone can perform what we do," says Villatoro. "It helps to define our role within the healthcare system and guides our practice. As every medical laboratory professional knows, our practice is always changing and evolving. We must recognize this change and ensure we are equipped with the right training and education to practice safely and competently."

Medical lab professionals may sometimes find themselves faced with work that isn't part of their original scope of practice. Perhaps they're being pressured by their employer to wear multiple hats and take on additional tasks. With the changing workforce and increasing shortages of qualified professionals, this is becoming a common issue.

When you carry out a task that you aren't properly trained to do, or certified to perform, you're putting the patient at risk, first and foremost. Taking a blood pressure reading, for example, may seem like a simple procedure, but you shouldn't be fooled into thinking you're competent just because a co-worker once showed you how to use a portable device. In an American Medical Association challenge in which 159 medical students were asked to measure blood pressure, only one of them followed all the steps correctly – although they'd all been instructed how to do it.<sup>1</sup> The researchers highlighted the importance of adequate training. Hypertension Canada warns that when blood pressure readings aren't

"There's a patient at the end of what we do, all the time. We should keep that at the forefront and ask ourselves, 'Would I be comfortable performing this task if it was a loved one?'"

– Valentin Villatoro, Council President,  
College of Medical Laboratory Technologists  
of Alberta (CMLTA)

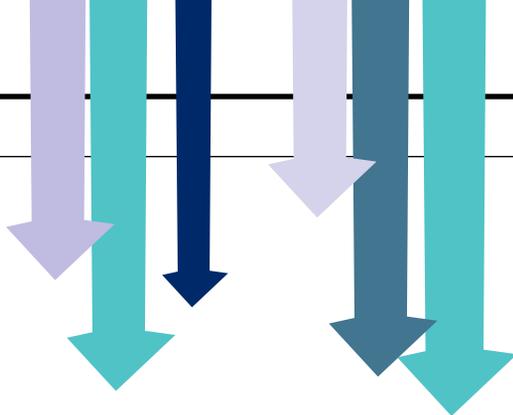
taken properly, dangerously high blood pressure can be missed, and false positives can be produced as well.<sup>2</sup>

Regulation helps to avoid such scenarios. "The primary mandate of regulators is the protection of the public. It is one of the measures that assures the public that MLTs provide safe, competent and ethical healthcare services," says Villatoro. "Through legislation, regulators are able to define the scope of practice of MLTs and ensure that they are practicing within the limits of their expertise. This helps protect the public from incompetent practitioners and substandard care."

He also reiterates that regulatory bodies provide a mechanism by which anyone, including members of the public, can submit a complaint regarding unprofessional conduct of an MLT.

If you work outside your scope of practice, you run the risk of legal claims against you for mistakes, misconduct or negligence. You may feel confident you're protected because you have professional liability insurance (PLI). Also known as errors and omissions insurance, this is actually a regulation requirement for MLTs in many provinces. But PLI won't apply if you weren't qualified to perform the task that led to the fault, or if you violated your regulation in the performance of your job duties.

What if you believe you're capable of a certain task, such as preparing slides of tissue samples, because you've received extensive on-the-job training – yet it's not part of your original scope of practice? You can apply for a competency assessment through CSMLS, which includes a review of your relevant education and experience, and then have your insurance extended. (Keep in mind, though, this option is limited to the competency profiles already provided by CSMLS.)



Looking for more information on best practices to keep you and your patients safe?

Visit [go.csmls.org/Fall2019](http://go.csmls.org/Fall2019) to access articles, resources and podcasts to get started.

Another scenario in which medical laboratory professionals might find themselves in hot water is if they think they are covered by insurance, when in actuality they are not.

Members who obtain insurance from provincial bodies may feel it's adequate and will opt out of the national group plan. But they could learn the hard way that legal defense isn't covered by their provincial policy, or that the total coverage is too low.

"It's part of your professional responsibility to make sure you have coverage for your actions," says Christine Nielsen, CSMLS's CEO. "Some CSMLS members think they 'don't need it,' and that's true, you don't need it – until you do!"

Not only is PLI restricted to your scope of practice, there are other situations in which you may not be safeguarded. What if you've been unemployed, so you've let your coverage lapse, but now you've landed your dream job, and it starts Monday?

"We encourage every member to review every policy thoroughly," says Nielsen.

Large employers, such as hospitals, routinely offer insurance to their workers. But, again, the limits might not be high enough, or legal fees may not be included. Plus, if you change employers or retire, you could suddenly lose protection.

And what if your employer is the one holding you responsible for an error, or there's a third-party complaint in which both you and your employer are named? "It's important to consider that the insurance policy the employer has will likely focus on their interests," says Villatoro. "Not to say that they will leave you high and dry, but it's probably best to at least consider looking at what the policy says, what the limits are, and whether or not they're appropriate for you."

Even if you're carrying out tasks that normally are within your scope of practice, you must be aware of any personal limitations, which can vary from day to day.

"Part of competency means that the day you show up for work, you're capable of doing the tasks," says Nielsen.

What if you're intoxicated at the start of your shift? What if you couldn't sleep the night before, and today you're having difficulty concentrating or remembering certain steps? You should say, "I can't do this today." After all, competency does apply to your capability to perform a task the day that you are actually performing the task. It doesn't matter if you've performed that task 100 times and performed it well; if you are in any way compromised, you do not have the competency to perform the task.

Even if you put sufficient coverage into place and try to stay conscientious about practising within your scope, you may encounter pressure to perform duties that are outside your area of expertise. Gatt has been asked to complete medical questionnaires with patients, but she opts out of those. "I just don't feel comfortable doing them," she says. "You can get very detailed answers, and some of those diagnoses, I can't pronounce them, let alone spell them." She worries about making a mistake. "Considering it's not covered by my insurance, it's not worth it."

But it can be tough to say no if you think it might cost you your job. At a recent interview, Gatt was asked if she'd be willing to catheterize patients without supervision. "I said no, I don't feel comfortable and I'm not trained," she says, adding: "I didn't get a callback."

To avoid unnecessary liabilities, the Society recommends not allowing yourself "to be pressured into doing anything you are not trained to do, certified for, or that would violate the standards of practice for medical laboratory technologists,"<sup>3</sup> but it can be tough to follow this advice. If you live in a remote or rural area, there might be only one hospital for you to work in. If that's the case, switching jobs would be far from easy.

But raising this issue with your employer doesn't have to result in the end of your

working relationship, especially if you frame it as a request for additional training, or more experience with a qualified supervisor on hand. "If you don't just highlight that you feel unprepared, but you also work collaboratively with the employer on what it would take to get there, it shows you are willing to rectify the situation," says Villatoro.

You still won't be covered by PLI, however. Gatt is hoping that when the time comes to renew her current contract, her employer will be willing to add a clause about taking responsibility for those tasks she performs that are outside her scope. In the meantime, she'll continue to pay for insurance through CSMLS. "The benefits so outweigh the fees," she says. ■

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LISA BENDALL  
Special to *CJMLS*

# Community



CSMLS CEO Christine Nielsen and Judy Tran

## David Ball Award

**O**n March 14, CSMLS CEO Christine Nielsen presented Judy Tran with the prestigious David Ball Award at University Health Network in Toronto. Judy's nominators indicated that she has amassed an impressive list of volunteer activities. In fact, the list was so long our reviewers wondered when Judy ever found time to sleep.

Although Judy is the youngest recipient of this award to date, she has demonstrated a long-term commitment to her social and professional communities. Judy began volunteering in secondary school and never stopped. Her volunteer activities highlight Judy's commitment to learning, to building capacity and to empowering others, particularly young women. Her goal was to make her community stronger.

Judy has been actively involved in engaging and mentoring young women in science as well as first-year international students at the University of Toronto, fundraising to provide opportunities for vulnerable people, coordinating educational

and summit-style events, participating in community-building projects, serving on committees and Boards, as well as volunteering for the CSMLS.

Impressively, Judy has accomplished all of this while excelling in academics at the University of Toronto and then at the Michener Institute of Education at UHN, working full-time and pursuing a Master of Business Administration and a Leadership in Health Care Graduate Certificate from Michener. She is incredibly accomplished, and has an approachable demeanor and compassion for everyone.

Judy has transitioned from an active, academically driven and engaged student into a passionate, committed and compassionate medical laboratory professional who continues to pursue academic excellence. Because of her outstanding community service, Judy is a more than deserving recipient of this prestigious award.

Congratulations, Judy! 🎉



LAB VOICE:

# VOLUNTEERING AT THE MPP LUNCHEON

Dry ice in coloured water

**C**SMLS hosted a luncheon at Queen's Park in May to educate Ontario policymakers about the importance of the medical laboratory profession. We invited local members to come out and support our efforts; Maria Roussakis eagerly raised her hand and jumped at the opportunity to help the Society. We caught up with Maria to ask her to share some highlights of her volunteer experience at the luncheon.

## **What interested you in volunteering with the CSMLS for the MPP Luncheon?**

What interested me the most when I saw the opportunity to volunteer at the MPP Luncheon at Queen's Park was the advocacy aspect. I am always interested in discussing the role and importance of medical laboratory professionals (both medical laboratory technologists and assistants), and do so on a regular basis. In particular, I personally see the impact on hospital laboratories with the shortage of medical laboratory technologists, and wanted to help bring light to this health human resource shortage.

## **What was it like speaking with members of provincial Parliament?**

I thoroughly enjoyed speaking to members of Parliament, and it was interesting to see what issues stuck to each individual member. When speaking to one person, they were very empathetic to the issue of shortages of medical laboratory technologists as they were from an area that already faces shortages with other health care professionals as well. Another Member of Parliament wanted to know if there was anyone at the event that worked at Dynacare, because they have a family member that works there. This just highlights the importance of including medical laboratory professionals from various workplaces (hospital, private laboratories, public health, etc.) at these events.

## **What did you enjoy most about volunteering on this provincial advocacy campaign?**

Every time I volunteer with CSMLS, I always enjoy meeting new medical laboratory professionals, as well as seeing some familiar faces. By going to these volunteering events, I am constantly reminded of how small and connected the medical laboratory community is in Canada. No matter what discipline we work in, what stage of our career we're in or what level of work we do, we all have a common goal to improve the medical laboratory profession in Canada. Another thing that I was reminded of while volunteering for this campaign was that dry ice in coloured water can easily amuse anyone! 📷



Group picture at the MPP Luncheon at Queen's Park

## **Lab Voice**

Have you volunteered your time to teach children, students or adults about the role the medical laboratory profession plays in Canadian health care? Submit your story by email to [editor@csmls.org](mailto:editor@csmls.org) or by social media using [@csmls](https://www.instagram.com/csmls) #LabVoice.

If selected, your story will be published in the journal.

P.S: We love pictures!

2019 A. R. SHEARER

# Pride of the Profession Award



Vice President Nancy Bergeron with Kim Stephenson

On June 25, CSMLS Vice President Nancy Bergeron presented Kim Stephenson with the A.R. Shearer Pride of the Profession Award, which recognizes medical laboratory professionals who demonstrate professional pride through their leadership and commitment to excellence in the practice of medical laboratory science.

Kim, a quality assurance/laboratory information system charge technologist at Quinte Health Care in Belleville, Ontario, was nominated for this award by her colleagues Amanda Godbout and Barb Terry for demonstrating her professional pride for many years.

Encouraging staff to strive for their absolute best is only one of the key points that her nominators raised. Kim also suggests events and other learning materials to staff, advocates for the lab to be a part of the hospital's nursing orientation program and provides nurses with quick tips of things the lab requires or has recently changed. To ensure proper training of nurses in phlebotomy, Kim set up a requirement for all newly hired nurses to undergo training with the hospital's medical laboratory technologists.

To improve lab processes for medical laboratory professionals as well as the hospital as a whole, Kim partnered with the corporate transformation office. By attending intradepartmental huddles within the hospital, she shows a genuine interest in keeping an eye on arising issues, which Kim also relays to her laboratory staff.

When it comes to professional education, Kim does more than the aforementioned sharing of events and materials. She pushes for more education days and time off for newer medical laboratory technologists who are interested in transitioning into senior or charge management positions.

Another key point for Kim's nomination is how she makes other employees feel safe. People feel comfortable discussing any issues they might have. Comradery and morale building were demonstrated through planning Lab Week celebrations as well as wedding and baby showers. Staff are encouraged to participate in social gatherings outside of work.

All of Kim's efforts demonstrate a commitment to helping colleagues develop professionally, while promoting positive morale. She goes above and beyond what is normally expected professionally and personally, making her an ideal recipient of this prestigious award.

Congratulations, Kim! 🎉

# Q+A

MEMBER SPOTLIGHT:

## Roy Chen

Roy Chen is a medical laboratory technologist in British Columbia with a unique volunteer experience. With financial help from the World Medical Laboratory Development Fund (WMLDF), he travelled to Kenya to provide his medical laboratory expertise. We caught up with Roy to learn more.

### What influenced your decision to volunteer in Kenya as a medical laboratory professional?

Being an enthusiastic medical laboratory professional, I wanted to do something different but meaningful that is outside of my comfort zone. Hence, I looked into the possibility of volunteering in a developing country. I was curious and wanted to experience how local staff handles day-to-day operations of the lab when resources are limited, especially in a rural setting. After looking into each location's needs, Kenya stood out as a place where I could volunteer and they could benefit from my expertise.

### How did the WMLDF help you achieve your volunteering goals?

Given that I planned to spend three weeks abroad in a continent on the other side of the world, I knew that funding this trip would not be an easy task. Fortunately, through the assistance of the WMLDF, this trip suddenly became more tangible. I am extremely grateful to be sponsored by the CSMLS for my journey to Kenya. As a way of promoting the Society, I gave the staff members that I met a package full of CSMLS brochures that details who we are and our missions in this profession. Pocket protectors and bookmarks were also given to them (graciously supplied by CSMLS as well). I was delighted to see the staff equipping their lab coats with the new accessories! Check out the photos.



From Left to right: Solomon, Tonny and Roy

My certification through CSMLS is recognized, and I was given permission to do a lot more. After a day's training, I was performing everyday tasks alongside the local staff.

”



From left to right: Roy, Lincoln, and Prisca

#### **Describe your volunteer activities in Kenya.**

I volunteered in the Tigoni District Hospital in the town of Limuru in Kenya, located an hour drive away from the capital city of Nairobi. At first, I thought perhaps I would only get to shadow and perform general duties here and there, given that I am considered foreign-trained. However, it turned out that my certification through CSMLS is recognized, and I was given permission to do a lot more. After a day's training, I was performing everyday tasks alongside the local staff.

Being a district-level hospital, the lab is equipped with more instruments than a local hospital and offers a variety of testing. Overall, the Tigoni lab performs hematology, chemistry, microbiology, serology and transfusion medicine. I had opportunities to perform the following: complete blood count with differential, blood typing via manual agglutination method and setting up erythrocyte sedimentation rate using the Westergren method. This was a unique experience because I processed patient samples with conditions that are more prevalent in rural and developing countries. These included seeing parasites and ova from urine microscopy and stool slide-prep, which I had only ever read about in textbooks.

#### **How have you applied what you learned from your international volunteer experience to work in Canada?**

This experience has taught me a lot. I have learned to genuinely appreciate all the resources that we have access to here in Canada, such as having an ergonomic working environment. I am fortunate to perform the variety of tests we offer in Canada to better diagnose patients with efficiency. Lastly, I learned to appreciate the existence of CSMLS as a national body for Society members in educating, guiding and transforming patient care in Canada. ■

# Ethics on Demand

# CONTAMINATED

## NEEDLE

**E**thics on Demand is a series of articles that provides recent and relevant examples of ethical dilemmas that health care professionals can encounter.

One such scenario was initially reported by Grant LaFleche in the article “Contaminated needle used to draw blood from child at St. Catharines hospital,” published in the St. Catharines Standard. LaFleche reported that a personal support worker, who was assisting a nurse with a blood draw on a two-year-old boy in a hospital emergency room, pricked her finger with the needle. Hospital policy was not followed, as the personal support worker handed the needle to the nurse, who then drew blood from the child. Neither the child’s mother nor nurse were aware of what happened. After the blood was drawn, the support worker filed an incident report. It took 48 hours for the report to be processed and for the family to be notified.

We encourage you to start a conversation about this scenario with your lab colleagues. First, you could talk about what went wrong. This could involve discussing accountability, professional responsibility and disregard of safe practices. Can you think of a time in your own lab when you saw someone doing something that was against protocol? Maybe you unintentionally broke a policy yourself and didn’t realize it until later on.

After you discuss these key areas within the article itself, talk about how your own lab stacks up. Is everyone in your lab aware of and comfortable with the policies in place? If not, maybe a refresher is warranted. In The Objective Lens podcast episode, “Working Alone,” CSMLS Health and Safety Consultant Eoin O’Grady mentions that practical, hands-on case studies of real accidents are a great tool to help prepare individuals to correctly respond to less-than-favourable scenarios.

Another great tool is the CSMLS Code of Ethics. It serves to define and expand the inherent ethical concepts contained in the CSMLS Code of Professional Conduct, to document expectations of ethical behaviour for all medical laboratory professionals and to provide a framework during professional and personal self-evaluation. Review these codes with your colleagues and discuss how adhering to them could have prevented the contaminated needle scenario.

By discussing these items with your colleagues, you’re taking the right step to ensuring your lab can either avoid incidents or at least be prepared to handle incidents correctly when they arise. ■



Download the series of articles at [ethics.csmls.org](https://ethics.csmls.org).

After reading them, share your thoughts online using @csmls #EthicsOnDemand.



LAURA ZYCHLA  
Researcher,  
CSMLS



LISA MANTIFEL  
BSc, MLT

# Society News

## **YOUR MENTAL HEALTH MATTERS**



CSMLS wants everyone to recognize that their mental health matters. Whether you are an individual, student, employee, manager or organization, please know that you are not alone.

That is why we have compiled the Mental Health Toolkit ([mentalhealth.csmls.org](http://mentalhealth.csmls.org)). It is your place to develop healthy responses to everyday stressors, whether at work or at home. This toolkit is a resource that offers tools to identify, monitor and implement change to improve mental health in the medical laboratory profession.

This year, we are adding new resources on mental health in the Indigenous community as well as for students and educators. We hope you will find these tools useful.

On October 10, the World Health Organization (WHO) observed World Mental Health Day. This year, the WHO's mental health awareness campaign focused on suicide prevention. We encourage everyone to visit the official WHO website ([who.int](http://who.int)) to learn more about this day. We regularly share mental health resources on our social channels and eNEWS – so keep an eye out!

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## **BYLAW AMENDMENT: REMOVAL OF OUR PUBLIC ROSTER**

With the implementation of regulation across Canada, many provinces have secured right to title (medical laboratory technologist, MLT, or registered technologist, RT, etc.) and/or right to scope. As part of their role in protection of the public, regulators maintain a registry of members, including status, available online. To avoid confusion about certification and membership status (the CSMLS Roster) vs. regulatory body status, CSMLS has eliminated publication of the roster.

During the Annual General Meeting, eligible CSMLS membership voted in favour of the bylaw amendment. We will continue to keep lists of our members and certification records for business purposes using our membership database. The information will simply not be publicly accessible.

In addition, designations like MLT will be removed from member cards to clarify that membership status does not equate licensure. If you have any questions, please contact our office directly at [info@csmls.org](mailto:info@csmls.org).

If you would like to review the minutes of the AGM, they are available on the website under the Membership tab > Members Only.

# HOT SPOT REVIEW – TASK SHIFTING

Have you ever thought our profession should be bolder in raising awareness of our contributions to the health system? We should voice our informed opinions loudly and clearly, letting other health care professions and the public know we support the patient journey every day.

In an effort to understand members' opinions and help inform the creation of trend-related knowledge products, research and services to meet your needs, CSMLS created the Hot Spot Review survey.

**What is the latest topic?** Task shifting: Creating homeostasis through workload osmosis between professional groups. As MLTs retire, workload demands increase and testing complexity confounds the issue, our professionals need to adjust to the environment to keep the lab running. We hear, for example, about MLAs taking on more MLT duties, other professions conducting point-of-care testing more often and cytotechnologists taking on non-traditional tasks. CSMLS

## Check out these Hot Spot Review articles!

Gender  
Cannabis  
Clinical Conversations  
Descriptive Language  
Mega Labs

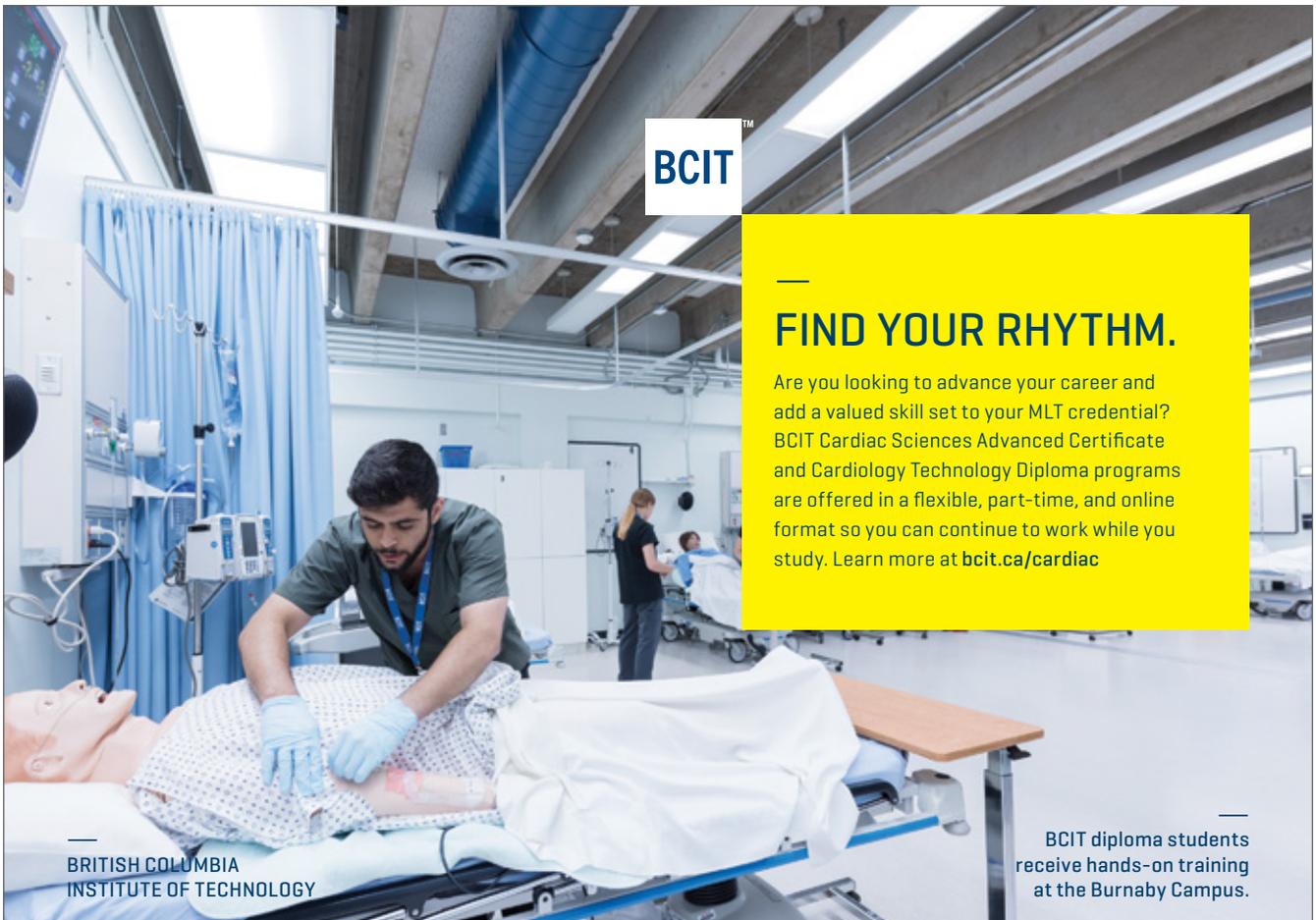
has heard from members that they are being asked to conduct duties which are outside of their scope of practice.

**What can you do?** First, fill out the Hot Spot Review task shift survey when you see it in eNEWS. Second, when the results are released, we hope you will get talking. Print off the article and put it in your lab for coworkers to read. Give it to your manager to let them know CSMLS is talking about task shifting and you think it's an important topic, too.

### Where can I find out more?

Check out the Hot Spot Review on the CSMLS website and look out for our latest survey in eNEWS.

Email [lauraz@csmls.org](mailto:lauraz@csmls.org) if you have a health care trending topic you think medical laboratory professionals should be talking about!



**BCIT**<sup>TM</sup>

**FIND YOUR RHYTHM.**

Are you looking to advance your career and add a valued skill set to your MLT credential? BCIT Cardiac Sciences Advanced Certificate and Cardiology Technology Diploma programs are offered in a flexible, part-time, and online format so you can continue to work while you study. Learn more at [bcit.ca/cardiac](http://bcit.ca/cardiac)

BRITISH COLUMBIA  
INSTITUTE OF TECHNOLOGY

BCIT diploma students  
receive hands-on training  
at the Burnaby Campus.

## SIMULATION AND CLINICAL PLACEMENT GRANT

CSMLS offers support to accredited academic programs and health care organizations looking to create quality assurance projects and research that increase our body of knowledge in:

- Enhancing simulation education and curriculum for medical laboratory science students;
- Understanding how to relieve pressures from clinical placement sites in relation to supporting student competency or through the evaluation of new clinical placement models; and
- Identifying gaps in knowledge associated with health human resource issues impacting academic programs and/or employers.

It is expected that the assistance received from these funds will help contribute to CSMLS knowledge production efforts for members and support streamlining of knowledge exchange for simulation and clinical placement discussions.

### Project Requirements:

- Canadian accredited medical laboratory science academic programs who teach medical laboratory science students may apply (MLA and/or MLT). Funding will be paid to the academic organization (internal redistribution to grant applicants).
- The project must clearly describe how it relates to increasing our body of knowledge within the described themes.
- The application of project outcomes must be relevant for MLAs and/or MLTs.

o Example: Curriculum evaluation is MLT based but process methodology can be applied to MLA.

o Example: Information-seeking event that includes questions for both professional groups.

- Students and/or recent graduates (within five years of certification) must play a role in the creation, implementation and/or evaluation of the project, regardless of the project theme or methodology.
- Funding must be used by the end of the 2019 calendar year, regardless of total project timeline.
- Submit a final report to CSMLS and provide permission to publically display it on the CSMLS website and other CSMLS media outlets as required. A project dissemination plan is required and should commit to at least two avenues of communication to relevant stakeholders (beyond the local organization).

A total of TWO grants valued at \$1,000 CAD each will be awarded.

All submissions are due Monday, October 21, 2019. Exceptions for proposal acceptance after this deadline will only be made under extreme circumstances as determined by the Granting Review Board. All submissions should be sent to Miriam at [MiriamG@csmls.org](mailto:MiriamG@csmls.org).

Should you have any questions regarding the application or submission process, please contact Laura Zychla, CSMLS Researcher, at [research@csmls.org](mailto:research@csmls.org).

## INDIGENOUS RESOURCE TO FOSTER UNDERSTANDING

In June, CSMLS launched a new online resource for members on their learning journey of Indigenous culture and health. Understanding the roots of someone's thoughts, ideas and experiences is the key to having effective health care interactions. Cultural awareness helps to ensure health needs are met effectively. To start your learning journey on Indigenous culture, our resource offers handpicked curated articles, podcasts and videos. Topics include an introduction to Indigenous Peoples, land ownership and culture.

We also share articles that explore the health care system, medical laboratory and patient care as they relate to the Indigenous experience. Topics include inequalities and social determinants, diseases and conditions, as well as how digital technology can help doctors and patients communicate more effectively.

Visit the Professional Development tab > Expand Your Knowledge on the CSMLS website to access this Resource on Indigenous Health.

## eNEWS

This digital biweekly publication keeps you informed on all things CSMLS, delivered right to your inbox. This email updates you on:

- New learning programs, courses and webinars
- Educational events, like symposia and LABCON
- National job postings and career advice
- Exclusive membership promotions and benefits
- Certification Exam details, information and results
- Volunteer and contribution opportunities
- And much more information about the CSMLS and the medical laboratory profession

It's free and open to anyone in the medical laboratory community. Just sign up using your email address at: [go.csmls.org/eNews](http://go.csmls.org/eNews).



# DEMYSTIFYING THE PEER-REVIEW PROCESS

If you're interested in submitting a scientific feature to the *Canadian Journal of Medical Laboratory Science* (CJMLS), we have some advice to help you navigate the peer-review process. It really isn't that daunting of an experience if you know what to expect before submitting your article.

To start, let's look at how long the peer-review process can take. A few factors influence this. The first factor is the quality of submission. Articles that require little to no revisions typically take between four to six weeks to be reviewed and approved for print. That being said, submissions that require more work could take months to go through the process.

The second factor is the type of literature and quality of research. The scientific editor on our Scientific and Education Review Committee (SERC) reviews current literature prior to sending your submission to the reviewers. This is done to ensure that the literature referenced in your article is current, relevant and high quality. What are current references, you might ask. A good rule of thumb is to use references from within the last five years; however, this can vary depending on the discipline of focus. During the scientific editor's review, grammar is also checked. Submissions with poor grammar will be returned to the author for revision.

To avoid this back and forth between the editor and author, we recommend that all prospective authors ask a third party to proofread your scientific article prior to submission. You could either ask a company that specializes in editing/proofreading to look over your paper, or you could simply ask a friend, colleague or family member who knows their grammar to look it over for you. It might help to offer this person a free coffee or beverage of choice.

Once the scientific editor has reviewed your work for grammar and literature, and no further edits are required, the article is sent to the reviewers. Once they are finished with their review, the submission is returned to the scientific editor.

What happens next? If your article is approved for printing, it is sent to the CSMLS for publishing in the *CJMLS*.

Please note, CSMLS reserves the right to proofread the approved article prior to publishing. By having a second pair of eyes on the article, we can catch grammar or spelling issues that might have

been missed. All edits made by CSMLS will be tracked in a Word document and returned to the author prior to publishing.

We have a helpful tip for you. In addition to the already suggested proofreading, we recommend asking a few experienced professionals within the discipline on which you are writing to review your article prior to submission. They will be able to catch things that proofreaders, who aren't trained in medical laboratory science, might miss. Experienced medical laboratory professionals can provide you with valuable feedback to ensure you are submitting the best, most relevant paper possible.

Also, all references must be formatted in the Vancouver style. If an author's list does not adhere to the Vancouver style, the paper will be returned to the author for revision. If the idea of formatting references causes some anxiety, we have a helpful online resource that details how to format by source. You can find it on our website under the About Us tab, where you will then need to go to Publications/*Canadian Journal of Medical Laboratory Science* (CJMLS).

If you want a second pair of eyes to ensure all your references are formatted perfectly, there are companies who will do this for you. Check out online editing agencies, and see if reference formatting is a service they offer.

While we're on the subject of references, we have another helpful tip. Do not duplicate sources in the in-text citations or in the references list. If you are citing a source more than once, repeat the number that was first used.

So far, we've given a brief overview of the peer-review process. Now, we would like to turn to the benefits of submitting an article for peer review. At the *CJMLS*, there are no submission fees. If your article is approved for printing, you will be able to build or expand your professional portfolio. Having a peer-reviewed paper in your portfolio looks good, especially when it's from a reputable and recognized publication like the *CJMLS*. This will also improve the visibility of your work within the medical laboratory profession. Remember, the *CJMLS* is a national publication, sent to readers throughout Canada.

Last but not least, authors will receive feedback on their paper from the SERC, which is comprised of currently active medical laboratory professionals. As such, you can rest assured that the feedback you receive will strengthen your paper, so it's the best it can be prior to publishing.

We hope these tips have helped demystify the peer-review process. If you have any further questions about submitting an article to the *CJMLS*, please contact [editor@csmls.org](mailto:editor@csmls.org).

# CANNABIS LEGALIZATION - A LOST OPPORTUNITY TO INVOLVE THE LAB?



By 2015, 22 countries had adopted some form of cannabis decriminalization. However, Canada's decision to legalize the substance nationally was only the second in the world, following Uruguay.<sup>1</sup> On October 17, 2018, under the royal assent of Bill C-45, the Government of Canada legalized, regulated and restricted access to cannabis for recreational use (medicinal cannabis laws remain intact).<sup>2</sup> Countries around the globe monitored Canada's decision and its impact, as controversy remained around the potential harm of cannabis use.<sup>3</sup>

In 2017, a rapid synthesis of existing literature found mixed evidence on the impact of decriminalization and legalization, with five primary studies finding increased use of cannabis, and two systematic reviews and six primary studies finding no increases. Debate continues in these relatively new conversations, with some experts suggesting that legalization is likely to increase cannabis use in the long run due to societal normalization. Taking this into account, it is recognized that the magnitude and timing of any increase is uncertain.<sup>4</sup> For Canada, there was an increase in usage in the fourth quarter of 2018 and first quarter of 2019. These results are considered statistically significant (higher than the norm) and showed an upward trend.<sup>5</sup>

The impact of legalization on the medical laboratory system and its professionals is relatively non-existent in the peer-reviewed literature (e.g., changes in testing volume, lab staff knowledge and source, and our role in advocacy within system-level conversations, knowledge transfer and expertise within system level conversations). This lack of information provided CSMLS with an opportunity to investigate, in real time, the effects. In conjunction with the medical laboratory science program at Ontario Tech

University via a research practicum student's course work, Julia Acker supported CSMLS in creating a research project to interview nine individuals within the Canadian laboratory environment on this topic.

**What did we find?** Organizations and laboratories mainly took a passive approach in reacting to cannabis legalization in Canada and its potential impact on the laboratory system and employees. Examples include classifying cannabis in the same procedures and policies as alcohol and drugs, lack of education sessions and resource material for staff and lack of discussion about the potential impact on the lab, including those individuals who have patient-facing responsibilities. This contradicts the desire interviewees voiced to learn more about cannabis legalization and its potential impact on the laboratory system and its professionals across time, especially during workforce shortages. Many interviewees recognized that the medical laboratory profession has a role in this health system conversation and value their expertise in this regard. Although it was not always clear how all laboratory staff could contribute, awareness of cannabis legalization and assisting in this knowledge transfer was a priority in the recommendations.

**A lost opportunity?** Laboratories have an opportunity, in the future, to take hold of such large-scale health system discussions and promote the value of MLPs as advocates, knowledge agents and contributors. This can transpire within and outside of the laboratory, especially as the initial trend shows the potential for increased cannabis use (recreational and medicinal), and the legalization of cannabis edibles will come into effect this October.

To learn more about this research or find

cannabis information resources, visit the CSMLS Special Initiatives webpage for more information. To learn more about Julia Acker, visit her profile on the Collaboration Inquiries webpage.

## REFERENCES

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- ▶ <sup>2</sup>Department of Justice Canada. Cannabis legalization and regulation. 17 October 2018 (modified). Available from: <https://www.justice.gc.ca/eng/cj-jp/cannabis/>
- ▶ <sup>3</sup>Budney AJ, Sofis MJ, Borodovsky JT. Eur Arch Psychiatry Clin Neurosci. An update on cannabis use disorder with comment on the impact of policy related to therapeutic and recreational cannabis use. 2019;269(1):73-86. Available from: <https://doi.org/10.1007/s00406-018-0976-1>
- ▶ <sup>4</sup>Hall W, Lynskey M. Addiction. Evaluating the public health impacts of legalizing recreational cannabis use in the United States, 2016;111:1764-1773.
- ▶ <sup>5</sup>Statistics Canada. National Cannabis Survey, first quarter 2019. 2 May 2019. Available from: <https://www150.statcan.gc.ca/n1/daily-quotidien/190502/dq190502a-eng.htm>



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# NATIONAL VOICE

As the national voice of Canada's medical laboratory profession, CSMLS represents the needs and concerns of medical laboratory professionals when working with laboratory and health care-related organizations. CSMLS Board of Directors, staff and volunteers attend meetings, conferences and events on behalf of CSMLS members and the entire medical laboratory profession. Here is where your voice was heard recently:

## JUNE

Student Presentation – Michener Institute of Education at UHN  
TORONTO, ON

Canadian Coalition for Public Health in the 21st Century (CCPH21)  
TELECONFERENCE

Organizations for Health Action (HEAL)  
TELECONFERENCE

CAP-ACP Council – Canadian Association of Pathologists  
(Association canadienne des pathologistes)  
NIAGARA FALLS, ON

CSA Technical Standard Committee – Fumehoods  
NIAGARA FALLS, ON; TELECONFERENCE

## JULY

Student Presentations – Anderson College  
TORONTO, ON

Alberta: Open Forum  
EDMONTON, AB

Accreditation Canada Technical Committee  
Report  
TELECONFERENCE



## CSMLS Grants, Scholarships & Awards Presents: **Mythbusters Series**



**Myth:** If I forget a required item, I don't have a chance of winning.

**Fact:** If anything is missing from the application, a CSMLS staff member will follow up to let you know and allow ample time for you to provide it.

Contact [awards@csmls.org](mailto:awards@csmls.org) with any questions or for support during the application/nomination process.

**The next deadline to apply is November 1, 2019.**  
For a complete list, visit our website.

[csmls.org/awards](http://csmls.org/awards)

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