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of medical laboratory science

Exploring ETHICS and the LAB

Brave New World

The State of Whistleblowing

Blood on the Move

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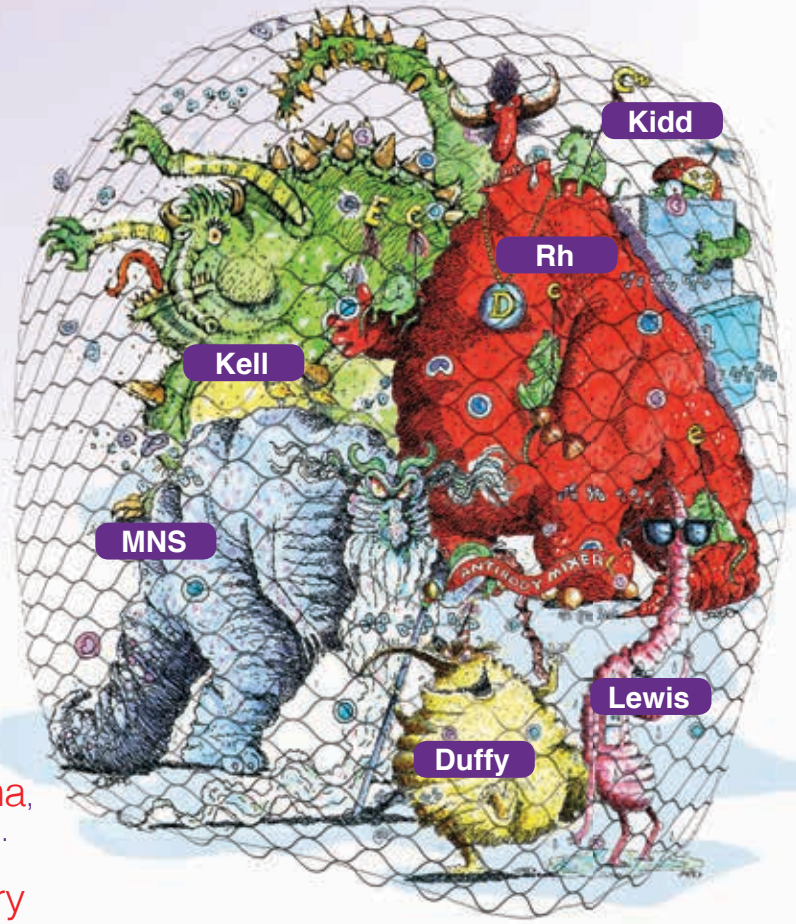

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1 Weisbach.V. and al (2006). Comparison of the performance of microtube column systems and solid-phase systems and the tube low-ionic-strength solution additive indirect antiglobulin test in the detection of red cell alloantibodies.Transfusion Med.,16 (4), 276-284

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ENGLISH EDITION | SUMMER 2016

Managing **Disruptions**

Christine Nielsen
CHIEF EXECUTIVE OFFICER

You've probably heard the term, "market disruptor". It refers to an innovation that fundamentally changes the way we consume products or services, disrupting existing markets or creating entirely new ones.

The rise of Wikipedia, for example, took the encyclopedia market by surprise. Because it is essentially free, unlimited in size and instantly updated, it was impossible for print encyclopedias to compete, eventually leading the former market leader, *Encyclopedia Britannica*, to end its print production after 244 years in business.

Smartphones changed the way we connect with people. Growing up in Ennismore, Ontario, we had a party line phone. There were no unlimited long distance plans, call waiting or call display. You waited for a break in the line and dialed out!

Modern examples like Uber and Airbnb come to mind, although I'm not sure I'm ready to get in a car with a stranger… just yet.

We typically don't associate market disruption with the medical laboratory profession. Technology has always been a driver of change in our profession. We were all grateful the day mouth pipetting was declared unsafe but we now face a number of forces that will affect our profession in the years ahead.

Provincial purchasing of equipment, direct-to-consumer (DTC) health service providers, funding changes by Health Canada, and service amalgamations all stand to affect the way we operate as a profession. We do not have control over these forces, which can feel disconcerting and frightening.

Case in point, we were all surprised by the sudden announcement that the Canadian Medical Association (CMA) was leaving the education program accreditation business. For years we considered CMA accreditation of our MLT and MLA programs to be an important piece of a larger accountability and patient safety framework. Now we are forced to look critically at the future and decide what we need to fill the gap when CMA departs in 2018.

How do we best respond? How do we manage the lack of control? How do we respond to unanticipated shifts in our profession?

I will tell you this – at CSMLS we respond through a two-fold approach of stakeholder consultation and research. Since the CMA announcement, we have had lengthy discussions with members of the regulatory and education communities. We have spoken to other professions to see what they are doing and are actively researching various models of program accreditation.

Only a few months into the process, I can't say where we will end up on this issue. What I can say definitively is that whichever road we head down, we will use consultations and research as the roadmap. We will look at risk, timeliness, quality, cost, and long-term viability. Our response will neither be knee-jerk nor short-sighted.

We cannot foresee every change that will be thrown our way. We can't control these changes either. What we can control is how we respond to them. We can choose to embrace change. We can choose to look at change as an opportunity for creative thinking and new solutions. As an evidence-based organization, we will always lean on stakeholder consultation and research to guide us. We may never be Apple, Airbnb or Uber, but we will make sure we are not *Encyclopedia Britannica* either.

We typically don't associate market disruption with the medical laboratory profession. Technology has always been a driver of change in our profession.

Chris Hirtle
2016 CSMLS PRESIDENT

Employee Engagement for Workplace Success

Are you an engaged employee? Are you truly present in your job and in your work environment? Why should you even care?

Employee engagement is about creating the right conditions in which employees of an organization have the capability and potential to give their best each day. It is about crafting an environment where employees are committed to work toward their organization's mission and goals. This environment is based on trust, integrity, strong two-way communication and being included fully as a member of the team.

A lot of pressure is put on supervisors and managers to achieve employee engagement. It's been found that the relationship that one has with their direct supervisor is the number one reason to stay or leave a job. Direct supervisors can make or break a workplace. I think this also relates to larger issues we are seeing in workplace dynamics: workload and culture.

A survey recently reported in Forbes magazine revealed the link between several workplace concerns and employee retention. I was interested in these points:

- Employees who felt chronically overworked were "31% more likely to think about looking for a new job than their colleagues who feel comfortable with their workload."
- "Employees who give their work culture low marks are nearly 15% more likely to think about a new job than their counterparts."

Although these results aren't surprising to me at face value, I looked at them through an 'engagement lens'. When we are overworked and not happy about it, there is a good chance we are feeling underappreciated too. It is very likely that employees who feel overworked and underappreciated are less inclined to be engaged within the organization. Disengaged employees tend to foster a negative workplace culture. It's a vicious circle, but one that can be fixed.

If you are a supervisor in a position of great importance in the engagement/culture balance, are you able to recognize that your employees are becoming disengaged? Symptoms might include common goals that are not accomplished, initiatives to improve performance fall flat, missed commitments met with excuses and blame, complaints of workload with no viable solutions or sidebar or 'hallway' conversations that don't result in change.

If you are an employee that is feeling disengaged with your workplace, do you partake in any of these red flags? Are you feeling underappreciated or that your workplace culture is in need of adjustment? If so, think about what you can do.

CSMLS offers support through resources for the medical lab community. Tools such as the Code of Ethics and the Professional Code of Conduct are just two guiding documents. You can also be part of the Mentoring program (mentor.csmls.org). It is currently a pilot program with targeted enrolment (for now), but can be a great tool to give and receive support. Even attending events such as LABCON will help connect you to your colleagues, which are a wealth of information, experience and support.

I'd love to hear some of your suggestions for starting to shift workplace culture and engagement. Tweet me your ideas to @CSMLSPresident or email me directly at president@csmls.org. Let's get the conversation started.

Employee engagement is about creating the right conditions in which employees of an organization have the capability and potential to give their best each day.

The Inbox

The Inbox is meant to provide a public forum for us to address questions, concerns or issues that are raised by members. CSMLS receives feedback through written correspondence, email and through our various social media portals. If you have a question or comment you would like to have addressed in an upcoming issue, talk to us on Facebook, Twitter (@csmls) or through email at editor@csmls.org.

I've applied to volunteer with the Society but I haven't been contacted to fill one of the volunteer opportunities. Why is that?

We appreciate the dedication of those who show their interest in volunteering with the society. Once you have indicated your desire to volunteer with us, your name and contact information is added to a volunteer list that we use to contact potential volunteers directly regarding specific opportunities as they become available. However, you should still apply directly for volunteer roles when they are posted through our website and eNEWS.

We truly appreciate the enthusiasm and dedication of our members. We frequently have more volunteers than positions available and can't always offer a position to every applicant. We encourage you to continue to put your name forward for what interests you.

I'm about to retire. Do I have to cancel my membership?

Of course not! If you retire you can still maintain your CSMLS membership as a Certified Retired Member while receiving all of the same benefits as a regular member. Liability Insurance is continued indefinitely for Retired Members provided we have their date of retirement on file and that they were active members with PLI coverage at the time of the incident.

For more information about member categories and fees, you can visit our website under the Membership tab or contact our Membership team by email at memserv@csmls.org or by phone at 1-800-263-8277.

CORRECTION NOTICE:

Please note a correction has been made to the article *"Professional Development Across the Country"* found in CJMLS Volume 78 issue 1 on page 10.

Under the description of professional development requirements for the College of Medical Laboratory Technologists of Alberta (CMLTA), the last sentence should have read: Verification of professional development: Learning Plan must be submitted prior to renewal and may be subject to an audit process.

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Professional Development on a Budget

Fulfilling professional development requirements in an increasingly expensive world

In the medical laboratory community, professional development is a responsibility and clearly stated in the CSMLS Code of Professional Conduct and a section of the new Code of Ethics. (See sidebar on next page for details.)

Recently, CSMLS received questions from members asking how to achieve their professional development (PD) goals with high-quality education within their budget. Professional development in the medical laboratory industry is very important and a great emphasis should be placed on continued learning. This is a valuable commodity in the professional toolkit and one that should be considered an investment in the future.

Everyone has a different budget for different needs. CSMLS is here to help. The good news is, members already have access to free and inexpensive education.

All members receive special pricing on all Learning Services courses. Courses are carefully selected from each laboratory discipline, and up to 10 courses are offered at no charge to

members. Express courses are also reasonably priced. The fee to challenge the exam is only $25 and includes a certificate of completion.

Another price-friendly education option is webinars, a recent addition to the learning offerings. Webinars are typically comprised of 45 to 60 minutes of material presented by a subject matter expert. The price of the webinar also includes a quiz to evaluate the learning.

Professional development does not have to be time-consuming. The CJMLS scientific article quizzes are a free and quick way to learn more about research in the field. They will test knowledge on CJMLS-published scientific articles and include a certificate of completion.

Don't overlook professional conferences. When taken at face value, conferences can give some people sticker shock. However, when comparing value, time and money, conferences can give the best bang for a buck. They provide intense, high-quality learning, all within a couple days. Compared to courses that run over weeks or months, there is a lot of value per day of learning. Conferences pack four to five hours' worth of education into a day (often including meals and social events) for a reasonable price. Registration prices vary anywhere from $40 to $180 per day. When planning learning activities on an annual basis, consider saving up for a national or provincial conference every couple of years.

While planning, keep in mind that many hospitals and health systems organize education for their employees. Events such as lunch and learns, hospital rounds or in-services are made available to employees, usually with little or no fees.

It's important to make room in a professional budget for some learning and development. CSMLS is proud to offer a range of education opportunities that considers learning styles as well as budgets. CSMLS wants to see you succeed, at any price.

MICHELE PERRY
Manager, Learning Services

Professional Development by Code

Excerpt from the Code of Professional Conduct

Medical laboratory professionals shall endeavour to maintain and improve their skills and knowledge and keep current with scientific advances. They will uphold academic integrity in all matters of professional certification and continuing education.

Excerpt from the Code of Ethics

3.1 Reflect on one's fitness to practise and expand one's knowledge, skills, judgments and attitudes through continued professional development.

3.2 Contribute to the development of the profession by sharing one's knowledge and experience.

3.3 Participate in interprofessional collaborative and educational processes, and the development of partnerships which contribute to positive patient outcomes.

3.4 Contribute to the advancement of the profession by:

- improving the body of knowledge,
- adopting scientific advances that benefit the patient, and
- maintaining high standards of practice and education.

PART 1 OF 4

CLIMATE CHANGE

Drivers of higher medical laboratory professional standards in Canada

This article is the first in a four-part series examining the possible drivers setting the standards higher for both the current workforce and the students representing our future.

Part 1: Changes in the Profession

Ask any seasoned medical laboratory professional (MLP) and you will not be in short supply of information on how their knowledge, skills, abilities and judgment have changed and adapted to fit patient health care needs, local work environment requirements and health care system demands over time. You will likely hear a consistent theme: as time has changed, so too has the profession and with it, bringing higher and more complex standards to uphold. The good news is that the MLP metamorphosis has not been a gruesome experience, but, rather a positive multidimensional challenge that the profession has lived up to admirably.

What changes have been encountered by the profession? First and foremost, the rise and fall of human health resources (HHR) has benefited and plagued the allied health professions in Canada[1]. This is not a new story. We are currently in a time of drought, rising retirements and an insufficient supply of future MLPs[2], so it is not surprising that academic programs, health organizations and policy-makers have been trying to find solutions to this issue[3,4]. What is different in today's world is that the MLP impact is compounded by comorbidities that have not been as influential in the past, such as rapid technological changes, increased complexity of patient care pathways (i.e. precision medicine and point of care), a better-informed and inquisitive patient population, and shifts in skills mix within and between professions. There are other challenges experienced by educational programs, employers and the individuals within the workforce that this series of articles will continue to address.

We all know the story of our parents walking three miles to school in five feet of snow with only paper thin boots on. Could this exaggeration be the case for the MLPs experience? I would argue that the answer is a resounding "No". There is concrete evidence in addition to personal reflections which demonstrate that the struggles of today are setting a higher standard and MLPs are walking through more snow than ever.

Workload Drivers

About half of all MLTs will be eligible to retire in the next 10 years, with Canada's rural and remote communities hit the hardest[5,6,7]. Recently released data shows that the greatest loss within the MLP workforce (2010–2014) were those 21 to 30 years post-graduation. There was not a corresponding increase in the number of MLTs obtaining certification in any age category[2]. It is worthwhile to understand the push toward greater efficiency and the parallel increase in demand of total workload required per individual.

As the majority of developed health care economies are "seeking a much sounder evidence base for clinical practice"[8], Lean and Six Sigma have been hot ticket process improvements strategies over the last decade[9]. While these strategies may have cut excess processes and identified time wasted, they have also allowed for new process models and improved technology that increased workload substantially. Workload measures continue to show an upward trend for MLPs[10,11]. For example, Ontario had projected a 1.8% per year increase for lab tests between 2005 and 2010, however, an actual increase of almost 4% per year was experienced resulting in the number of tests going up faster than the workforce capacity[12].

Patient Drivers

Health care leaders and government[13] are more actively discussing and incorporating the importance of patient engagement and experience within policy, with 85% considering the patient-as-consumer trend to be an opportunity[14]. It is argued that sharing information and engaging patients can demonstrate lab efficiency and effectiveness such as reducing redundancy[15] and decreasing the chance for diagnostic errors[16].

Over a decade ago, it was predicted that the "increased access by health professionals, and the prospect of allowing patients to have direct access to diagnostic services (already a reality in some countries) will inevitably increase the workload of those staff who are trained and qualified to provide advice on the selection of tests and the interpretation of results"[8]. This trend has come true. For instance, patients who reported feeling less involved and less informed about their care were more uncomfortable asking their provider questions (33%) compared to those who felt informed (67%)[17]. With the rise of patient portal usage and transparency of decision-making through the health care team (moving beyond physician dominance), patients are shopping for services and have easy access to quality information with the support of the system around them[18,9,19,20]. With increased transparency and active engagement of patient, comes greater responsibility of MLPs to be involved in and lead knowledge translation activities.

About half of all MLTs will be eligible to retire in the next 10 years, with Canada's rural and remote communities hit the hardest.

Skill Mix Drivers

With the decline in available MLPs, medical laboratory employers are replacing these individuals by either repositioning skill mix models within the profession (between MLTs and MLAs) or between different professions (e.g., pathology assistants)[21]. For example, automation in the laboratories has dramatically impacted MLTs as the new testing systems can be operated by MLAs, reducing the need for MLTs (a more expensive workforce in a time of fiscal constraints). Also, standardization allowed by such changes in technology in conjunction with process improvement strategies have facilitated testing standardization and allowed more tasks to be considered "routine". This is not a downloading of

services to other professions, but rather, a natural endeavour to fill gaps aimed to create a laboratory workforce that is multi-skilled and interdisciplinary which increases attention to expertise areas rather than practicing diffusely. Laboratory medicine has adjusted its mix to meet the needs of the service it provides, gaining greater control as information managers.

Changes in Knowledge Acquisition

The National Institutes of Health Genetic Test Registry has more than 7,000 orderable tests for approximately 3,000 conditions and 6,300 genes, which represents a doubling of genetic tests over two years[22]. Keeping up with the latest advances in testing, precision medicine, point of care devices and diagnostic technology is not a small task[2]. This means that MLPs must continually acquire large quantities of new knowledge to effectively deal with more complex equipment and situations. There is also a growing trend for increased complexity of patient treatments that require sophisticated laboratory work to monitor and alter care when required. Recently constructed programs such as Choosing Wisely (www.choosingwiselycanada.org) recognize these trends and help support health care professionals in decreasing unnecessary tests and treatment to ultimately provide high-quality care.

Conclusions

MLPs are being propelled to the forefront of change and with this come the drivers that push them forward and set a higher standard.

- As shortages in the MLP continue, we continue to see an increase in workload measurement tools reporting a disproportionate increased demand for tests. The trend to utilize efficiency models

Patient Portals

With increased popularity of user-driven portals, the CSMLS Board of Directors are creating a position statement on Patient Portals.

To view and download all CSMLS Position Statements, visit csmls.org under the About Us tab.

has supported this ability but demand for current workload standards exceeds it.

- Transparency of information results in higher standard expectations by patients and health care organizations for the professionals, increasing the bar for those who provide laboratory tests and diagnostic data.
- Shifts in the skill mix for MLPs have resulted in a specialization within the practice and a movement of routine or automated tasks from MLTs to MLAs, increasing the minimal competency requirements of the workforce.
- Knowledge acquisition for MLPs is constant and increasing in complexity from the patient pathways and technological perspectives.

LAURA ZYCHLA
Researcher, CSMLS

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Other Resources

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PERSPECTIVES

The Perspectives section of the *Canadian Journal of Medical Laboratory Science (CJMLS)* seeks to provide thoughts, insights, and opinions from individuals with different points of views. We hope that as this section evolves, it allows us to present a broader array of topics that reflect the varied careers and experiences of our members. If you are interested in contributing to the Perspectives section, email us at editor@csmls.org.

A SAFETY PERSPECTIVE

Blood and Body Fluid Exposures

Occupational exposures to blood or body fluids are some of the most feared occupational hazards for health care workers. Exposure to a blood-borne pathogen can lead to serious diseases. It is not surprising that many provincial governments have addressed identifying, assessing and controlling this hazard in legislation specific for health care workers.

According to an article published in *Clinical Infectious Diseases*[1] in 2009, "viral agents transmitted through blood and bodily fluids cause most of the laboratory-acquired infections in diagnostic laboratories…" The article notes that, while Hepatitis B (HBV) is the most common laboratory-acquired infection, human immunodeficiency virus (HIV) infection associated with exposure to blood or body fluids likely causes the greatest concern. Over an 11-year period in the United States, 25% of health care workers with occupationally acquired HIV infection were laboratory workers.

Prevention

Preventing blood and body fluid exposures (BBFEs) is the most effective way of ensuring laboratory workers do not acquire infections transmitted by blood or body fluids.

The following are major prevention strategies designed to reduce exposures related to sharps:

- Eliminate the use of needles or sharp instruments whenever possible.
- If needles are required, use safety-engineered needles and lancets (as well as other sharps that are safety-engineered).
- Ensure training on the proper use of safety-engineered devices and ensure the safety features are activated or engaged when in use.
- Keep hands from moving in front of sharps.
- Dispose of sharps immediately after use in an approved sharps disposal container.
- Ensure sharps disposal containers are not over-filled.
- Do not inject blood through stoppers into vacuum tubes using exposed needles.
- Do not recap or remove needles from the blood collection device.
- Do not use glass capillary tubes for hematocrits.

Controls to guard against exposure to blood or body fluids to skin or mucous membranes include:

- Follow accepted infection prevention and control procedures including the use of Routine Practices and Additional Precautions.
- Follow proper hand hygiene practices.
- Cover any broken skin and wear appropriate protective clothing when handling patients or any specimens that contain blood or body fluids.
- Wear gloves when there is the possibility of contact with any blood or body fluids.
- Wear goggles or a face shield when there is the possibility of splashes of blood or body fluid.
- Work in biological safety cabinets when required.

Post-exposure Procedures

While prevention is the best way to reduce BBFEs, effective post-exposure protocols can assist in reducing risk and ensuring appropriate follow-up, should an exposure occur. The laboratory should have a well-documented post-exposure protocol that all workers are aware of. It is critical to ensure any BBFE is reported promptly to ensure opportunities for prophylactic treatment are available if recommended. This includes exposures that may occur outside of regular work hours. While different jurisdictions and employers may have somewhat different procedures, the following provides a general summary of steps normally taken after a BBFE.

First aid

- Cleanse body sites exposed to potentially infectious blood/body fluids immediately with soap and water.

- Avoid the use of alcohol, hydrogen peroxide, bleach or other chemical cleansers/antiseptics/disinfectants.
- Do not "milk" the wound, as squeezing may promote hyperemia and inflammation at the wound site, potentially increasing exposure if HIV is present.
- Allow injury/wound to bleed freely and then cover lightly.
- Flush exposed mucous membranes (including eyes) with water or normal saline.

Reporting the incident

- Ensure the incident is reported to the immediate supervisor and follow reporting procedures established by the organization.
- Follow procedures for accessing expert medical advice/consultation.

Risk assessment conducted by expert medical professionals

Includes consideration of a variety of factors, such as:

- Task that was being done when the incident occurred.
- Type of body fluid to which the worker was exposed.
- If the transmission was intravenous, intramuscular, deep transcutaneous.
- If the exposure caused bleeding at the body site.
- If the exposure was to the worker's mucous membrane.
- If the exposure was to intact skin.
- How much fluid was the worker exposed to.
- If the exposure was via a needle, the gauge of the needle.
- If the source was known or unknown.
- If the source was considered high risk (determined by the expert medical professional using well-defined criteria).

Depending upon the risk assessment, testing may be done

- Testing of the source patient (after informed consent) may be done for HBV, Hepatitis C virus (HCV), HIV.
- Baseline testing of worker may be done.

Depending on the results of testing, treatment may be initiated

- Post exposure prophylaxis is available for HIV, HBV.
- Monitoring of worker to determine if infection occurs.
- If infection occurs, treatment may be initiated for HBV, HCV and/or HIV.
- Workers are monitored carefully with periodic testing.

These are general guidelines only. It is important to learn and understand what processes are in place in each workplace and what follow-up can be expected.

Preventing workplace exposures to blood and body fluids is the responsibility of all employers and workers. Managing exposures that do occur will assist in reducing the risk that a worker will acquire a disease caused by a blood-borne pathogen.

OVER AN 11-YEAR PERIOD IN THE UNITED STATES

25%

OF HEALTH CARE WORKERS WITH OCCUPATIONALLY ACQUIRED

HIV INFECTION

WERE LABORATORY WORKERS.

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GENE SHEMATEK
Occupational Health and Safety Consultant to CSMLS

A CAREER PERSPECTIVE

The Value of Networking

Networking is a great professional and personal social skill that will likely become a fundamental part of any professional's career development. The most valuable part of networking is forming and maintaining a strong circle of contacts that will help navigate different stages of a career.

Networking is a tool that helps create new opportunities, share knowledge and find new ideas through like-minded professionals in the field. It can be very helpful to exchange information with a group of people with common interests and goals.

The idea of networking often makes people feel nervous or uneasy; however, most people don't realize they already have a network. The people in a current network typically consist of a manager, colleagues, classmates, friends and even family.

An article from recruitment and placement agency, Michael Page (michaelpage.ca) outlines all the benefits of networking in any profession.

Here are the top six benefits:

Strengthening Relationships

Networking is about sharing, not taking. It is about forming trust and helping one another toward goals. Regularly engaging with contacts and finding opportunities to assist them helps to strengthen a relationship. Comment on LinkedIn posts or share online articles of mutual interest.

Fresh Ideas

A network can be an excellent source of new perspectives. Exchanging information on workplace challenges, experiences and solutions allows everyone to gain new insights they may not have thought of. Don't forget that your perspective is helpful to others too. By offering a point of view, in a respectful way, you can be seen as a reliable source of information and guidance.

Raised Profile

Being visible and getting noticed is a benefit of networking that's essential in career building. Regularly attending professional events, such as conferences or courses, will get your name and face known. Putting faces to names can make people feel more comfortable, which makes it easier to reach out for assistance or advice.

Access to Opportunities

Expanding a network can open doors to new opportunities for career advancement, personal growth or simply new knowledge. By actively networking, your name and face are kept top of mind when opportunities such as job openings arise. It may also increase the likelihood of receiving introductions to relevant people in the industry or even a referral.

New Information

Networking is a great opportunity to exchange best practice knowledge, learn

The idea of networking often makes people feel nervous or uneasy; however, most people don't realize they already have a network. The people in a current network typically consist of a manager, colleagues, classmates, friends and even family.

about industry techniques and stay abreast of the latest technology. A wide network of informed, interconnected contacts means broader access to new information. Attending tradeshows and seeing a great product that may not apply to your job but could help another department, can help colleagues by simply sharing learnings.

Advice and Support

Being surrounded with a group of trusted peers can be priceless. They can offer solutions to common challenges, advice for overcoming those challenges and opportunities that could open doors career-wise.

A network is the secret weapon to career success. A key element to building an effective network is to give and take. Understand that others are looking for reciprocal advantages in their careers as well. Don't underestimate what you can offer to someone else.

Whether currently working in the field, looking for a promotion or searching for a new job, building a strong network is valuable to personal and professional growth.

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ASHLEY REGO
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AN EDUCATOR'S PERSPECTIVE

Teaching Communication to Medical Laboratory Technology Students

Effective communication is a cornerstone of good professional practice; however, using reflection to teach communication has not historically been the focus of medical laboratory technologist training. To help nurture reflective practitioners, BSc students in the Medical Laboratory Science (MLS) program at the University of Alberta are now introduced to professional reflection in their first year.

Qualitative data analysis of course evaluations and student reflections proves the benefits of reflective practice including increased professional identity and understanding of professionalism and the importance of

an interdisciplinary team in patient-centered care[1]. The following narrative illustrates how reflection is also a tool for students to explore effective communication as an important foundation of professional practice.

To nurture critical thinking skills and the ability to contemplate the perspectives of others, students are required to keep a professional reflection journal of events that happen during their introductory clinical experiences[2].

Using qualitative inquiry, a thematic analysis of the student journals from 2009-2013 was completed[3]. Aspects of student experiences that align with the CSMLS communication competencies were captured.

The largest impact on student learning has been the recognition that communication methods must be varied in order to ensure the best patient care. Following an interprofessional shadowing experience, students reflect on how health professionals demonstrate adaptive skills in communicating with patients (CSMLS General MLT Competency 10.05.3). *"It was interesting to see how a doctor interacted with a patient when there was a language barrier. The doctor spoke English to the patient slowly in case there were any words he couldn't understand and made a lot of gestures."*

Students learn to recognize the importance of communication in patient care. Below, a student is describing a situation where a language barrier prevented a laboratory assistant from communicating to a patient the specialized collection instructions necessary to ensure a valid test sample (CSMLS General MLT Competency 10.01). *"In the end [of] this experience I came to realize just how vital communication is between people. In the field of health care not only do [health professionals] need to communicate to patients to ensure that patents receive the best treatment for their health… but also in the future when I become a lab technologist communication is key between myself and staff members, nurses and doctors… Not only do patients need instructions but health care professionals also need to be able to provide one another with the proper instructions for what type of samples must be collected or which tests must be done."*

Another CSMLS competency is the ability to recognize indicators of patient stress and respond accordingly (CSMLS General MLT Competency 10.05.1). The following passage describes an interprofessional shadowing experience where a nurse has given a patient bad news and the patient responded with anger, frustration and grief. The student is reflecting on the nurse's response and adaptation to the patient's emotions in order to provide comfort. *"I think it's important to be able to adapt in how you act and respond to comments whether they are negative or positive and how it could affect the patient's condition. I think with time and experience I hope to work on this skill and it made me realize that although the technical and knowledge components of a profession are important, the social component is just as important too."*

To nurture critical thinking skills and the ability to contemplate the perspectives of others, students are required to keep a professional reflection journal of events that happen during their introductory clinical experiences.

Students also learn how to recognize the importance of non-verbal communication (CSMLS General MLT Competency 10.02.7). Here, a student is reflecting on the link between effective communication and confidence and the balance between using the tools they were taught to connect with people without coming across as insincere. *"Making eye contact is an important step in communication, but I had to admit that there were many times that I've failed to do so. … [Trying] too hard can certainly result in the opposite of what you want to achieve, but not trying in the first place is the same. It is necessary to find the balance, which I believe requires self-confidence and not being afraid to speak… After all, it is important for us to gain the trust of patients and their families, so how can it be achieved if one does not even believe in herself?"*

The above student reflections show an understanding of the nuances of effective communication. Qualitative analysis of students' journals indicates MLS students are learning to reflect on professional practice. After completing the introductory clinical experience, students have a better understanding of many of the aspects of appropriate communication. I believe that this early introduction has better situated the students to continue reflecting during their clinical training and future professional practice.

Acknowledgments:
Thank you to Ms. Roberta Martindale for edits and thoughtful discussion.

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FEATURES

Exploring Ethics and the Lab

BRAVE NEW WORLD

Are we ready for human germline gene editing?

In April 2015, scientists in China shocked the world with the news that they used an exciting new tool called CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats) to alter the genes of non-viable human embryos. Their published paper ignited an urgent need for a global discussion about the ethics of editing the human genome. We are at the dawn of a brave new world where designer babies will be possible, but is it right to tinker with the master code of humanity?

Genome modification has been around since the 1970s, but in the last few years, the CRISPR innovation has allowed researchers to cut precisely targeted sections of DNA and paste in new pieces. CRISPR allows for simpler, faster and cheaper research: what used to take millions of dollars and years to accomplish now costs about $2,000 and takes a few weeks. Thousands of labs around the world are using the tool to hunt for new treatments for people living with debilitating conditions caused by genetic mutations. For example, Dr. Ronald Cohn uses CRISPR extensively in his research program at The Hospital for Sick Children in Toronto to develop targeted treatments for children with Duchenne muscular dystrophy.

Gene editing of somatic cells, as with Cohn's research, can only impact people who receive the treatments. But using CRISPR to edit human eggs, sperm or embryos produces

Current Reproductive Technologies in Canada[6]

In vitro fertilization (IVF) includes:
- Ovarian stimulation and egg retrieval
- Sperm collection
- Fertilization and embryo culture
- Embryo transfer
- Progesterone supplementation
- Pregnancy test

Artificial insemination uses donor sperm to help women achieve a pregnancy. Two lab technologists work together to transfer specimens to cryopreservation tanks and document inventory to ensure safety, accuracy and compliance with Health Canada regulations.

Preimplantation genetic diagnosis/screening (PGD/PGS) involves testing embryos before implantation by IVF. Embryos showing these conditions or chromosomal abnormalities associated with IVF failure or miscarriage are discarded rather than implanted:
- Cystic Fibrosis
- Hemophilia
- Huntington's disease
- Marfan syndrome
- Muscular Dystrophy
- Thalassemia
- Tay-Sachs Disease
- Spinal Muscular Atrophy
- Sickle Cell Anemia
- Down Syndrome
- Edwards Syndrome

germline changes that are passed down to descendants, raising a host of ethical questions and considerations. The edits might be ideal to prevent a child from inheriting a devastating genetic condition like Huntington's disease, but where do we draw the line between disease prevention and human enhancement to optimize offspring for traits like intelligence, eye colour or height? Will this new technology be available to everyone who wants to have children? Will it disenfranchise people living with disabilities?

Françoise Baylis, PhD, a professor at Dalhousie University in Halifax, Nova Scotia and Canada's Research Chair in Bioethics and Philosophy says, "If we're talking about changing the species, surely that's worth having a conversation. The question is, who decides, and why do you think you should decide?"

In December 2015, leading scientists and bioethicists from around the world convened at the International Summit on Human Gene Editing in Washington, D.C., to discuss these ethical issues and outline a framework for how the global scientific community should move forward. At the conclusion of the Summit, the panel released a consensus statement with four recommendations.

Two of the points apply to reproductive medicine. "Intensive basic and preclinical research is clearly needed and should proceed, subject to appropriate legal and ethical rules and oversight, on:

(i) technologies for editing genetic sequences in human cells;
(ii) the potential benefits and risks of proposed clinical uses, and
(iii) understanding the biology of human embryos and germline cells.

If, in the process of research, early human embryos or germline cells undergo gene editing, the modified cells should not be used to establish a pregnancy; and Clinical Use – Germline… It would be irresponsible to proceed with any clinical use of germline editing unless and until:

(i) the relevant safety and efficacy issues have been resolved, based on appropriate understanding and balancing of risks, potential benefits, and alternatives, and

> "We still don't have enough knowledge to know what the downstream linkages are. You may be replacing a page in the book, but it may in fact change the whole story."
>
> *– Arthur Leader MD, FRCSC, founder of the Ottawa Fertility Centre and professor of obstetrics, gynecology and reproductive medicine at the University of Ottawa*

(ii) there is broad societal consensus about the appropriateness of the proposed application. Moreover, any clinical use should proceed only under appropriate regulatory oversight…"[1]

Baylis, the only Canadian on the Summit's organizing committee, says it's critical to pay attention to the part of the statement that says, "unless and until there is a broad societal consensus." She says, "The issues with this technology should not be reduced to safety and efficacy alone to justify moving forward."

On their own, the issues are nowhere near resolved. Baylis says, "We don't know what safety and efficacy mean yet. For example, do you have to believe it's reversible for it to be considered safe and effective?" Researchers in China successfully produced the first twin baby monkeys with specific genetic mutations in January 2014. In their experiment, they disrupted three genes in 180 single-cell monkey embryos. Of the 83 embryos implanted, 10 pregnancies resulted, one of which led to the birth of the twins with two genetic mutations[2]. It was a compelling demonstration of genetic engineering, but we are a long way from knowing if experiments like these will be successful in the long term and if the results might translate to humans.

The Summit consensus statement outlined some of the anticipated risks, which include inaccurate editing that could cause off-target mutations, incomplete editing of early-stage embryos that could lead to mosaicism, a condition where cells in the same person have different DNA, and the difficulty of predicting how engineered genetic changes will interact with the environment[1]. Arthur Leader MD, FRCSC, founder of the Ottawa Fertility Centre and professor of obstetrics, gynecology and reproductive medicine at the University of Ottawa, says, "We still don't have enough knowledge to know what the downstream linkages are. You may be replacing a page in the book, but it may in fact change the whole story."

Baylis says, "the reality of the science is that ultimately, it's only going to happen in conjunction with an IVF clinic, putting the material back into women to reproduce. We need to remember to pay attention to the women who will be participants in this research as they are the ones who will be pregnant and give birth. Even before that, they are the sources of the raw material. It's not all that easy to get access to women's eggs, and yet we talk about it as if they're all lying around for people to pick up."

Broad societal consensus will be a difficult bridge to cross, given the different regulatory environments around the world. The United Kingdom's Human Fertilisation & Embryology Authority (HFEA) is very progressive. On January 14, 2016, developmental biologist Kathy Niakan of the Francis Crick Institute in London, received regulatory permission to modify human embryos using CRISPR/Cas9 gene editing

Three-Parent Babies

Mitochondrial DNA replacement therapy (MRT) is another new gene modification technology that leading ethicists, scientists and legal experts around the world are currently discussing. It prevents passing down a mitochondrial disease from mother to child. Mitochondrial diseases affect the mitochondria, tiny energy-producing structures found outside the nucleus of every body cell. MRT involves inserting the nucleus from the mother's egg cell into a donor's egg where the nucleus has been removed. IVF either before or after MRT produces an embryo that has genetic material from three parents.

Ethical issues include potential harms to egg providers, offspring, and future generations, and society as a whole.[7] Illegal in Canada under the AHRA, MRT was approved in the U.K. in October 2015. In the U.S., the approach is more cautious. In February 2016, the Institute of Medicine's Committee on the Ethical and Social Policy Considerations of Novel Technologies for the Prevention of Maternal Transmission of Mitochondrial DNA Diseases recommended that the FDA consider initial clinical investigations subject to certain conditions including limiting investigations to women who are at risk of passing on a serious mitochondrial disease to their offspring, the mutation is known to cause disease and the disease is predicted to be severe; and only male embryos will be transferred for gestation to avoid introducing germline changes until more is known.

> "If we're talking about changing the species, surely that's worth having a conversation. The question is, who decides, and why do you think you should decide?"
>
> *– Françoise Baylis, PhD, professor at Dalhousie University in Halifax, Nova Scotia and Canada's Research Chair in Bioethics and Philosophy*

for research purposes. The HFEA approved her application with the requirement that the embryos will not be transferred to a woman's womb for implantation[3]. Niakan's research goal is to use CRISPR to determine which genes drive growth processes in early embryonic development, which could shed light on future infertility treatments. The approval process included a parliamentary vote and a lengthy review by the HFEA[4].

In Canada, we have a whole different regulatory framework. Currently, there are three reproductive technologies permitted in Canada under the *The Assisted Human Reproduction Act (AHRA)*: in vitro fertilization (IVF), artificial insemination and preimplantation genetic diagnosis/screening (PGD/PGS) to screen embryos for inherited diseases. (See sidebar on page 22 for more information.) Gene editing of eggs, sperm or embryos is explicitly prohibited under (AHRA: 2004; revised 2012) Section 5(1) f: *No person shall knowingly alter the genome of the cell of a human being or an in vitro embryo such that the alteration is capable of being transmitted to descendants.*

Leader says, "What's allowable in the U.K. is much broader than in Canada because they have a framework in place. The HFEA is satisfied that process for ethical oversight is in place and what goes on in lab clinics can be managed within that framework as long as you balance the consideration of the needs of science, ethics, and the impact of both on society. In Canada, we are left with prohibitions and no framework to proceed, until the legislation is revised at some future date." Baylis says that an outright ban is how most people are reading the act, however, she sees a wrinkle: "You could argue, and nobody has yet, whether 'capable' means you intended to transfer the embryo. If you don't intend to put it into a woman, then it could never be transmitted to descendants, and you are not affecting the germline."

Until the legislation changes in Canada, the prohibition on human gene editing means that Canadian researchers will miss out on a chance to participate in breakthrough research that could increase knowledge about treating and preventing serious diseases and illnesses as well as the causes of miscarriage, and developing new infertility treatments and more effective techniques for contraception, says Leader. In the meantime, medical laboratory technologists and scientists who wish to pursue research in reproductive medicine using these new technologies will have to go outside Canada or practice on non-humans.

The Summit's organizing committee concluded that there is a global need for an ongoing forum for the discussion of the ethics of human genome editing. Even though each jurisdiction will decide how to proceed with their different regulatory frameworks, "the human genome is shared among all nations."[1] Even though in Canada we are not currently participating directly, we will no doubt all be affected by how this brave new world unfolds. J

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Special to *CJMLS*

A call to strengthen current policies and laws

THE STATE OF **Whistleblowing**

Whistleblowing is a term applied to a situation where an employee raises concerns about unsafe, unethical or illegal practices at work. In the context of health care organizations and medical laboratory settings, whistleblowing is especially important as a means of addressing quality and safety issues. At present there are a variety of procedures in place within Canadian laboratories for employees to raise concerns which may affect patients, the public or laboratory staff.

In addition, there are multifaceted whistleblower laws at both the federal and provincial level that cover employees in health care organizations. Federal law has affected all jurisdictions in the public

Experts agree that whistleblowing is a highly controversial topic, one that tends to bring out dichotomies, distinctions and labels. It's been noted that binary distinctions, such as hero/villain, loyal/disloyal or warranted/unwarranted, are essentially unhelpful and disguise the complexity or ambiguity that is typically involved in whistleblowing situations.

and private sectors since September 15, 2004, with section 425.1 of the Criminal Code. Essentially, this part of the Code prohibits employers from retaliating or threatening to take action against employees who provide information to law enforcement officials. Meanwhile, the *Public Servants Disclosure Protection Act* has protected whistleblowers in the federal public sector since April 15, 2007.

Most provinces have their own laws to safeguard those who report wrongdoing in the workplace. For example, since April 2, 2007, Manitoba's *Public Interest Disclosure (Whistleblower Protection) Act* has offered a mechanism for the disclosure of misconduct in the province's public service and health care system. Appropriately, the Act also includes provisions to protect employees who make a disclosure to their supervisor or designated officer or to the Ombudsman.

Still, legal experts have pointed out the limitations of Canada's current laws and the fact that we generally lag behind the United States and Britain in this area. Adam Chrobak, the Registrar of the College of Medical Laboratory Technologists of Manitoba (CMLTM), agrees that there are problems with the current system. "I think the government creates whistleblowing policies in good faith but there are many times when they are not implemented well," he says. "I hear from health care practitioners that they feel pressure or that they are afraid to report when they see something that they feel is wrong. They worry about retaliation, either from their coworkers or their employer."

Indeed, investigations across different professional groups highlight a discrepancy between whistleblowing policies in theory and how such arrangements work in practice. One possible reason for this is the widely held perception among health professionals that they will be victimized, ostracized or bullied if they raise legitimate concerns about the actions of colleagues or poor patient care. If whistleblowing is to be an effective part of any strategy for better patient care then laboratory workers need to know their concerns will be taken seriously, without fear of reprisal.

Chrobak explains that if a CMLTM member witnesses someone in the laboratory practicing unprofessionally or incompetently they can file a complaint through a formal procedure. As the Registrar, he reviews the complaint and the accused person has the opportunity to respond to the complaint. If the situation isn't resolved by this stage the next step is for the grievance to go through a complaints committee that will decide if an investigation is warranted or not. The recommendations of an investigation are binding on the member whose conduct is under review. For example, it could be that they must take a refresher course, or for more serious matters, that they must withdraw from the CMLTM.

"Many of the complaints that we get have to do with unprofessional practice, such as improperly following standard operating procedures," says Chrobak. Studies indicate that before coming to a decision on whether to begin a formal complaint process, employees usually find themselves trying to work out exactly what is happening. They will often engage in dialogue with colleagues and seek a second opinion. Other informal strategies may include the use of humour or sarcasm to signal discontent, or the use of "off the record" discussions with managers and coworkers.

Experts agree that whistleblowing is a highly controversial topic, one that tends to bring out dichotomies, distinctions and labels. It's been noted that binary distinctions, such as hero/villain, loyal/disloyal or warranted/unwarranted, are essentially unhelpful and disguise the complexity or ambiguity that is typically involved in whistleblowing situations. Such circumstances are often fraught with rival interpretations and always happen in a deeply cultural and highly situated organizational context.

A couple of years ago, a CMLTM member who was working in a Manitoba hospital reported a fairly serious breach of policy that

could have negatively impacted patient care. The nurses wanted to save time and resources so they were reusing patient identification bracelets. Patients were allowed to take their hospital identification home with them. They would then wear the same bracelet when they came back to the hospital rather than being issued a new one.

One CMLTM member ultimately refused to collect specimens from patients that didn't have daily issued identification. When the nurses and his supervisor refused to support his action, the lab technologist contacted Chrobak. In turn, Chrobak brought the issue to the attention of appropriate officials, such as Manitoba's Minister of Health and Deputy Minister of Health. It didn't take long for the unsafe practice at the hospital to be discontinued and for the policy of issuing daily identification to once again be followed. Chrobak points to the incident as a case when whistleblowing was successful in helping to ensure proper patient care and safety.

Eventually, Chrobak would like to see better whistleblowing and complaint procedures for both laboratory employees and the general public. "We get complaints from the general public regarding laboratory assistants," he says. "These concerns are usually regarding how they have drawn a patient's blood or collected a specimen." Chrobak acknowledges that there isn't much action that can be taken in these circumstances because the CMLTM doesn't regulate laboratory assistants, only technologists.

He considers this a weakness in the current system and thinks it would be more effective if both professions were regulated in a more unified fashion. "There is a weakness in the whole system where the general public has no efficient way of filing a complaint and they generally must deal with the individual lab," Chrobak explains.

Meanwhile, establishing the right organizational environments within Canada's laboratories where voices can be heard and divergent narratives can be acknowledged remains the elusive goal. The objective of each laboratory should be to create an appropriate environment, one in which effective action aimed at better and safer patient care can be put in place. ■

Position Statments

The CSMLS Board of Directors are currently working on a Position Statement regarding Whistleblowing, specific to the medical laboratory professional.

To view and download all CSMLS Position Statements, visit csmls.org under the About Us tab.

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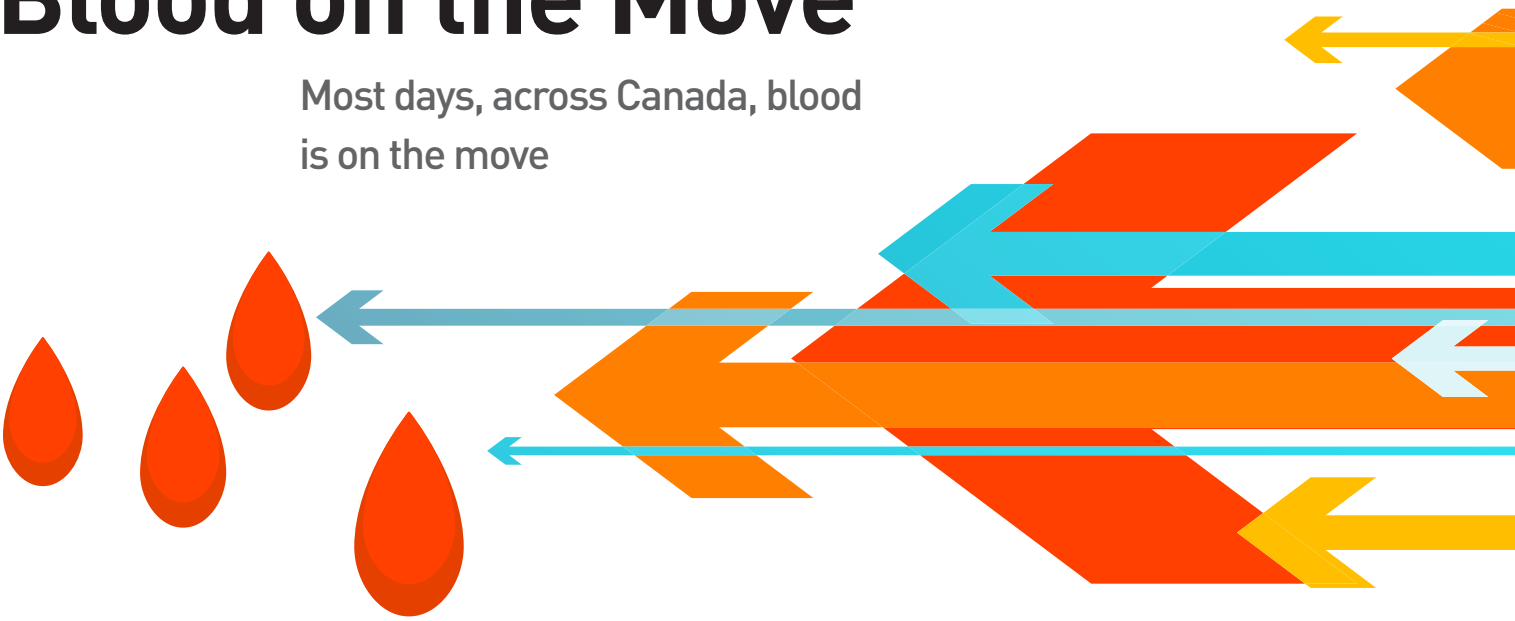
JACQUELINE CHARTIER
Special to *CJMLS*

Blood on the Move

Most days, across Canada, blood is on the move



It's expected that our population will need nearly a million units of donated red blood cells this year. It's undeniably gratifying to be a link in the lifesaving supply chain, as any donor or transfusion specialist will probably tell you. But what happens when the blood supply is critically low and not every patient can quickly get the components they need? How does the health care team make challenging ethical decisions?

Most of the time, the blood banks of hospitals across Canada are sufficiently endowed. Canadian Blood Services[1] (or Héma-Québec, in that province), which manages the collection and supply of blood, is in daily contact with hospitals and regulatory health authorities across the country to review their inventory levels and resupply needs. "We move inventory almost every weekday," says Rick Trufinov, Director of the Supply Chain Operations Planning Group at Canadian Blood Services (CBS). "We're constantly trying to make sure that things are level-loaded and we're not skewing toward shortage anywhere."

Transfusion labs make inventory requests based on what they have in stock and what cases are coming up, such as a full-term pregnant mother with a rare blood type. No hospital wants to find itself short on blood in a crisis. But neither would it be ethical to overstock on products that will expire before they're used, or to deprive patients at other hospitals. It's a daily balancing act, says Shelley Solomon, an MLT at Mount Sinai Hospital's Blood Transfusion Services department in Toronto. "We have a level which we're supposed to keep the blood at, but sometimes we might ask for a bit more, because we don't want to run out in an emergency. When you're working by yourself [at night], the last thing you want to see is that the bank's empty."

No one can predict what tomorrow will bring. Despite its best efforts, a hospital's blood bank may prove inadequate. In 2014, the blood transfusion laboratory at Toronto's University Health Network (UHN) was left scrambling when two patients with the same rare IgA deficiency both needed blood on-hand for unexpected surgery. Since just one in 700 blood donors shares this rare deficiency, CBS was unable to deliver compatible blood in time.

In the end, the UHN blood transfusion team and CBS worked together to prepare "washed" blood – the lab removed most of the IgA protein from regular donor units. Often, though, hospitals in busy urban centres have a special advantage when they run low without notice: they can do a little red-cell swapping, instead of waiting for a resupply from CBS. "We are fortunate to have neighbouring hospitals around us, that have even bigger supplies than we do, as a resource," says Solomon. It works both ways. "If we see something getting close to expiry, we can always hand it off to a trauma centre that can use it quickly, instead of it dying on our shelves."

That swapping strategy won't work everywhere. For Queen Elizabeth Hospital on Prince Edward Island, the next-closest hospital is in Moncton, three hours away. The nearest CBS blood bank is five hours away. "We've had trauma patients where we've had to wait for more blood to arrive, where the

bank is depleted," says Georgette Turner, Chief Technologist at the PEI Transfusion Service Lab. "Our biggest concern is always a storm and how we'd get the shipment here. We're more concerned about the logistics of transportation than shortages."

Fortunately, Turner has a procedure to follow: If she observes that inventory is running low, she immediately puts in an order for more. Outside regular delivery hours, a medical taxi is set up to make the drive. Blood products can also be flown in by Air Canada if timing is critical. "CBS makes every effort to get it to us," Turner says. "We've never had to say no to someone [in need of transfusion]."

What if the blood shortage is national and there isn't enough product available anywhere in Canada to redistribute where it's needed? "We're normally in a favourable inventory position," says Rick Prinzen, Chief Supply Chain Officer, "but there are rare occasions where the national inventory has dropped to levels that are less than desirable." In January of this year, CBS declared an Amber Phase for platelet inventory levels. An Amber Phase is called when the blood component supply is not high enough to meet all routine patient needs; a Red Phase means it's insufficient even for patients who need non-elective transfusions.

Canada has never reached a Red Phase which would likely be triggered by a combination of misfortunes such as labour strikes, pandemics, extreme weather, and a catastrophic failure in the supply chain. "Typically, it's not going to be just one thing," says Trufinov. In the case of January's Amber Phase, blood donations had fallen off because of the New Year's holiday weekend, while demand unexpectedly rose.

That Amber Phase lasted just 36 hours. "That reflects the effectiveness of all hospitals taking similar steps to manage a supply," notes Prinzen. "It was quite effective to get us through that low-inventory period."

All hospitals and regulatory health authorities must have an emergency blood management committee, with reps from several departments, including an MLT in the transfusion service lab who can report on the current blood inventory and discuss what options are available. In the case of an Amber or Red Phase, these committees will ensure their facilities are adhering to a national management plan[2]. That way, every hospital is handling the shortage the same way, making the same clinical decisions that have been carefully worked out ahead of the crisis.

"It's that whole concept of trying to do more equitable distribution of a national resource," says Dr. Susan Nahirniak, who chairs the Canadian Society for Transfusion Medicine's National Blood Management Emergency Committee, and has worked on the national plan. "It makes everybody treat their patients and their inventory the same."

For example, during an Amber Phase, the national plan dictates that hospitals cancel elective surgeries and adjust their optimal inventory levels. Units may be split to benefit more patients, or even used past their expiry if it's medically justified.

> No one can predict what tomorrow will bring. Despite its best efforts, a hospital's blood bank may prove inadequate.

During a Red Phase, when resources are strictly rationed, hospitals with massively bleeding patients have a triage tool[3] to guide complex decision-making over 'who gets what first'.

"This is what I go through on a fairly regular basis as a transfusion medicine physician," says Nahirniak, who practises in Edmonton. She recalls trying to help a patient on ECMO (cardiac/respiratory life support). "We couldn't get control of the bleeding. It was just continual request for product after product. We weren't in Amber Phase, but we were not with a robust inventory here locally." If she continued transfusions, she'd be putting other patients in jeopardy. Nahirniak was obliged to gather the patient's medical team, and together they assessed the likelihood of survival with a good outcome[4].

This demonstrates the importance of having a framework to follow during a potential Red Phase blood shortage, one that reflects careful thought, and extensive consultations with all stakeholders. In a country-wide crisis, no one, including MLTs, would be forced to make weighty ethical decisions alone.

Nahirniak would like to see improved awareness that the national plan exists. After every simulation or real-life shortage situation, her advisory

committee conducts a review and revises the plan. "In our platelet Amber Phase in January, we identified some problems with communication. There's still some misunderstanding of what the plan is trying to achieve and what the parameters are in there," she says. She's concerned, for instance, that technologists who aren't very familiar with the protocols might be uncomfortable issuing expired platelets. "That has caused some angst with MLTs in the past."

A strong, communicative team makes a difference. Although PEI's Turner has never had to apply the Red Phase framework, she's confident she and her colleagues would follow it closely. "Our medical director would have a good handle on it, and we have good communication here between technologists and the medical director," she says. "I would have absolutely no concerns."

Nahirniak's group, meanwhile, is continuing to lead workshops and simulation activities. "We need that awareness so that the plan can happen seamlessly," she says. "Sometimes those lessons learned, when you're in those shortage situations, it doesn't connect. If we can get better understanding, I think we'll be more successful in a potential or true shortage."

From widespread education about a national management plan, to ongoing discussions among health care team members, to regular dialogue between hospital sites and CBS locations, it's clear that communication puts every stakeholder on the same page. Ultimately, it is how we'll all be protected in the event of a nation-wide blood crisis. ■

LISA BENDALL
Health Writer
Special to CJMLS

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- [3]National Advisory Committee on Blood & Blood Products, Emergency Framework for Rationing of Blood for Massively Bleeding Patients during a Red Phase of a Blood Shortage www.nacblood.ca/resources/shortages-plan/emergency-framework-final.pdf
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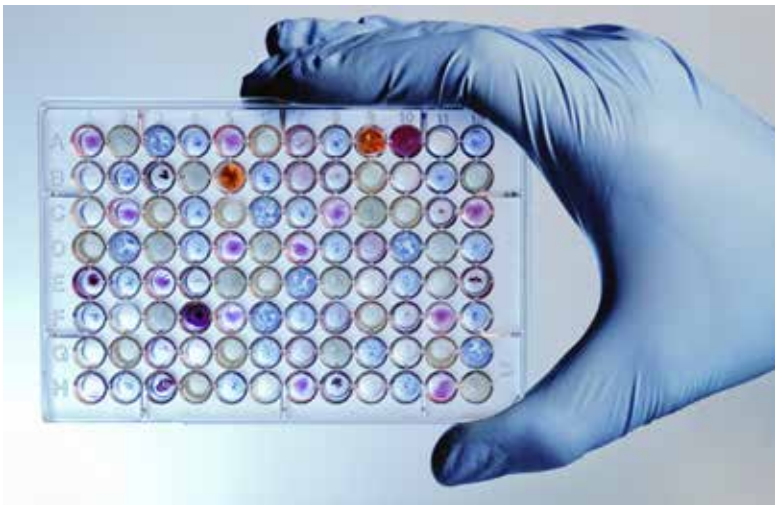
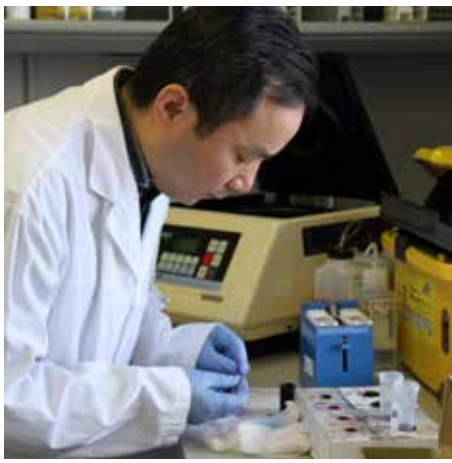
SOCIETY NEWS





CSMLS Code of Ethics

The Canadian Society for Medical Laboratory Science (CSMLS) has developed a Code of Ethics in consultation with its members. The Code 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 (MLPs), and to provide a framework during professional and personal self-evaluation.

The ethical principles contained herein are not listed in order of importance, but rather, should be considered in relation to each other during their application within situations involving ethical dilemmas.

MLPs shall practise in compliance with all current provincial and federal legislation for the protection and integrity of patients and their specimens, colleagues, health care providers, society, the environment and one's self. Within this practice, on a fundamental level, they will conduct themselves in a manner that is conscientious, compassionate, honest and equitable.

MLPs shall uphold the vision of the CSMLS Code of Ethics by adhering to the following principles of ethical conduct, as well as the underlying concepts.

Safe Practices

1.1 Practise only those disciplines within the medical laboratory profession for which CSMLS certification has been achieved.

1.2 Practise only those procedures for which qualification has been achieved or officially delegated by an appropriate institutional authority, where the member has the current requisite knowledge, skills and judgment to ensure and demonstrate competence.

1.3 Recognize risk prone situations in order to minimize harm to patients, staff and self.

1.4 Utilize professional and institutional mechanisms to intervene when witness to unsafe, incompetent or unethical practices.

1.5 Assume responsibility for errors one has committed or observed and take immediate action to prevent or minimize associated harm.

1.6 Advocate for working environments that support safe, competent and ethical practices.

Confidentiality

2.1 Understand and comply with applicable privacy legislation and policies regarding the collection, use and disclosure of confidential information.

2.2 Preserve and protect the confidentiality of any information, either medical or personal, acquired through professional contact (in person, through collegial conversations, via medical records etc.) to safeguard patients.

2.3 Abstain from using confidential information to the detriment of a patient, or with direct or indirect intent to benefit oneself or another person.

2.4 Access information relevant only to the professional task being performed.

2.5 Communicate and release information only with written or formal authorization, or where so ordered or expressly authorized by law.

2.6 Recognize and disclose conflicts of interest and resolve them in a manner which maintains the integrity of personal health information and protects the best interest of patient care.

Professional Development

3.1 Reflect on one's fitness to practise and expand one's knowledge, skills, judgments and attitudes through continued professional development.

3.2 Contribute to the development of the profession by sharing one's knowledge and experience.

3.3 Participate in interprofessional collaborative and educational processes, and the development of partnerships which contribute to positive patient outcomes.

3.4 Contribute to the advancement of the profession by:

- improving the body of knowledge,
- adopting scientific advances that benefit the patient, and
- maintaining high standards of practice and education.

Accountability

4.1 Be responsible first to the patient, then to society and the environment for safe and lawful practice and the sustainable use of resources.

4.2 Advocate one's role as a leader in the promotion of health and delivery of quality care.

4.3 Be responsible for the quality, integrity and reliability of the laboratory services one provides.

4.4 Ensure organizational consent processes are followed, including:

- Patients have the right to be informed
- Patients have the right to refuse or withdraw from procedures

Behaviour and Attitude

5.1 Provide service with dignity and respect to all, regardless of race, religion, sexual orientation, sex, gender identity, age, health status, or mental or physical disability.

5.2 Prioritize one's work to ensure that each patient receives optimum care.

5.3 Encourage the trust and confidence of the public through high standards of professional competence, conduct and deportment.

5.4 Be reasonably accessible within the confines of your duties.

5.5 Collaborate with patients, colleagues and other healthcare providers to provide effective patient care.

➡ *To download the entire Code of Ethics and supporting documents, please visit csmls.org under the About Us tab.*

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Canadian Society for Medical Laboratory Science
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CSMLS Mentorship Program Now Available

CSMLS is piloting a **Mentorship Program** designed to pair an experienced professional with an individual new to the profession or the country to provide guidance, expertise and advice.

Why Participate:

Participants can expect a number of personal and professional benefits, including:

- Preparation for, and assistance with job searching (resume and interviewing skills)
- Advice on integrating into the workforce
- Career advancement/development advice
- Learn effective workplace communication
- Inspire innovative ideas and gain a fresh perspective on your own career
- Personal satisfaction by doing something good for someone else

How does it Work

The online MentorCity match tool allows participants to find a relationship suited to their specific professional needs based on a variety of considerations.

Each mentoring relationship will last for a period of four months with a minimum of 16 total hours of mentoring. You can choose to interact online, by telephone or in person – whatever is convenient and effective for you.

Getting started is as easy as 1-2-3...

1. Visit ***mentor.csmls.org*** for more information.
2. Watch an orientation presentation.
3. Register online and start searching for a suitable match.

Sign up now - Participation is free during the pilot phase

mentor.csmls.org

POSITION STATEMENTS

CSMLS members can turn to the Society for insight and opinions of industry issues in the form of the CSMLS position statements. The Board of Directors creates these statements as an outward position that addresses industry issues that may be facing members while working in medical laboratory sciences.

The Board of Directors are pleased to release the following revised position statements:

- Human Resource Allocation for Medical Laboratories
- Fragmentation of Competency Profile
- Quality Worklife

The CSMLS position statements are useful resources for members working in the field. Knowing where the Society stands on specific topics can help guide them in their career.

All position statements are available to download from csmls.org under the *About Us* tab.

In Memoriam

On January 25, 2016, Renée Brunelle passed away in Montreal, QC. Renée worked in Hematology at the Jewish General Hospital, Hôtel-Dieu de Paris and Verdun Hospital between 1957 and 1996. Through her career she was engaged with the medical laboratory community as she was a Director of the CSMLS, then the CSLT, from 1974–1979.

Professional Recognition Programs Participants

April 1, 2015 to March 31, 2016

Congratulations to the following members:

Certificate of Continuing Professional Studies (CPS)

Medical Laboratory Quality Management
Jean-Sébastien Pellan

Clinical Chemistry and Immunology
Yu-Wei Roy Chen

Technology Management
Pierre André Noël

Knowledge Certificates

Certificate in Quality Systems for the Clinical Laboratory
Andrea Castonguay Stoll

Professional Enhancement Program (PEP)

Heba Abukhadra
Danielle Bellamy
Lhevinne Ciurcovich
Michael Jean David
Hilda Gaal
Linda Gray
Eric Hoiland
Melissa King
Janelle Levesque
Jalil Nasiri
Pierre André Noël
Melissa Lee Peet
Melissa Sereda
John Soltys

Details on CSMLS Professional Recognition Programs are available at csmls.org under the *Professional Development* tab.

Lobby Day 2016

As part of an ongoing effort to advocate for the medical laboratory profession, CSMLS took its message to Ottawa for the annual Lobby Day on April 19, 2016.

CSMLS recognizes the need to consistently foster our government relations to inform political decision-makers about the profession and this effort is paying off. With every annual visit, CSMLS and the medical laboratory community are becoming more familiar and recognizable to MPs.

Entering 2016, CSMLS is faced with lobbying a new government with many new faces on the Hill. In addition to highlighting the vital role medical laboratory professionals play in Canada's health care system, the team discussed the looming shortage of medical laboratory professionals and the strategies we would support to address the shortages. These strategies include:

- Increasing the number of new graduates by addressing the shortage of clinical placements.
- Better integration of internationally educated lab professionals into the Canadian workforce through long-term and sustainable funding for bridging programs.
- Including MLTs in the existing Canada Student Loans relief program to recruit MLTs to rural and remote communities.

CSMLS remains committed to informing both federal and provincial politicians that will bring our issues to the forefront of the government's agenda.

National Medical Laboratory Week 2016: This is only the beginning…

From April 24 to 30, 2016, medical laboratory professionals across the country celebrated National Medical Laboratory Week. The annually dedicated week is not only a chance to celebrate each other's hard work, but an opportunity to educate the public about the role the lab plays in health care.

The theme of the campaign, "This is only the beginning…" featured a photograph of common sample containers, typically the only interaction the public has with the lab. The website information went beyond the sample to show what happens between giving a sample and getting results from the doctor.

An interactive website walked users through each discipline of the laboratory, what goes into preparing a sample and various tests that are performed in the lab – giving the public an inside look at what happens to their samples and how a diagnosis is determined.

With the help of your actions and the actions of lab professionals across the country, we were able to make a large impact. Thank you to all of the members and partners who participated in this year's campaign and helped raise awareness of the medical laboratory profession.

Cape Breton Regional Hosptial, Sydney, NS.

Kerry Hagan. Bluewater Health, Sarnia ON.

Celebrating at Hamilton Health Sciences, Hamilton, ON.


Cornwall Community Hospital, Cornwall , ON.

366 orders placed for promotional materials

2,352 downloads from the free Celebration Toolkit

6,238 views of the Medlabprofessionals.ca website

An audience of **312,921** reached through social media

Simulation and Clinical Placement Forum

On Saturday April 23, 2016 over 80 professionals from the medical laboratory community gathered in Toronto for a unique event. The Simulation and Clinical Placement Forum was hosted by CSMLS to bring together educators, graduates, regulators and stakeholders from across the country to discuss the current and future states of clinical placements and the use of simulated learning.

Canada is facing a serious shortage of medical laboratory technologists (MLTs). About half of all MLTs will be eligible to retire in the next ten years. These shortages are already being felt in our rural and remote communities and the impending retirements will exacerbate this issue. Addressing this issue and looking to simulation as a possible solution is key for the profession.

During the forum, there was a review of the data collected from the CSMLS Educator Clinical Placement and Simulation Survey conducted in 2015 and the Recent Graduate Clinical Placement Survey.

One keynote speaker, Dr. Pam Jeffries PhD, RN, FAAN, ANEF is the Dean and Professor at George Washington University School of Nursing, and past- president of the Society for Simulation in Healthcare. She presented findings from her research in nursing education which offers strong evidence supporting the use of simulation in health care education.

The study found that up to 50% of clinical hours can be substituted as simulation without any difference in the quality of the education outcome. The findings also emphasized that successful simulation programs hinge on a team of dedicated educators, those well-trained in the best practices of theory-based simulation and debriefing methods.

The forum also welcomed Dr. Brian Hodges MD, PhD, FRCPC, and Executive Vice-President Education at the Michener Institute of Education at UHN, the Richard and Elizabeth Currie Chair in Health Professions Education Research, and a Professor in the Faculty of Medicine and the Faculty of Education at the University of Toronto. Dr. Hodges' work with simulation has made him an advocate for its use in teaching. He gave examples of simulation success with use of hybrid-simulation, when real life (actors) and simulation (technology) are combined for a fully immersive educational experience.

While both Drs. Hodges and Jeffries spoke on the benefits of using simulation in health care education, Dr. Tim Willet of Sim-one, a not-for-profit organization, spoke about the need to advocate for the advancement of simulation to improve health care education, patient safety and quality improvement.

The participants also heard from a panel of graduates of medical laboratory science programs, a panel of educators and presenters from three health education programs using simulation. These presentations gave insight into how students are learning in and out of the classroom today.

The outcome of the discussions from this event will be gathered and released as a CSMLS whitepaper and will further support research being conducted on the use of simulation in medical laboratory science education. The event itself is the first phase of this long-term commitment to truly understand and offer solutions to the concerns over clinical placement quality and availability. The next phase will look at understanding these concerns from the employers' point of view.

Graduate panel

Dr. Pam Jeffries

CSMLS – THE NATIONAL VOICE OF CANADA'S MEDICAL LABORATORY PROFESSION

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:

APRIL

Leaders Roundtable on Immigration – Canadian Immigration Summit
OTTAWA, ON

Canadian Network of Agencies for Regulation (CNAR)
TELECONFERENCES

Allied Health Program Accreditation Working Group
TELECONFERENCE

Canadian Society of Association Executives (CSAE) Competency Taskforce
TORONTO, ON

Canadian Alliance of Medical Laboratory Professional Regulators (CAMLPR)
TORONTO, ON

Simulation and Clinical Placement Forum
TORONTO, ON

HealthForce Ontario Workshop
TORONTO, ON

Michener Bridging Program
TORONTO, ON

MAY

Canadian Association of Allied Health Programs (CAAHP) Annual Meeting
MONTREAL, QC

Health Profession Education Network (HPEN)
OTTAWA, ON

Employment and Social Development Canada (ESDC) and Colleges and Institutes Canada (CICan) Consultation
QUEBEC CITY, QC

JUNE

Canadian Association of Medical Laboratory Educators (CAMLE), Annual Meeting
CHARLOTTETOWN, PE

Research Canada Annual General Meeting
OTTAWA, ON

Health Action Lobby (HEAL)
TELECONFERENCE

New Brunswick Community College (NBCC), School Visit
SAINT JOHN, NB

Heads of Medical Laboratories Meeting
TELECONFERENCE

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CSMLS offers education designed to fit YOUR learning needs!

Continuing education opportunities exist outside of structured courses and are achievable through CSMLS with a minimal time commitment.

- NEW on-demand webinars (approx. 1 hour to complete)
  Current topics include:
  - Introduction to Flow Cytometry
  - Quality Management Standards and Accreditation
  - *Toxoplasma gondii:* The Most Successful Parasite That Ever Lived
  - Genetics and Society (coming soon)
  - Fundamentals of Molecular Genetics (coming soon)
  - Select LABCON presentations will be available as webinars in Fall 2016

- Credit for reading the scientific articles in the Spring and Fall issues of the CJMLS and taking a short quiz online (approx. 1/2 - 1 hour to complete)

learn.csmls.org