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THALASSEMIA: A CENTENNIAL COMMEMORATION

Joining Forces: Improving Patient Care through Interprofessional Collaboration

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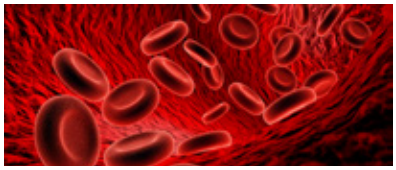

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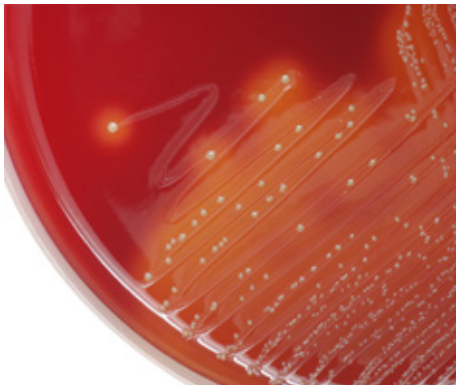

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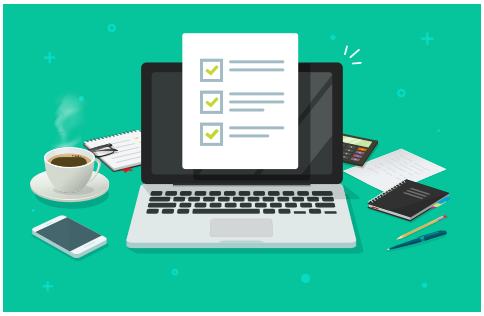

SOCIETY NEWS

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Change Keeps Coming

Christine Nielsen
CHIEF EXECUTIVE OFFICER

One of the great things you get to do as an association is public relations. We create content every day for our members. Did you happen to see that the PCR episode of "In the Lab" made it to the "wrong" side of Facebook? With one simple video explaining how PCR works, we saw firsthand how science — and vaccines, and COVID-19 in particular — have been politicized through social media. Those science-denying comments made me realize just how much change we've experienced over the past few years. Sure, this isn't exactly a positive example, but I've seen so much good change, too. I won't let the trolls get the better of me!

How you learn and connect is shifting because what you need is changing. I'm seeing members seek networking opportunities again, leaning on the strengths in our community to get through our shortage of both qualified staff and lab supplies. CSMLS is responding with even more options for live learning in 2024. Think less solitary and more local learning opportunities. (And for our introverted or time-pressured friends, on-demand webinars aren't going anywhere!)

Even our certification has changed, all in an effort to increase the number of qualified professionals in Canada. We recently extended the CSMLS MLA Certification Exam eligibility to allow more qualified medical laboratory assistants (MLAs) to get to exam. As more and more people are interested in coming to Canada and employers realize the need to leverage qualified offshore talent, we added another staff member to help respond to the rise in Prior Learning Assessment applications and inquiries.

The political landscape is changing, too. While government talks will always be slow, we're still working with multiple governments and regulators towards regulation of MLAs. Governments are seeing the value of ensuring quality patient care through a regulated laboratory workforce, and we will always step up to support that process.

Maybe that's the lesson in my reflection: positive change isn't an accident. It takes planning, intentionality, and time. As your national professional society, we commit to changing with the times, keeping you as our number one motivator.

The Only Constant Is Change

Michele Sykes
CSMLS
PRESIDENT

Have you ever been working frantically to care for patients when you are alerted to yet another "new" thing? Then reminded by a colleague that "the only constant is change?" What's more, these changes in your professional life always seem to come when you are dealing with something new in your personal life.

As frustrating as it can be in the moment, this constant "new" brings energy to our profession. A new problem to overcome, a new skill to learn, a new relationship to form: all of it brings us together as a community as we showcase our flexibility, adaptability, resilience, and perseverance.

At the CSMLS Board of Directors, we're navigating some "new" ourselves. Last year, the CSMLS membership approved a change to the start of Board terms. We're bringing new Directors into the fold much earlier after their election, capitalizing on their keen energy and fresh perspectives.

This also meant a change to our Board leadership terms, and so I'll be welcoming our new President, Allie Shields, in July. Allie will be the first medical laboratory assistant to serve as President.

In my last months as President, I'm inspired by the new ways we can reinvent ourselves as an organization as we face new challenges in this ever-changing field. With a strong Board and an incredible staff, I am confident that the CSMLS will be able to meet the dynamic needs of our members now and in the future.

Change is definitely a constant in our profession. There are certainly times where that reality can feel exhausting. Maybe it's my phase of life, or maybe it's just that it's spring, but right now I'm choosing to feel invigorated by it. Bring it on.

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A SAFETY PERSPECTIVE: Working Short-Staffed

During and after the pandemic, many issues have led to a more difficult situation as it relates to adequate staffing in many workplaces. According to an article from the Canadian Centre for Occupational Health and Safety, this is a wide-ranging trend: "A recent employment report from Statistics Canada shows that the unemployment rate across all age groups has decreased. However, it also reveals that there are fewer workers over 55 either working or looking for work."[1] In many workplaces, employees were faced with multiple challenges, ranging from layoffs to reduced hours, and a variety of new workplace requirements related to COVID-19.

As employees switched to new roles over the last several years, it has become increasingly hard to backfill positions.[2]

You and your colleagues likely feel this impact in the lab and throughout your organizations as part of the burdened health care system in Canada. The CSMLS has repeatedly voiced its concerns regarding the health human resource (HHR) issue that directly impacts the lab in terms of an aging workforce planning for retirement and a lack of clinical placements leading to a shortage of workforce-ready medical lab professionals.[3] You and your colleagues are a focal point of the difficult situation facing the entire health care system, and a great concern is that this comes at a time when more and more is needed from the health care system to keep Canadians healthy and well.

Meet the changing needs of the organization

In the current workforce climate, it is important that management engage with employees to try and address any health and safety issues arising from workforce shortages. Management has a responsibility to implement an Occupational Health and Safety Management System (OHSMS)[4] that meets the changing needs of the organization. You can play a role in improving the situation by ensuring that you are adhering to the elements of the OHSMS. That will reduce the risk of incidents happening to you and your colleagues. Your education, training, and experience in the lab reduce the likelihood of incidents compared to new employees. Because of this, you may want to be involved in training new or redeployed staff and have the opportunity to help others be successful in the lab. Ensure that management is aware that training others takes additional time in your workday with the outcome that all new employees have a positive, enriching, and safe transition into the lab. It may be helpful to involve representatives from a joint management-worker safety committee to explore long-term options for improved workplace design, automated equipment, and provision of furniture and equipment designed with a focus on ergonomics, as improvements in these areas will benefit all employees.

Risk for stress, anxiety, and burnout

Maintaining psychological safety is the responsibility of management towards all employees. Psychological safety can be improved in some ways to mitigate the downside of working short:

- promote well-being through regular and meaningful conversations;
- strive for a respectful workplace where equity, diversity, inclusivity, and accessibility are promoted;
- nurture civility and mutual understanding;
- consider new ideas to address issues around working short;
- encourage disconnection from work; and
- continue to implement the OHSMS to ensure current and new employees are provided the means to keep themselves and others safe and well.

When management expressly supports employee health and safety, they are in fact protecting their most valuable asset: you and your colleagues perform a critical support function in the lab that is a focal point of the entire health care system. ■

EOIN O'GRADY, PhD, CRSP
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ALWAYS OVERWHELMED?

Reset with the Self-Comfort Compass

In recent months, I have noticed a trend among health care professionals to whom I present information about mental health and well-being. "Rosina, I feel so overwhelmed!" is a frequent reply when I complete a check-in or ask how their week was.

The feeling of being overwhelmed is also one that is familiar to medical laboratory professionals. Within the past four years, you have dealt with challenges within health care systems, increased workload, staffing shortages, and, in some regions, political changes that have directly impacted your work. Consequently, it is natural that you may feel overwhelmed.

Feeling overwhelmed can include some or all of the following:

- mood changes — becoming angry, emotional, worried, or crying more easily;
- physical symptoms — headaches, upset stomach, muscle aches, jaw clenching;
- challenges with managing your mood — overreacting when you misplace a pen, for example;
- procrastinating — having trouble starting a task due to worry;
- trouble with sleep — having difficulty falling asleep or staying asleep;
- trouble with eating — eating more or less frequently;
- thoughts — increased worries or increased negative thoughts; and
- isolation or withdrawing — wanting to isolate from those within your social circles/friends/family.[1]

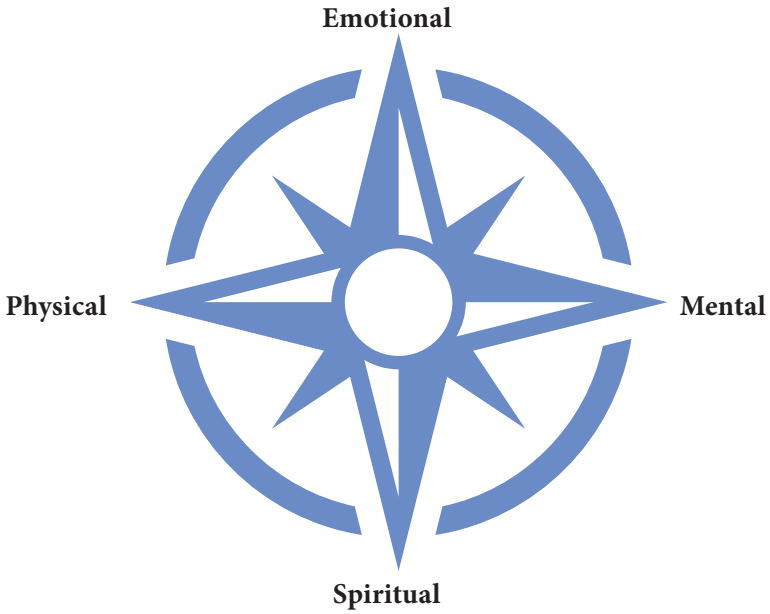
However, what if you experience being overwhelmed and have trouble managing it? The most common question I hear is, "How do I shut these feelings off? How can I make it stop?"

Our emotions, feelings, and behaviours cannot immediately be "turned off" like a light switch. If they could, I would be out of a job! Some of you may remember when BlackBerrys were quite popular, and for a reset, all you had to do was take out the battery and reinsert it. It definitely would be easier if we could do just that.

In the meantime, to address being overwhelmed, one concept I am developing is called the *Self-Comfort Compass*. When I think of a compass, I think of a tool that helps to steer you in a certain direction ahead — a clear path. If you feel like you have lost your way, a compass can help you reset and get you back on track.

The points of North, South, East, and West are replaced by Emotional, Spiritual, Mental, and Physical. These concepts are often discussed with the concept of self-care, so you may be wondering what self-comfort is. When you feel overwhelmed, the compass can help you reset your path and your emotional state. Let us examine each point individually and consider the question: *What would comfort me now?"*

Emotional: If you are feeling sad, upset, or have increased overwhelming emotions, consider what would bring you comfort in that moment. Many clinicians would immediately tell you to focus on your breathing because regulating your breath can help regulate your emotions. If you were to look at a clock with a second hand, slowly



If you experience overwhelming feelings on a daily basis, or if you would like more information, connect with the resources listed below or professional services to support your endeavours.

CSMLS Mental Health Toolkit
mentalhealth.csmls.org

Canadian Mental Health Commission of Canada
mhfa.ca/en/general-resources

If you notice consistent physical symptoms related to being overwhelmed, please consult your primary care provider.

breathe in for one to two seconds, and then try to slowly breathe out for a longer period (even three to five seconds). For others, focusing on a comforting song, a picture of a loved one, or a calming saying can go a long way. (Tip: these are items you could keep within your locker or desk. [2])

Spiritual: Consider what would provide comfort or a soothing feeling to your spirit. For some, this might take a faith-based perspective. However, it can also encompass what you value and how you integrate it. If you value time with your family and friends, the question might be: "When did I last spend time with them? Why don't I send them a text?" It might also be incorporating mindfulness or meditation to gain a clearer understanding of yourself. If you feel overwhelmed, ask yourself: "When I feel calm, what do I value? What do I prioritize?" Additionally, journaling during overwhelming times may be a great way to examine your spirit and values.[2]

Mental: This point is correlated with those overwhelming thoughts — the pessimism, the "what ifs?" and the overall rigidity of the thoughts. Consider one of the following cognitively-based strategies. Ask yourself: "On a scale of one to 10, how important is the situation right now? How important will it be in a week? Or a month?" If it feels very important, consider: "What can I do about it right now? Can I resolve the problem or return to it?" Or try to reframe the thought: "What is a more helpful thought in this situation?" For example, rather than saying: "Oh, this is the worst day ever and I am the worst lab tech in the world," a more helpful thought is, "Okay, today is very stressful and I am doing the best I can. I will take today an hour at a time." In saying this, you are acknowledging your stress without putting yourself down.

Physical: When we experience rigid thoughts that contribute to feeling overwhelmed, we often may feel stagnant in our bodies or our routines become less appealing. When you are feeling overwhelmed, try to check in with your body. Physically, how am I feeling? You may notice a clenched jaw, tight neck, or a headache. Moving your body, such as taking a walk or doing a gentle stretch, will go a long way to help release the tension. You may also want to incorporate gentle body movement regularly. Also, think about your last few meals: did you incorporate food that you enjoy and savour? Nutritional and nourishing meals can help in dealing with stress and overwhelming sensations.

I encourage you to keep the described compass and strategies above nearby and consider your own *Self-Comfort Compass*. Incorporate the question "What would comfort me?" when you experience feeling overwhelmed and consider what comes up for you. I also encourage you to look at the CSMLS Mental Health Toolkit (Individual) for further steps to manage feeling overwhelmed and your mental health.

ROSINA METE, PhD, MSc, RP
University Director and
Psychotherapist

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INTRODUCING THE LAB WISELY DATABASE COMMITTEE

Lab Wisely strives to enhance lab utilization and improve the work of medical laboratory professionals by reducing the amount of unnecessary tests ordered by clinicians. The initiative has been well received by the medical laboratory community, and it has inspired professionals to advocate for the optimal use of their labs. As part of this multidimensional project, the Lab Wisely Database committee was formed. Brandon Djukic, CSMLS Research Manager, explains the committee's purpose and how it benefits laboratory professionals.

What led to the idea of creating a Lab Wisely Database committee?

According to Choosing Wisely Canada (CWC),[1] 42% of all Choosing Wisely recommendations are relevant to or could impact the work of medical laboratory professionals (MLPs). There is an important need to reduce unnecessary testing in the health care industry. It is also crucial to stay up-to-date with the latest recommendations from CWC. To help MLPs with this, we have created a bilingual website that allows them to search for recommendations by discipline, specialty, relevance, keyword, or position in the testing cycle, such as orders and analysis. This committee aims to raise awareness of unnecessary testing and promote knowledge of preferred methods.

Who are the members of the committee?

The current members of the committee include: Valentin (Tino) Villatoro (CSMLS Director, Alberta, Northwest Territories, and Nunavut) as chair and John Soltys, Marci Campbell, Mario Hemens, and Sherri Wilson as advisors.

I represent CSMLS. My responsibility is

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to gather new recommendations and keep track of any changes to the existing ones. After that, I inform the chair and committee about the new findings. A meeting is then held to evaluate the relevance of the new findings to MLPs' work.

We have also sought technical expertise from Tiffany Clouston (CSMLS Director, Atlantic) for the evaluation of new CWC Medical Genetics recommendations. We have staff involved in this, too. Kartik Desai (CSMLS Web Developer) is responsible for updating the website, and Sierra Paprocki (CSMLS Executive Assistant to the CEO) helps organize the meetings.

How will the committee benefit and support medical laboratory professionals?

The committee is in charge of promoting awareness of unnecessary testing, reducing unnecessary lab work, and providing best practice information from experts on MLPs' job functions. Consequently, the committee assesses CWC recommendations to determine their impact on MLPs' testing. In this way, regular meetings ensure content stays current.

What has the committee achieved so far this year?

There are around 500 recommendations from CWC. This year, the committee reviewed 40 new recommendations, out of which 23 were found to be relevant or possibly relevant to our profession. The specialties covered by these recommendations were addiction medicine, medical biochemistry, medical genetics, orthopedics, pediatric emergency medicine, physical medicine and rehabilitation, and rheumatology.

What are the plans for the year ahead?

When new recommendations are published, we will review them to determine if they are relevant. If we find that some of the recommendations are relevant, we will update our database accordingly. In addition, we regularly reassess recommendations from previous years to ensure their continued relevance, as they may change over time due to improved information.

Dr. Amanda Van Spronsen, from the University of Alberta, led the creation of a second set of medical laboratory utilization recommendations. Keep your eyes open, as they will be launched by CSMLS soon!

BRANDON DJUKIC
PhD, BSc
Researcher, CSMLS

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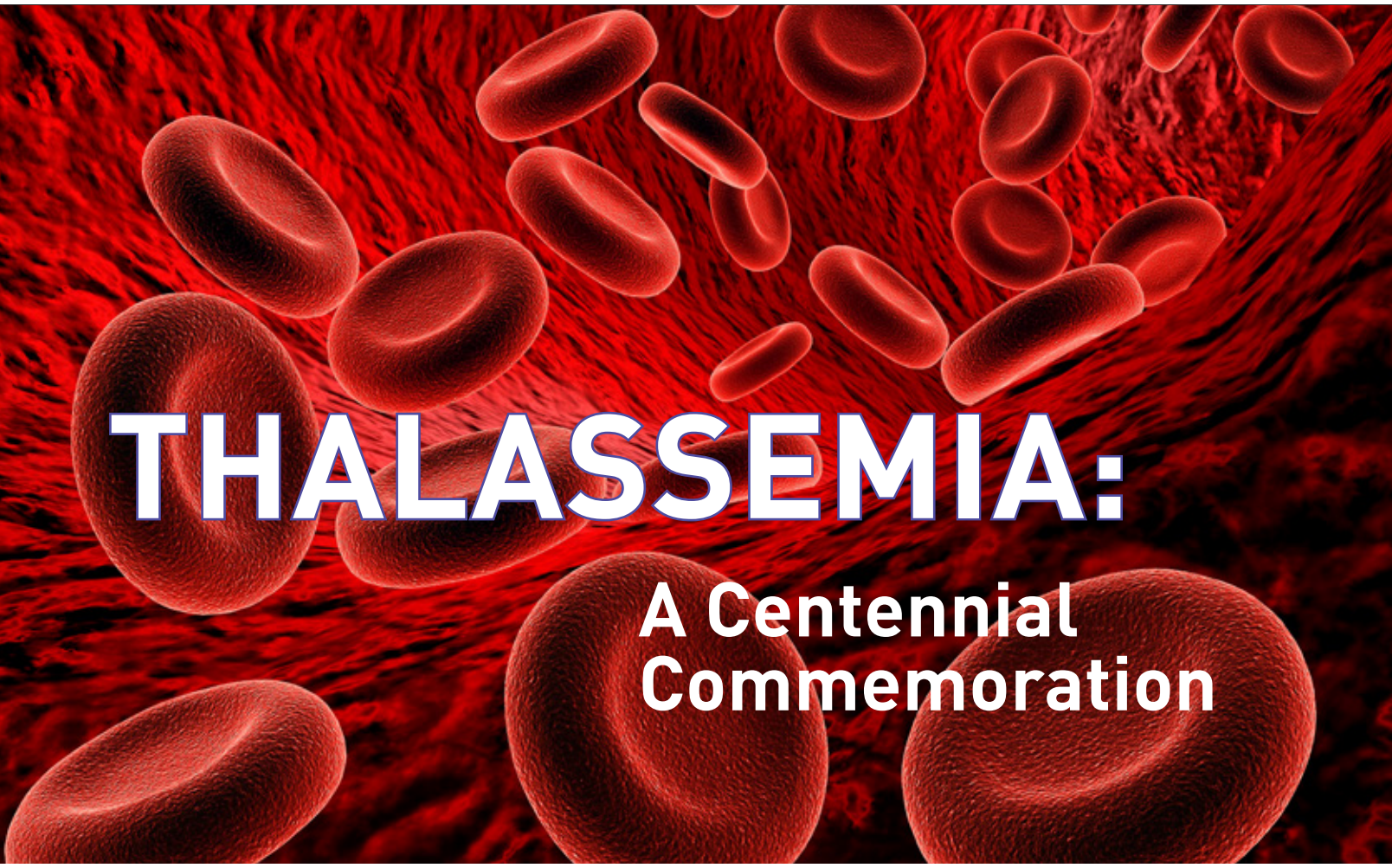

THALASSEMIA: A Centennial Commemoration

In 2025, we commemorate the identification of thalassemia, a disease affecting more than 300,000 people worldwide each year. Historically, this inherited hemoglobinopathy was associated with people living in the Mediterranean and other equatorial regions, but it has now been identified to varying degrees in patients around the globe.[1,2] Since the number of patients with thalassemia is growing each year, it has become essential for laboratories to identify possible cases and process samples for complex procedures regularly.

Named after the Greek primordial goddess of the sea, thalassemia was first identified in 1925 by Dr. Thomas Benton Cooley (see Figure 1). Dr. Cooley completed medical school at the University of Michigan in 1895 and worked as the lead physician of its Pasteur Institute from 1903 to 1905. He dedicated his career to pediatrics and served as the Assistant Chief of the Children's Bureau of the American Red Cross in France during World War I. After returning from France in 1921, he served as the head of pediatrics at the Children's Hospital of Michigan for over 20 years. During this time, he began investigating a form of childhood anemia, noting similarities in bone changes in four children of Italian and Greek heritage. In 1925, Dr. Cooley presented his findings to the American Pediatric Society and named this disorder "erythroblastic anemia," later renamed "Cooley's anemia."[3]

Figure 1. Dr. Thomas Benton Cooley

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The two major types of thalassemia are alpha (α) and beta (β); however, many additional thalassemia variants are being discovered through genetic testing. Normal adult hemoglobin A contains 2α and 2β globin chains, and the types of thalassemia determine which of the globin chains will be abnormal or absent. After a case of thalassemia is suspected by routine testing, further testing is required to measure the levels of normal and abnormal hemoglobin variants (see Table 1).[8] Once the thalassemia type is categorized, appropriate treatment and management strategies can be prescribed based on individual patient needs.

In normal patients, four alpha-globin genes are encoded on Chromosome 16: two copies of the *HBA1* gene and two copies of the *HBA2* gene. Missing copies of these four genes give rise to alpha-thalassemia subtypes (see Table 2). There are also 24 widely spaced genetic sequences surrounding the alpha-globin genes that support normal alpha-globin chain synthesis. Alterations of these supporting genes can give rise to rare cases of alpha-thalassemia in the presence of four normal alpha-globin gene copies. In addition, mutations of the *ATRX* gene have been found in cases of acquired alpha-thalassemia associated with myelodysplastic syndrome (MDS).[2,4]

In normal patients, two beta-globin genes are encoded on Chromosome 11. Small-scale point mutations or partial deletions of the *HBB* gene give rise to mild cases of beta-thalassemia; complete genetic deletions cause more severe beta-thalassemia variants (see Table 3).[2,4] Two copies of the delta-globin gene *HBD* are in close proximity to the beta-globin genes. In delta-beta thalassemia, genetic deletions extend beyond the beta-globin genes to include partial or complete deletion of the delta-globin genes (see Table 4).[5]

Thalassemia is most often detected on the routine hematology bench by running a complete blood count (CBC) and staining a peripheral smear. The red blood cells (RBCs) are evaluated by counting and sizing the cells, which also generates the hematocrit measurement, and the hemoglobin levels are measured by lysing all RBCs. These measured values are then used to calculate RBC indices, such as the mean corpuscular volume (MCV), mean corpuscular hemoglobin (MCH), and mean corpuscular hemoglobin concentration (MCHC). Hemoglobinopathies such as thalassemia usually display a low MCV with a close-to-normal MCHC value, which indicates small or fragmented RBCs that contain moderate amounts of (abnormally assembled) hemoglobin. In contrast, iron deficiency anemia will almost always display a low MCV along with a low MCHC, indicating small RBCs that contain low hemoglobin levels (see Table 5).[4]

Figure 2. Abnormal red blood cells

Such findings are confirmed by examining a peripheral smear to visualize the types and shapes of abnormal RBCs. Technologists will identify several abnormal RBC types depending on the type and severity of a patient's thalassemia (see Figure 2).

One of the positive aspects of thalassemia is that patients often display resistance to malaria. Since most patients with thalassemia live in tropical regions where *Anopheles* mosquitoes (see Figure 3) transmit *Plasmodium* parasites, thalassemia appears to be a human evolutionary survival mechanism passed down from generation to generation. Although the cellular mechanisms of malaria resistance are not fully understood, there is documented history of patients with thalassemia displaying resistance to malaria infection. In fact, patients can have thalassemia in conjunction with other hemoglobinopathies that also confer malaria resistance, such as Hemoglobin (Hgb) S, Hgb C, and Hgb E, which makes complete genetic profiling essential for the identification of abnormalities that may be displayed in the children of such patients.[6]

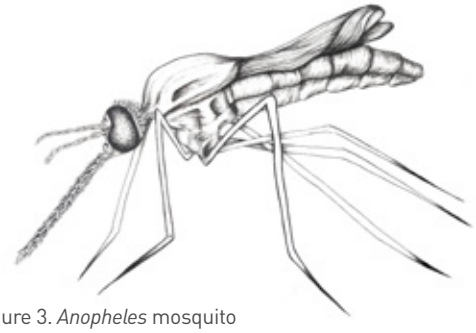


Figure 3. *Anopheles* mosquito

In parts of the world where malaria is not endemic, we most often see the disadvantages of having hemoglobinopathies such as thalassemia. Symptoms of thalassemia include anemia, fatigue, shortness of breath, jaundice, growth failure, and bone deformities. Treatments often involve receiving RBC transfusions and folate supplements. Patients who receive multiple transfusions regularly require iron chelation therapy to prevent systemic iron overload.[7]

After routine testing methods identify a suspected thalassemia case, more specialized testing is required for a complete diagnosis (see Table 6). Hemoglobin electrophoresis and high-performance liquid chromatography (HPLC) are used to measure and classify the normal and abnormal hemoglobin types in a patient's sample.[1,8] Genetic methods can also identify mutations of the patient's globin-producing genes to classify a patient's hemoglobinopathy further.

Thalassemia illustrates the need for expanding laboratory testing to meet the growing needs of diverse populations. As we look to the future, we can learn from past discoveries and refine our laboratory practice to include the most current techniques to provide optimal patient care. ■

Table 1: Normal and Variant Hemoglobin Types

Hemoglobin type	Globin chains	Normal adult levels
A	$\alpha_2\beta_2$	97%
A_2	$\alpha_2\delta_2$	2–3%
F	$\alpha_2\gamma_2$	<1%
Hgb H	β_4	N/A – Present in Adults with α-Thalassemia Intermedia
Hgb Bart's	γ_4	N/A – Present in Neonates with α-Thalassemia Intermedia and α-Thalassemia Major

Table 2: Alpha Thalassemia Genetic Subtypes

Thalassemia type	Genetic status	Symptom severity
Normal Phenotype	4 alpha gene copies	Asymptomatic
Alpha-Thalassemia Silent Carrier	3 alpha gene copies	Asymptomatic
Alpha-Thalassemia Minor Homozygous	2 alpha gene copies, both on one Chromosome 16	Mild Symptoms
Alpha-Thalassemia Minor Heterozygous	2 alpha gene copies, one on each Chromosome 16	Mild Symptoms
Alpha-Thalassemia Intermedia (Hemoglobin H Disease)	1 alpha gene copy	Moderate Symptoms
Alpha-Thalassemia Major (Hydrops Fetalis)	0 alpha gene copies	Incompatible with Life

Table 3: Beta Thalassemia Genetic Subtypes

Thalassemia type	Genetic status	Symptom severity
Normal Phenotype	2 complete beta gene copies	Asymptomatic
Beta-Thalassemia Minima (Silent Carrier)	1 small partial beta gene deletion	Mainly Asymptomatic
Beta-Thalassemia Minor (Trait)	1 beta gene copy is partially or completely deleted	Mild Symptoms
Beta-Thalassemia Intermedia Homozygous	1 beta gene copy is completely deleted with partial deletion of the second beta gene copy	Moderate Symptoms
Beta-Thalassemia Intermedia Heterozygous	2 beta gene copies are partially deleted	Moderate Symptoms
Beta-Thalassemia Major (Cooley's Anemia)	2 beta gene copies completely deleted	Severe Symptoms

Table 4: Delta-Beta Thalassemia Genetic Subtypes

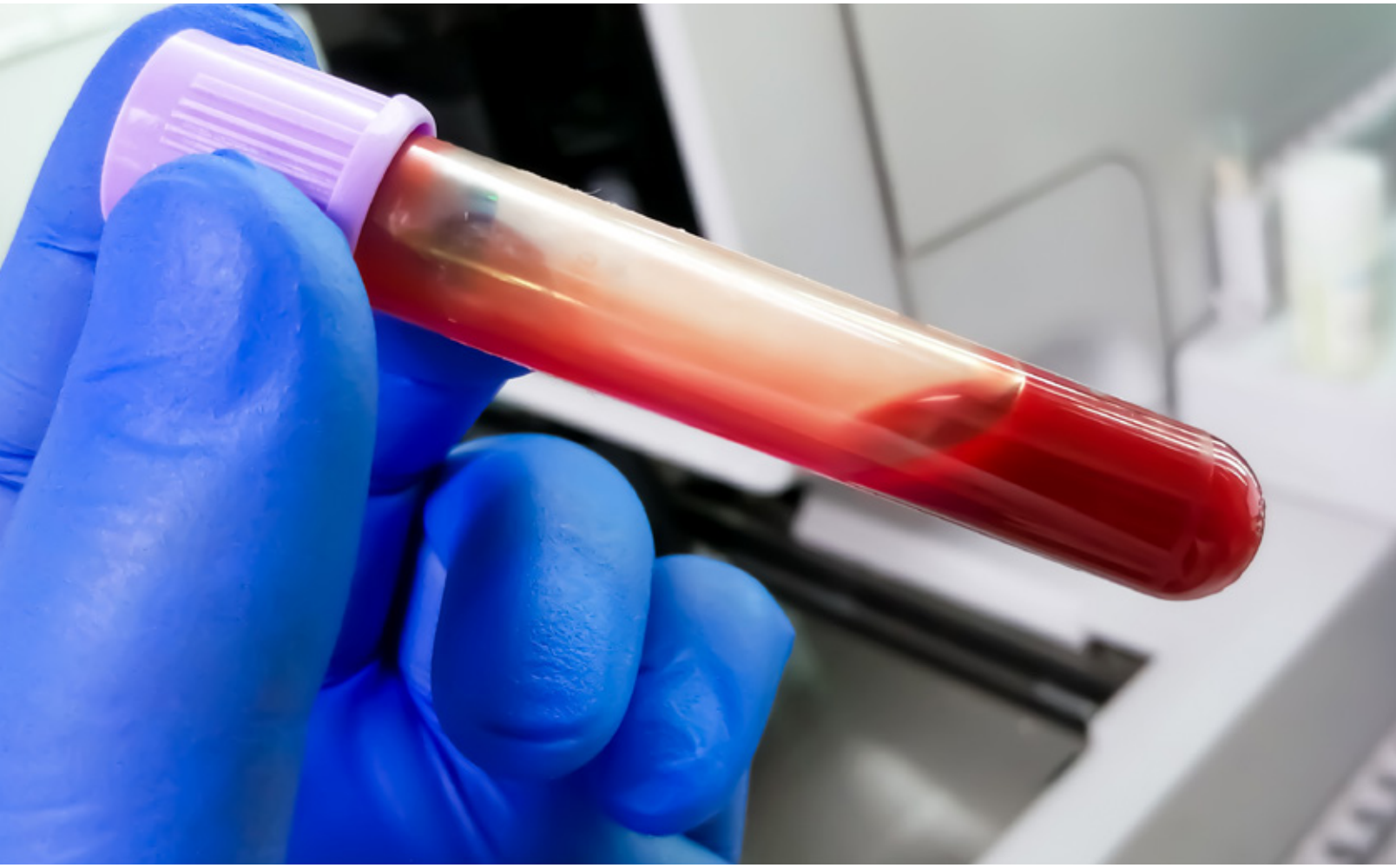
Thalassemia type	Genetic status	Symptom severity
Delta-Beta-Thalassemia Minor	1 normal copy of both delta and beta genes with complete deletion of the second copies	Moderate Symptoms
Delta-Beta-Thalassemia Intermedia	1 partially deleted copy of the delta and beta genes with complete deletion of the second copies	Moderate Symptoms
Delta-Beta-Thalassemia Major	2 delta and 2 beta genes completely deleted	Severe Symptoms. Only Hgb F can be produced throughout adult life

Table 5: Typical CBC Measurements Comparing Thalassemia and Iron Deficiency Anemia

CBC measurement	Iron deficiency	ß-thalassemia major
RBC ($x10^{12}$/L)	3.55	2.31
Hgb (g/L)	74	59
Hct (L/L)	0.245	0.160
MCV (fL)	69.0	68.0
MCH (pg)	20.8	25.3
MCHC (g/L)	**302**	**369**

Table 6: List of Confirmatory Tests Used to Diagnose Thalassemia

Procedure	Methodology
Complete Blood Count (CBC)	Counting and sizing RBCs, measuring hemoglobin levels, generating RBC indices
Blood Smear	Visual examination of abnormal RBC types
Capillary Electrophoresis	Separating Hgb fractions by electrophoretic mobility and quantify each fraction
High Performance Liquid Chromatography (HPLC)	Separating Hgb fractions with a net positive charge by adsorption and elution
Dot Blot Analysis	Detection of small genetic mutations using amplified DNA oligoprobe complements
Gap Polymerase Chain Reaction (Gap-PCR)	DNA amplification by using the primers flanking a deleted gene sequence
Single Tube Multiplex Amplification Refractory Mutation System (ARMS) PCR	Genetic detection using primers that are complements to either normal or abnormal sequences
Multiplex Ligation Dependent Probe Amplification (MLPA)	Annealing adjacent oligonucleotides to DNA followed by quantitative PCR
Loop Mediated Isothermal Amplification (LAMP)	Fluorescent labeling and amplification of four to six primers specific to six regions on target genes
Sanger DNA Sequencing	4 dideoxynucleotide phosphates labeled with fluorescent dyes are detected using lasers
Next Generation Sequencing (NGS)	Similar to sanger sequencing with capacity to sequence the entire human genome



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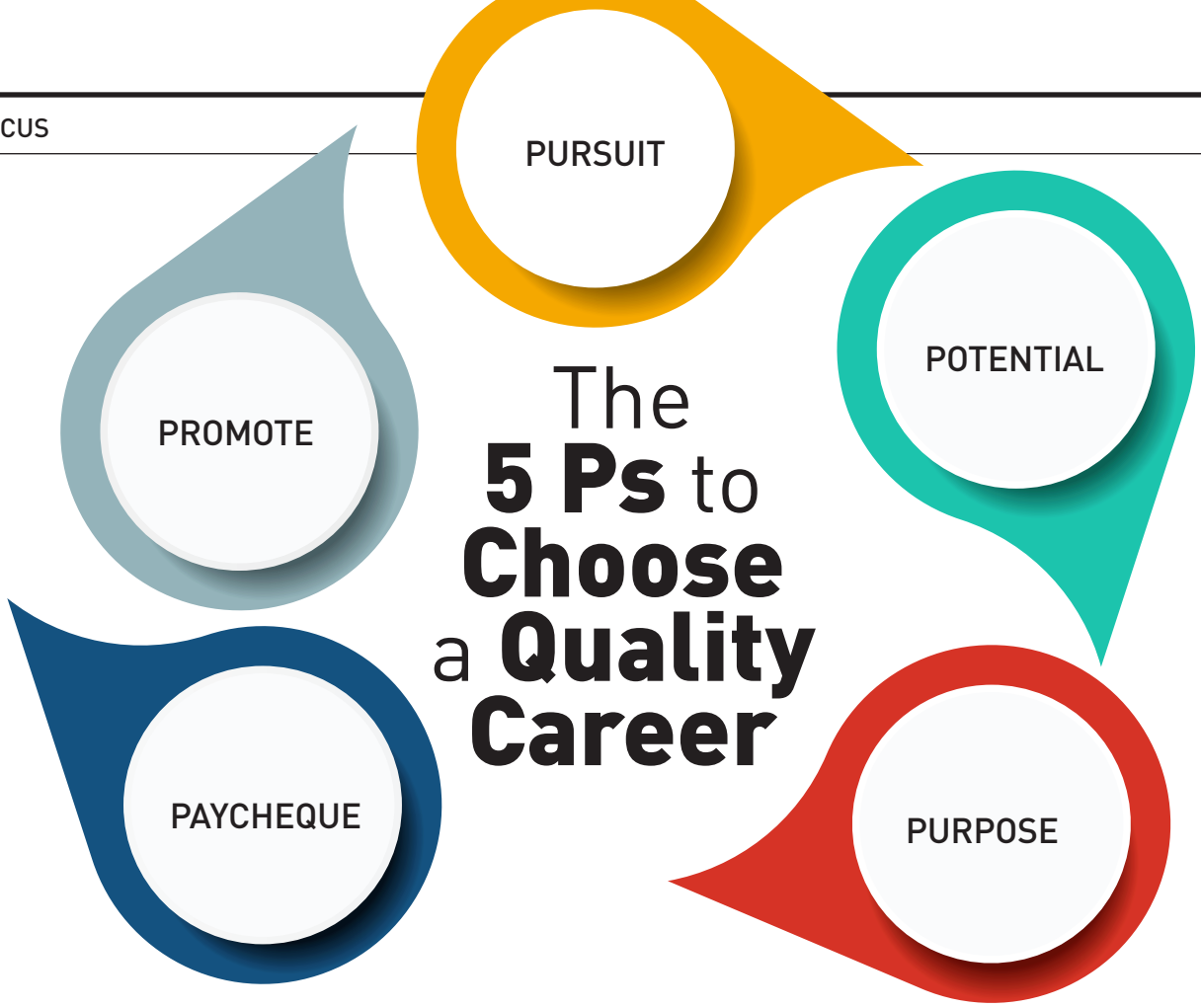

The 5 Ps to Choose a Quality Career

Welcome to the world of quality, a world with even more acronyms than the medical laboratory. Here, details matter more than ever, and while there are countless positions, every quality professional's role is key to keeping results precise and patients safely cared for. It can be hard to choose a direction in such a vast field, but the 5 Ps can help you find your way to a quality career.

PURSUIT

Not everyone looking up from the bottom rung of the career ladder pursues "the big Q" (quality) as a career choice after graduating. Many industry professionals pursue employment opportunities in their sector and then seem to naturally gravitate to quality functions inside that sector. Like many lab professionals, quality professionals (QPs) start on the bench and then view ways to increase efficiencies, save time, and decrease error rates. Some have the natural skill or habit to ask "why" questions and break down traditional barriers. Others just see life, only much better, through a quality lens. That is what quality thinking is all about, right? The pursuit of continuous improvement? Quality careers can vary depending on an individual's goals and passions. Take your pick; the world of quality careers extends into pharmaceutical, health care, military, education, engineering, manufacturing, construction, government, and financial services, just to name a few. QPs work across all industry sectors in many guises, some as generalists and others more specialized.

Many QPs aspire to careers as Quality Control (QC) technicians, government inspectors, standards auditors, data analysts, or quality assurance (QA) coordinators, while others can continue their career paths toward quality managers. The top roles in the field are often Director or Vice President of Quality.

POTENTIAL

A world of diverse career opportunities awaits those who seek a professional title in quality. Some QPs have an immense sense of purpose and focus on new opportunities that will achieve that "100% quality" stamp of approval for Safety, Quality, Identity, Potency, or Purity (SQIPP). Some QPs are concerned with bench-level quality to ensure the safe delivery of products and services, while others are concerned with raising the quality of the leadership across an organization. At a strategic level, quality leaders have a vision that ensures the organization translates the quality mission and plan objectives into real-life outcomes. QPs are also focused on increasing efficiency, reducing risk, dealing with compliance, solving problems, and employing tools such as assurance and improvement — that is, Six Sigma. Some are employed in-house, while others work outside the organizations they deal with. Quality is a broad church in a global village, so there is tremendous potential to find your niche.

PURPOSE

So why are quality careers important to the workplace and the world? In short, QPs are essential in establishing and maintaining relationships across the organization and with its customers. QPs not only maintain foundational quality processes such as policy, Standard Operating Procedures (SOPs), and controlled procedures, but are

also in the driver's seat of quality assurance, or QA. QA is proven to increase the confidence level patients, clients, and customers have in your business, service, and products, and ultimately safeguards their lives. For the organization, QPs' purpose and goals have a direct impact on the bottom line:

- saves money by identifying and solving issues early;
- avoids waste, remanufacture, or reprocessing;
- helps meet clients' expectations;
- sets a level of integrity others can inspire to;
- sets the bar and maintains high standards;
- builds trust in your products or services because quality is part of your workplace image;
- outperforms the competition by creating a better product or service in the long term;
- maintains consistency across all teams and at all organization levels;
- ensures everyone follows the same mission of dependability;
- provides quality goods, products, and services; and
- conveys to customers that your institution sets targets and goals to ensure their needs are met.

PAYCHEQUE

And there is always the pay (salary). Here's an overview of some jobs you can get in quality assurance:

Title	National average salary (annual)	Responsibilities
Quality Technician	$52,370	Quality testing, gathering data, reporting on inspection results, and writing procedures. Product qualifications and calibration.
Quality Auditor	$52,824	Performing audits on products, suppliers, systems, or processes. Prepare reports and follow up on audits with corrective actions.
Quality Coordinator	$61,900	Track and provide information related to quality assurance. They make sure companies follow compliance requirements such as ISO 9001. They improve processes, generate reports, and document QA systems. They might also train other team members in quality assurance.
Quality Assurance Tester	$71,827	Works with the design team to develop test plans, procedures, and scenarios. They perform tests, analyze results, and create reports.
QA Manager	$111,259	Oversees quality assurance processes by encouraging continuous improvement and solving quality problems. Quality managers resolve suppliers' performance issues, recommend corrective actions, and manage direct reports. Their responsibilities also include achieving QA management certifications.
QA Director	$163,290	Oversees all QA processes, sets policies, creates strategic plans, and develops QA programs to improve quality. Educates, trains, and coaches in QA management systems. They report to the President or Vice President (VP).
VP of Quality	$249,975	Develops an organization of continual quality improvement. Responsible for the overall function of the quality department, steering improvement by monitoring and making executive modifications. Typically reports to the President.

PROMOTE

QPs within an organization can often be the "last person standing" between the organization and the inspection team. Being the "go-to" person is simply not enough. QPs need to have good reputation and standing that inspires others across and outside the workplace. QPs engage fellow QPs across the industry to raise the bar for quality and best practices. They have the potential to lift others and can develop and support the careers of others, especially less experienced quality professionals. So, choose an opportunity in quality and inspire others to do the same. J

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JOINING FORCES:

Improving Patient Care through Interprofessional Collaboration

Interprofessional collaboration (IPC) is a dynamic and evolving approach to health care that emphasizes communication, shared decision-making, and teamwork among professionals in different disciplines. IPC brings together experts from diverse fields to collectively address complex patient needs and enhance the overall quality of care, thus breaking free from siloed health care models. Among its many benefits, IPC places the patient at the centre of health care delivery. It also enhances communication, improves outcomes, and utilizes resources efficiently.

By fostering collaboration among health care professionals such as doctors, nurses, laboratory professionals, and pharmacists, the focus shifts from treating isolated symptoms to providing a broader scope of patient-centred care. Effective communication is at the core of IPC; when various professionals integrate, they share information and perspectives, reducing the likelihood of medical errors and misunderstandings. Clear communication promotes an effective health care delivery system, ultimately improving patient outcomes. The IPC approach optimizes the use of resources by ensuring that each team member contributes their unique knowledge and skills. This, in time, reduces redundancy and maximizes the efficiency of health services. When each voice is heard, job satisfaction, in turn, increases.

The areas of focus for IPC start at the academic level but should continue to the clinical setting. Implementing interprofessional educational events or programs in academic settings is crucial. These programs or events equip students with the skills and attitudes necessary for effective communication and collaboration, breaking down these silos early in their career training. In health care settings, IPC involves coordinated efforts to address patient needs. They may include care planning, joint assessments, or regular team meetings to discuss treatment or diagnostic strategies.

Opportunities for IPC in academia and health care settings are

plentiful. Universities and colleges play a vital role in promoting IPC. Incorporating IPC into curricula, promoting interdisciplinary research, and encouraging student participation in collaborative projects prepares future health care professionals for effective teamwork. Hospitals or other health care institutions can create a culture of IPC by

- implementing team-based care models;
- establishing interdisciplinary rounds; and
- providing ongoing training for health care professionals.

This can also be an opportunity for continued professional development, such as workshops and conferences to facilitate networking and knowledge sharing among health care professionals. These opportunities enable individuals to stay up-to-date on best practices and emerging trends in IPC.

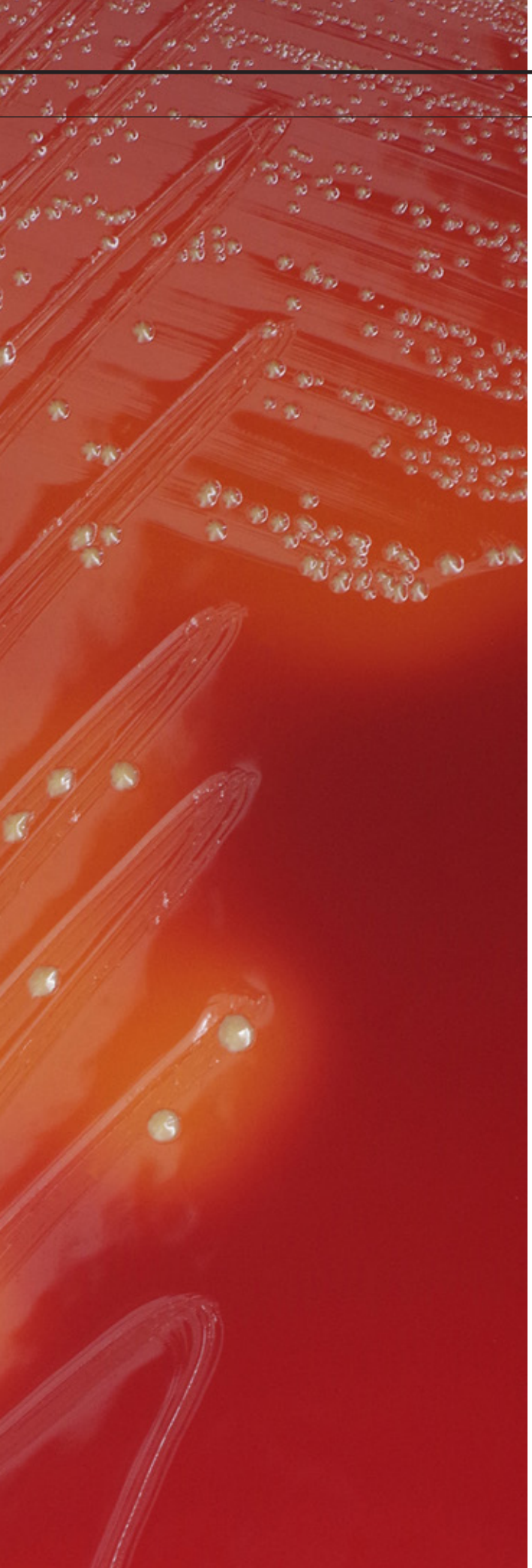
Interprofessional collaboration is not just a concept; it can be a transformational approach that holds the potential to revolutionize health care delivery. By embracing this model, health care and academic institutions can contribute to a more integrated, efficient, and patient-centred health care system.

Regardless of your role in health care, actively pursuing or establishing opportunities for IPC should be a common goal. In the laboratory or classroom, begin with small steps and set clear goals, and be sure teamwork and communication remain top priorities. Ultimately, any endeavour to improve IPC will enhance your workplace and contribute to the future of health care. J

MARYANNE STEWART
EdD, MBA, MLS, MLT

GROUP A STREP ON THE RISE:

How Laboratory Professionals at Interior Health Authority Responded to the Surge in iGAS Disease



By switching from culture to PCR, the lab significantly improved turnaround time and facilitated faster diagnosis and treatment of streptococcal throat infections, helping to stop the spread of the bacteria responsible for the spike in iGAS disease.

A recent spike in cases of invasive Group A streptococcal (iGAS) disease following the COVID-19 pandemic has drawn international attention. First noted in late 2022, the increase continues into 2024.[1] While serious cases remain rare, iGAS can be a life-threatening infection of the blood, muscles, fat, or lungs with Group A streptococcus bacteria.

Here in Canada, a group of medical laboratory professionals at Interior Health Authority in British Columbia rapidly mobilized a new throat swab protocol in response to the increase in Group A streptococcal disease. By switching from culture to PCR, the lab significantly improved turnaround time and facilitated faster diagnosis and treatment of streptococcal throat infections, helping to stop the spread of the bacteria responsible for the spike in iGAS disease.

The new method also supports the broader goal of antimicrobial stewardship, an initiative that aims to use antibiotics more judiciously to reduce the development of antimicrobial-resistant organisms. By rapidly and accurately identifying which throat infections are bacterial versus viral, doctors can be sure they are using antibiotics in the right situations.

What is invasive Group A streptococcal (iGAS) disease?

Group A streptococcus (*S. pyogenes*) is a type of bacteria commonly found on the skin and in the throat.[2] In addition to iGAS, Group A streptococcus bacteria can also cause mild infections such as strep throat, scarlet fever, and impetigo. Many people carry the bacteria without any signs of infection.

iGAS disease is a severe, sometimes life-threatening infection caused by the invasion of Group A streptococcus bacteria into the blood, deep muscle, fat tissue, or lungs. There are different kinds of invasive Group A streptococcal infections. Necrotizing fasciitis, or flesh-eating disease, is infection of the muscle and fat tissue with bacteria such as GAS. Streptococcal toxic shock syndrome is an iGAS infection that causes sudden onset of shock, hypotension, and organ failure.[3]

TEST YOUR KNOWLEDGE

Complete a quiz on this article at **learn.csmls.org** to earn Professional Enhancement Program (PEP) hours towards your professional development plan..

Like many infections, iGAS infection is more common in young children and the elderly, as well as those with certain medical conditions. Several risk factors for developing iGAS have been identified, including alcohol use disorder, heart disease, diabetes, chronic lung disease, skin infections, and being immunocompromised.[4] Recent infection with varicella (also known as chickenpox) is also a risk factor because of the skin lesions it causes.[2] However, even with the recent increase in cases, iGAS remains rare overall, with just 7.4 cases per 100,000 population in British Columbia in 2022.[4]

In most cases of iGAS, doctors do not know how the bacteria got into the body. For streptococcal toxic shock syndrome, the main sites of entry include the vagina, pharynx, mucosa, and skin.[3] Any wound can allow the bacteria into the body and potentially lead to invasive disease. Additionally, a mild streptococcal infection such as strep throat can, in rare cases, become invasive.

Changes in incidence following the pandemic

The incidence of iGAS has been slowly increasing in recent decades — since well before the pandemic — and there are many theories as to why.[5] According to a 2022 report from Health Canada, changes in the prevalence of certain *emm* types, or strains of GAS bacteria, may be responsible for increased virulence. The growing problem of antimicrobial resistance may also play a role.

A significant further increase in iGAS has been noted worldwide following the release of pandemic-related restrictions. In Denmark, case numbers increased rapidly starting in November 2022, peaking in January 2023.[6] In England, iGAS infections were up 28% in November 2022.[7] In Ontario, epidemiologists observed an increase in iGAS case counts from January to May 2023 before a decline.[8] A similar trend was noted in British Columbia.[4]

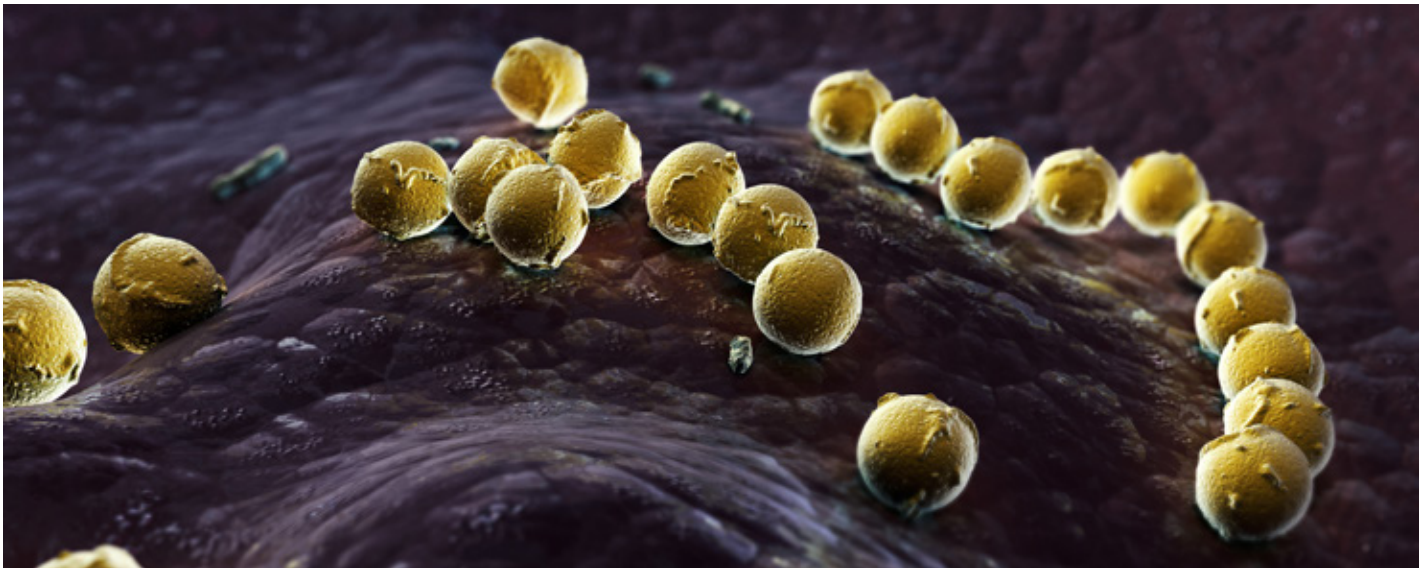
Irene Martin is head of the Streptococcus and Sexually Transmitted Infections (STI) Unit at the Public Health Agency of Canada's National Microbiology Laboratory (NML). Martin and her team witnessed the increase in iGAS in Canada firsthand.

"In Canada, invasive Group A streptococcus (iGAS) is nationally notifiable through the Canadian Notifiable Disease Surveillance System (CNDSS), meaning that it… must be reported to the public health authorities," Martin says.

During the pandemic, Martin explains, fewer iGAS cultures were submitted to the NML. But as restrictions were lifted starting in the fall of 2022, the NML started to see a surge in iGAS cultures, which persisted through 2023.

"As of January 9, 2024, the total number of iGAS cultures submitted to the NML in 2023 has surpassed 4,600, which is now the highest annual iGAS total," Martin says.

It's unclear if and how the increase in iGAS is related to the pandemic. Some experts believe a lack of immunity is at play,



because of reduced exposure to the bacteria during the pandemic.[9] People may also have impaired immunity following infection with influenza, COVID-19, or another virus, which leaves their defences lowered against GAS.

Increased virulence also likely plays a role in the post-pandemic rise in the severity and fatality of iGAS. M1UK is a mutant strain of GAS first identified in the UK but now found in other parts of the world.[10] The mutation causes the bacteria to make more toxin, which could make invasive infections deadlier.

Innovation within Interior Health Authority

As hospitals around the world experienced unprecedented numbers of iGAS cases, medical laboratory professionals played an important role in the diagnosis of both invasive and non-invasive Group A streptococcal disease.

In 2022 and 2023, at Interior Health Authority, an increase in throat culture volume coupled with a long turnaround time led to delayed diagnosis of Group A streptococcal disease and a significantly increased workload with the heightened volume of throat swabs to be processed. This sparked a collaborative effort with the goal of expediting the diagnostic process to improve patient outcomes, with medical laboratory professionals at the forefront.

Dr. Amanda Wilmer is a medical microbiologist at Kelowna Regional Hospital (KGH) within B.C. Interior Health, a regional health authority that serves the southern interior region of British Columbia.

"Interior Health [saw an] increase in throat culture volume… for emergency department and admitted patients, up to 7,039 specimens in 2022, nearly doubled from what was collected during 2020 and 2021," Wilmer explains.

With a growing workload, the team decided to explore more rapid diagnostics. Before the changes were implemented, throat swab culture was used to investigate for Group A Streptococcus, says Andrea Ward, a technical specialist at B.C. Interior Health at KGH. The turnaround time for culture was averaging 44 hours, which significantly delayed diagnosis.

Change would support the hospital's long-term goals, too.

"In addition to more rapid identification… the group was also interested in gains for antimicrobial stewardship, as well as access and flow related to more rapid turnaround times for testing," Wilmer adds.

Switching from culture to PCR

After considering their options and collaborating with other teams within the hospital, the Interior Health Medical Microbiology working group settled on a simple solution: perform PCR testing on all emergency department and inpatient specimens with the goal of expediting diagnosis. Outpatient swabs continued to be tested by culture.

"Due to the comparatively high cost of the PCR assay, PCR testing is restricted to patients who present to the hospital," Ward says.

The team decided to use the Cepheid Xpert® Express Strep A assay, which uses the GeneXpert Xpress System. The labs were already familiar with the GeneXpert system, says Ward, which helped ease the transition.

"It was used for other testing such as *C. difficile*, influenza, Respiratory Syncytial Virus (RSV), and Methicillin-resistant Staphylococcus Aureus (MRSA), and it was the first method we implemented regionally for COVID," she explains.

Interior Health uses two types of swabs for throat culture specimen collection: Copan Eswabs, which are a Health Canada-approved specimen type for the strep A assay, and Copan M40 gel swabs, which were not an approved specimen type.

As part of the implementation process, the team had to validate the GeneXpert assay and the Copan M40 gel swabs. All in all, this took around three months, says Ward.

"The sensitivity and specificity of the GeneXpert assay were found to be excellent during our validation study," Ward says.

"[We performed an extensive validation,] which demonstrated good performance of the [Copan M40 gel] swabs once eluted in saline," Ward explains. "This data will be presented at the AMMI CACMID conference in Vancouver in April. Since [the hospital] did not have to change swab types for testing, the implementation went very smoothly."

Faster Turn Around Time (TAT) to stop the spread

Since implementing the new PCR method, turnaround time has decreased to 11 hours, down significantly from 44 hours for culture. Although throat swabs do not diagnose invasive Group A streptococcal disease — that would involve testing the blood, Cerebrospinal Fluid (CSF), or tissues — faster processing of throat swabs leads to earlier treatment of streptococcal throat infections.

Treating strep throat earlier means lower organism loads and less spread of the bacteria in the community. With less GAS spread in the community, there is less opportunity for iGAS to take hold in those who are vulnerable, especially because person-to-person contact is a major driver of spread.

While iGAS remains rare, it is life-threatening, with a 10%–15% case fatality rate.[2] So preventing even one case of invasive disease could potentially save a life. By switching to PCR testing to help diagnose and treat streptococcal throat infections early, medical laboratory professionals within Interior Health Authority are doing all they can to fight this disease.

Looking to the future

Martin says medical laboratory professionals can play an important role in monitoring and disease surveillance.

"Medical laboratory professionals can continue to contribute to *S. pyogenes* surveillance by identifying GAS cultures and supporting the process of routing these to the NML for additional characterization," she says. "Depending on work processes, medical laboratory professionals may be receiving *emm* typing results and would be the first to notice emerging regional trends."

At Interior Health Authority, the changes were implemented in September 2023, and the rollout process went smoothly.

"Interestingly, after very high testing volumes over the summer, the monthly number of tests has decreased since introduction of the molecular testing in September," Wilmer explains. However, the changes mean the hospital is well-equipped to handle the expected seasonal increase in throat culture volume during the winter months.

Overall, the team feels the change was positive and that it supports many worthwhile goals. In addition to improving patient outcomes, the changes also help the hospital use antibiotics more wisely in confirmed cases, which contributes to the shared goal of antimicrobial stewardship.

"This was a valuable experience in that it showcased the importance of innovation and rapid diagnostics in improving patient care, in collaboration with multiple different laboratory, clinical, and administrative groups within our region. Everyone shared the same vision of optimized patient care," Wilmer says.

As 2024 unfolds, the inevitable throat infections that come through the doors of Interior Health hospitals will be diagnosed quickly and accurately, helping patients get better faster and stopping the spread of the bacteria causing the spike in invasive Group A streptococcal disease. All of this is thanks to the tireless work of medical laboratory professionals, who have always played an important role in diagnostic innovation.

LAURA TENNANT
Special to the *CJMLS*

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MEMBER SPOTLIGHT

Q&A with Titilope Ayosanmi

Every medical laboratory professional has a fantastic story to tell, and Titilope Ayosanmi is one of them. Her career journey is also part of her family's journey in Canada. Coming from Nigeria, she chose medical laboratory science as her career path, providing life-saving services to patients. Ayosanmi's dedication and commitment to her patients have led her to achieve success as a laboratory professional and work for the Saskatchewan Health Authority (SHA). We had the opportunity to learn about her journey, and this is what she told us.

How did you start your journey as a medical laboratory technologist, and what's your current role?

My medical laboratory science (MLS) journey began in 2001 when I tried applying for the diploma program at the University College Hospital (UCH) in Nigeria, but my parents preferred a university degree to a diploma. So, I went for a bachelor's degree in microbiology at the University of Ilorin in 2003, hoping that I would be able to work in the hospital as a medical laboratory scientist. However, I discovered later that only MLS graduates work in that capacity. Therefore, I pursued a second degree in MLS. Despite the challenges of raising a family and studying, I completed the program in 2016 with First Class Honours. I earned a scholarship for a master's degree in 2017, which allowed me to join my husband in the U.S. We relocated to Canada afterwards, and now I work as an MLT with the SHA, Sunrise Health Region.

How was your experience adapting to a new life in Canada, considering you became CSMLS-certified shortly before the pandemic?

After completing my master's degree in Illinois, I relocated to Canada to join my husband, who had moved to pursue his PhD in family medicine. Despite the change in weather, adapting wasn't too difficult for me. I received the CSMLS MLT Certification shortly before the pandemic and secured a job in 2020 as an MLT with SHA. Despite the

Titilope Ayosanmi and her family.

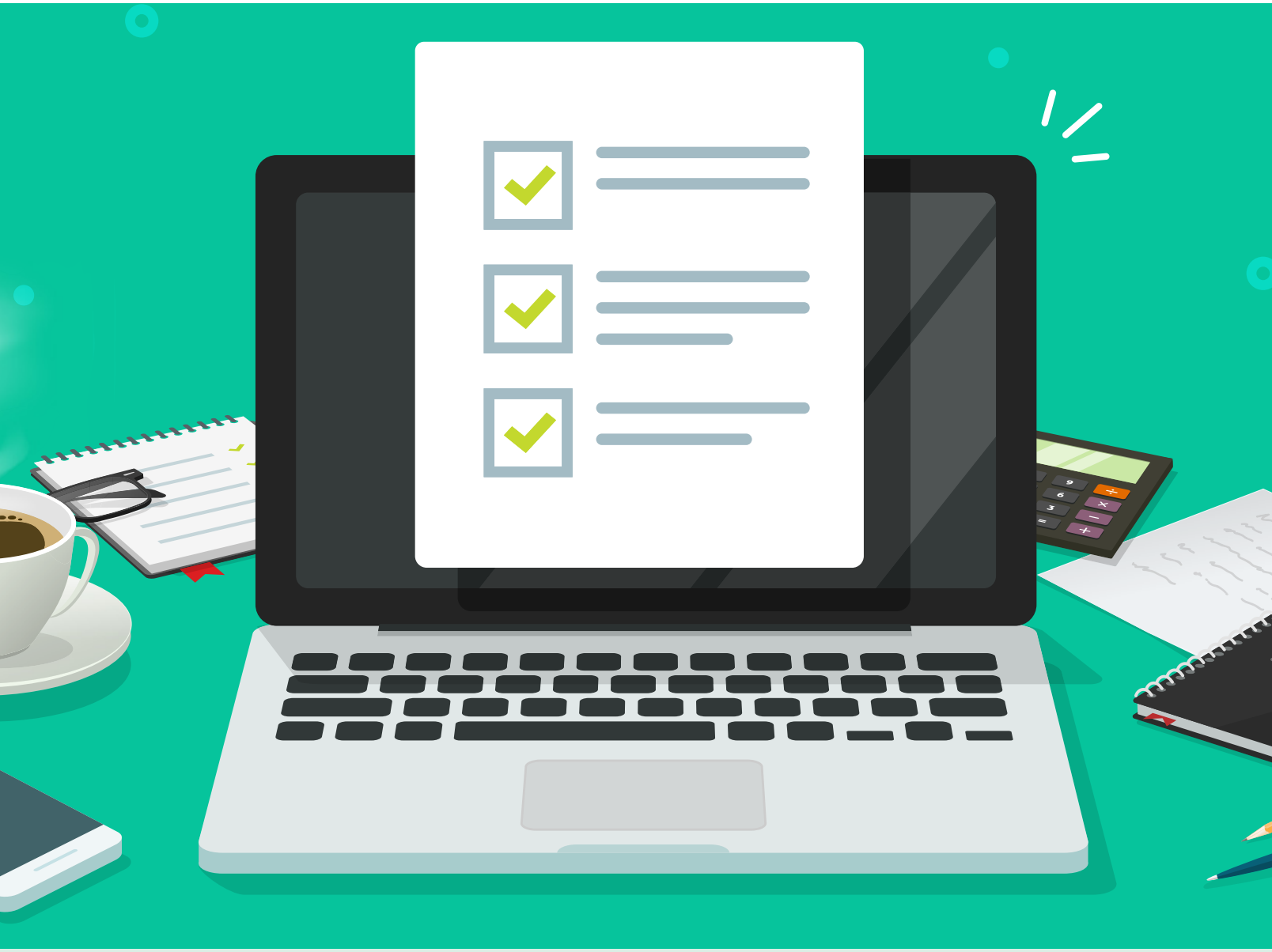
pandemic, getting into practice was not a challenge as I always desired to help people, and I was excited to do so as an MLT in Canada. I was fortunate to work with wonderful colleagues who made practising here easy. We're now settling in Clearwater, B.C., where my husband found a job as a family physician.

What is or has been the most rewarding element of working as an MLT?

As an MLT, I find my job rewarding. I take pride in my role as a member of the medical team. However, the most fulfilling aspect of my job is assisting in diagnosing patients' conditions and providing timely, life-saving services. My international skills were used in the preparation of suitable slides and the identification of some uncommon parasites like malaria. Also, this helped with easy identification of hematological cells like sickle cells. Of course, I have acquired much more knowledge since I started working in Canada. Knowing that I contribute to providing appropriate treatment and patient care is truly satisfying.

You published an article in the *International Journal of Translational Medical Research and Public Health (IJTMRPH)*. Tell us more about this.

Yes, I completed my master's degree with my husband at Western Illinois University in the U.S. In 2020, my husband was the main author of an article on HIV screening decisions among international students in the U.S., which I co-authored. The objective of the research was to determine how the health belief model (HBM) informs international students' decision to get HIV screening done and to find out which of these HBM factors was the most relevant to the decision. Through the research, we concluded that most of the participants would accept HIV screening because of its perceived benefits. In contrast, most of the people who did not think HIV screening was necessary believed they were not susceptible to this infection since they were not sexually active. I enjoy working with my husband in research, and we have co-authored many more publications together.



NEWLY CERTIFIED MEMBERS IN 2023

Congratulations to the following members who successfully passed their Certification Exam in 2023. Completing a certification exam is no easy feat. We are proud to celebrate your accomplishment and welcome you to the medical laboratory profession!

On behalf of each of us at CSMLS, welcome! We look forward to being there for every step of your career.

Current verified new members as of February 21, 2024:

MLT General

Sristee Acharya
Omolola Adebayo
Adekanmi Adediran
Musarrat Adnan
Priyankaben Ahir
Chinyere Ajonu
Amarachi Akujobi
Laila Al-Aref
Najlaa Alomairi
Mohammed Alrousan
Cherrilyn Ambrosio
Ara Christine Ancheta
Brady Anderson
Biji Anishkumar
Taryn Aranyosi
Shiena Aresta
Parisa Aris
Michael Ascione
Shaymaa Asfoor
Teanna Avery
Stephanie Awad
Paulnin Rouize Barbanida
Kianna Trishia Bascug
Chinedu Basil
Russel Basinillo
Jolina Batongbakal
Joseph Benjamin
Brandon Benoit
Tyler Bergeron
Valerie Bertram
Meghan Beutler
Timothy Blades
Rita Bou Zeid
Emily Ann Boyles
Ryan Bozor-Mbobi
Gordon Brook
Tiffany Brophy
Erykah Brown
Shawn Bruce
Juan Nicolas Cabioc
Kylie Cabot
Ma Cecilia Antonette Cachola
Gustavo Caetano Silva
Michelle Cameron
Shane Campbell
Erin Cangiano
Luis Francis Canora
Kevin Carson
Charles Chambers
Chelsea Chan
Irina Chan
Long Kin Kenneth Chan
Gurleen Cheema
Jolene Chisholm
Cassandra Chow
Ashley Christopher
Gissy Mary Jem Chu Yew Yee
Ross Cline
Amanda Conrad
Kelly Cornish
Natasha Cotterill
Lindsey Couturier
Vera Crooks
Maya Daoust
Aisha Dar
Kelsea Davies
Andrew Davis
Noel Day
Jessica Delong-Finnamore
Michelle Deoraj
Melanee DeSantis-Garner
Harley Duggan
Catherine Duguid
Collin Dunn
Hanna Dunn
Doaa Elkashif
Mackenzie Ellery
Erick Erickson
Michael Etty
Elizabeth Eyraud
Onyinye Ezike
Yasmine Fakir
Oluwafunmibi Fakunle
Roxane Falvo
Qasim Farooq
Syeda Fatima
Claire Feikema
Gracie Ferguson
Abigail Fewer
Kayla Forbes
Ethan Francis
Janaé Frazer
Heather Freeman
Kaitlyn Fuerth
Marlena Funk
Joseph Paolo Galang
Faith Galvez
Anne Daniel Garcia
Chelsea Gaudreau
Alexander Gear
Melissa Gerbrandt
Saba Ghebremariam
Joy Goddy Agommuoh
Andrew Gordon
Simon Grafe
Jessie James Grecia
Kasondra Haber
Shashi Shayaman Haggal Poththe Gedara
Hafsa Haider
Raya Hajjawi
Laura Harding
Stacey Harms
Jennifer Harrison
Paul Harrison
Sarah Harvie
Delaney Hasson
Kelsy Henderson
Jacob Heroux
Dumini Lakmani Hewawasam
Jitendrakumar Hirpara
Ryan Ho
Susana Hon
Jessica Hoppins
Steven Houghton
Ugonwa Ikejiofor
Candice Inkpen
Emmanuel Iwerima
Linda Jaika
Erin Jeffery
Krista Jenkins
Kailee Job
Mylene Jose
Lerica Julian
Jonathan Karas
Laura Kennedy
Reese Kersten
Aarinola Ketiku
Andrew Kim
Claire Knowles
Stephanie Koshman
Ausma Krasnauskaite
Kenny La
Mansi Lad
Brandon Ladd
Mercedes Lam
Russell Lamborn
Clarke Langille

MLT General

Alex Lanteigne
Susanna Law
Bryton Lawreniuk
Merca Leano
Cassy Leclerc
Dahyun Lee
William Lee
Yeji Lee
Michelle Lei
Emily Lennox
Long Hi Leung
Queenie Li
Jaeyoung Lim
Jennie Limayo
Rebecca Linge
Sarah Linthorne
Jillian Liverance
Miranda Llewellyn
Li Yun Lo
Virginia Lott
Wendy Lu
Kelsey MacLean
Jordan MacLeod
Emma MacLeod
Liliana Sofia Madeira Medeiros
Aminat Magbade-Showole
Gabrielle Magnante
Lian Kaye Mahinay
So Ling Mak
Annie Ying Yun Mak
Zainab Mansoor Rajaballi
Joshua Mar
Geraldine Mariano
Victoria Marko
Addison Marshall
Toni-Marcelle Martin
Mary-Rose Mascotto
Austin McDonald
Erin McDonald
Brendon McDowell
Jenika Merriam
Stacy Metivier
Carly Miller
Emilie Mombourquette
Precious Anne Montales
Branden Moore-Lachapelle
Yael Morgenshtern
Kelly Morris
Bhagavati Motisariya
Taya Mueller
Danielle Mullen
Breana Muller
Madison Murray
Iryna Myroshnychenko
Nora Nachareun
Jamie Shane Naco
Khushpreet Narain
Marley Neate
Meris Ngan Colby
Thi Anh Tuyet Nguyen
Joseph Nguyen-Vu
Megan Nielsen
Ifeoma Nonyelu
Gabrielle Norris
Kassie Noseworthy
Chinwe Okpalanze
Madison Oliver
Oluwatosin Mariam Olowe
Rhoda Oprisan
Bailey Ottenbreit
Christopher Palmer
Jeffrey Palmer
Amber Pan
Chintalben Patel
Gayatriben Patel
Janvi Patel
Ishitaben Patel
Nehal Patel
Shyam Patel
Chloe Pearson
Laura Penha
Lucy Penney
Victoria Penny
Jusaley Peralta
Gabrielle Perron
Kelsey Phiri
Jessie Power
Bhejavati Prasad
Gillian Quenneville
Silvi Raud
Ashley Redmond
Yvonne Joy Regalado
Cristina Reyes
Marina Rezk
Deanne Rice
Desirae Rice
Jennifer Rice
Samuel Richard
Irish Marie Rivas
Rebecca Robbins
Joanna Marie Rumuar
Kayla Ryan
Kennedy Ryden
Camilla Rzadkowski
Linnea Sahlgaard
Jasnoor Sandhu
Shelby Sansoucy
Gabrielle Savoie
Gladys Schulting
Lauren Scott
Miranda Scott
Mae Alyssa Senina
Kathleen Shane Serran
Dua'a Shamroukh
Chloe Sharpe
Kira Shaw
Paxton Sheppard
Fatimah Sholanke
Sagar Shukla
Alisha Simms
Emily Snow
Sherry Lynn So
Constance Spoor
Jared Sproxton
Lillian Starchuk
Billie Jo Swanson
Arianne Nicole Tamisin
Jonathan Tan
Weihui Tan
Vanessa Tanguay
Lexus Taszlikowicz
Kelsey Theobald
Shobana Thevakumar
Krizza Camille Ting
Elise Topolinski
Jiani Touma
Melanie Tran
Michelle Tran Veldhuis
Vicky Tran
Rachel Ublansky
Riza Jane Unabia
Adife Unal
Saheed Opeyemi Usman

MLT General

Samuel Uy
Via Amor Vicente
Danielle Janz Viernes
Dayaben Virani
Alexis Voyer
Lei Wang
Jacob Wasylenko
Laura Wood
Lucas Woolridge
Garima Yadav
Athena Yau
Weijun Zhu

MLT Diagnostic Cytology

Jesusa Paz Castillo
Jiyoung Jang
John Kiriakidis
Jasmine Singleton

MLT Clinical Genetics

James Baker
Paige Basner-Collins
Alexander Campeol
Fil Aldrin Noel Carbonel
Keira Durnin
Anna Hissen
Thomas Lemke
Miranda Mickens
Emily Nielsen

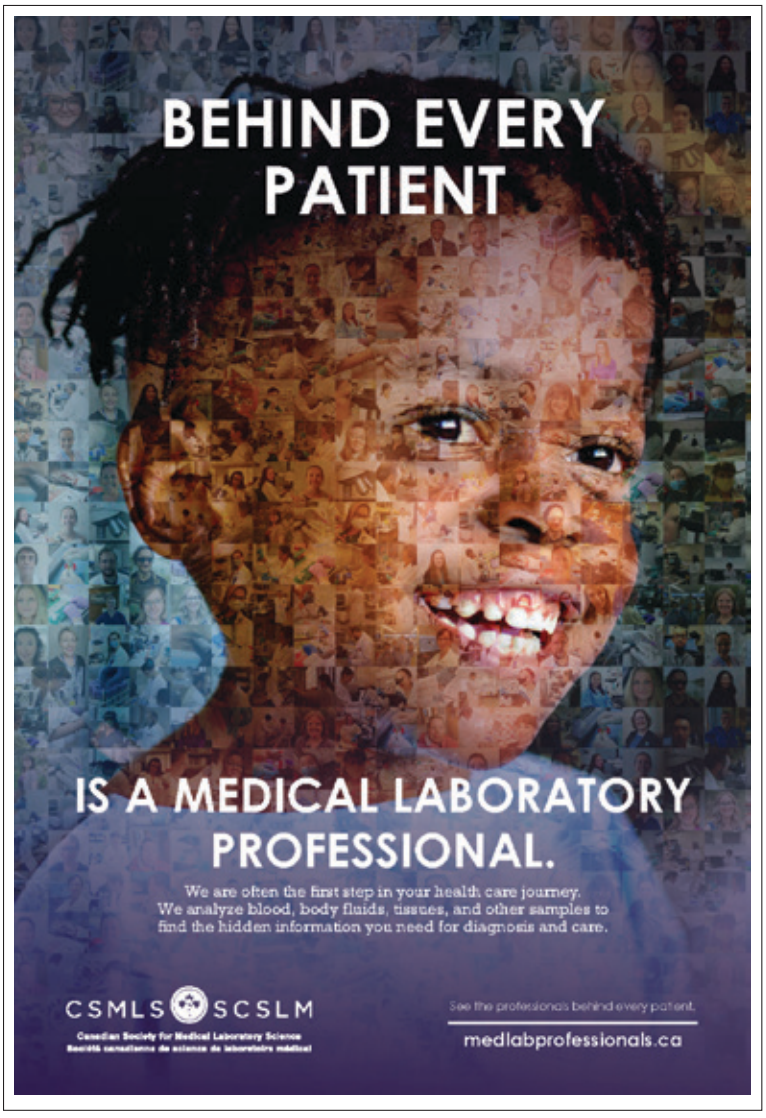
MLA

Maica Marie Aba
Cybill Lorraine Abadilla
Reema Abdul Waheed
Wendy Acebedo
Kirk Adams
Shauna Adams
Zulfiqar Ahmed
Fadi Al Masalmeh
Baidaa Aldehwe
Lujain Alkatari
Cyrille Alphonse
Anne-Christine Alzuphar
Irina Arefeva
Jade Armstrong
Emma Arsenault
Chrislene Asucro
Angel Balatico
Jeanne Balsacao
Kelley Bandy
Sunelle Barnard
Andrea Bechard
Leo Berkovsky
Nicole Bernardo
Harjeet Bhalla
Shubham Bhatia
Natalie Bignucolo
Maria Bonilla Vera
Amy Boodhoo
Tricia Bourgeois
Morgan Boutilier
Terri Boutilier
Brenda Braendel
Holly Bray
Danniela Brillo
Leah Britos
Samantha Bruce
Danielle Buckler
Juan Nicolas Cabioc
Cassidy Cahoon
Enrico Ritche Calderon
Melanie Canlas
Tiffany Cao
Jackylu Casimiro
Sarah Cassell
Caitlin Caza
Ama Chandrasiri
Hayley Cheeseman-Currie
Brice Chuankam Ditchi
Andrea Chute
Vanessa Colbert
Nathan Connors
Gabrielle Coutinho
Catherine Cowal
Michelle Crandall
Advent Cruz
Mozhgan Daei
Bishal Dasgupta
Ashley Davis
Angieluz De Guzman
Nayana De Silva
Cassandra Degn
Tya Dell
Deborah Dentremont
Parminder Dhillon
Jordan Di Stefano
Rachel Dixon
Aileen Philline Dizon
Emma Doiron
Benneza Dubach
Theodore Dumalagan
Mikala Dunn
Cela Duong
Sarah Eberly
Oseremhen Ebhojie
Princess Kim Edralin
Andria Edwards
Sophiya Enjambre
Jerymi Enriquez
Maria Alodia Escubio
Meghan Evans
Kimberley Eveleigh
Syeda Fatima
Rhichel Faypon
Juffry Ferrer
Tandica Fingal
Emily Ford
Stephanie Ford
Benjamin Foster
Ruffa Chel Francisco
Tammy Frasson
Zelia Furtado
Irish Mae Gementiza
Mavelyn Giron
Martha Goertzen
Joanna Patricia Gohel
Meghan Goudy
Briana Griese
Grace Grosjean
Casey Grossett
Selena Haché
Josette Hackett
Dalia Haidar
Meheret Hailegiorgis
Mackenzie Halliday
Kayla Hamilton
Emma Harris
Brandi Higdon
Ava Krizyl Hilot
Taylor Hilton
Jennifer Howard
Mackenzie Howie

MLA

Chris Hutchinson
Madalyn Hutt
Ugonwa Ikejiofor
Jason Insuaste
Alexis Iob
Reshma Jaglal
Mackenzie Jex
Xiaofei Jia
Serena Jones
Mahin Joudi
Joline Isabelle Jovero
Camden Kaizer
Manjeet Kaur
Navneet Kaur
Danielle Kempffer
Ghinwa Khalil
Stacey-Lee Khosravi
Alistair Kitts
Adam Kitzler
Ramani Kokulan
Danielle Koopman
Veronika Kozareva
Kaleigh Kuluski
Athira Kuruvilla
Keunjoo Lee
Mihaela Lefter
Emma Lewis
Samantha Linthorne
Jeremy Loewen
Thalia Lopez
Lin Lu
Maria Lyle
Melibe Mabale-Parks
Sara Macdonald
Emily MacEachern
Daphne MacLean
Amanda Maenpaa
Denise Michelle Malubay
Jacquelyn McNeil
Ryan James Melgarejo
Douglas Miller
Evangeline Molina
Tomoko Mori
Alayna Mould
Jessica Mullins
Saeed Nafisi
Junga Nam
Gyanne Regor Navarro
Kayla Nelson
Tayler Nelson
Katherine Nepomuceno
Rachel Nichols
Bright Nnadozie
Chamika Kithmini Mud Obada Mudalige Dona
Erlynne Marie Obar
Gema Ocampo
Carol Ochoa-Aldana
Chidinma Odinye
Obiefuna Okeke
Adejoke Oluwayemi
Julie Onyelugo
Vilma Pajarillo
Julia Parker
Avantikabahen Patel
Jeni Patel
Monaliben Patel
Prachi Patel
Kristen Patterson
Paouline Ann Pena
Aliveah Penner
Josie Cabe Peralta
Mika Rae Pickett
Samantha Piercey
Nikazon Pillas
Josephine May Pizana
Malgorzata Postolski
Jack Pouliot
Kyla Pun
Dawn Pyke
Sally Rahma
Joy Raluta
Krishia Ramos
Shawn Raycraft
Hina Rehman
Reshma Reji
Melody Relucio
Palina Repina
Grace Anne Reyes
June Micah Reyes
Carly Richards
Savanna Roberts
Gillian Rosales
Maya Russell
Arienne Saint-Laurent
Kira Sampley
Jessica Schutt
Venus Joan Sejalbo
Lavanya Shah
Jenna Shannon
Haejin Shin
Safin Shohani
Hailey Silbernagel
Melissa Silva
Kaitlyn Simms
Kailyn Singleton
Angelie Sirois
Alysha Skinner
Jessica Snow
Ania Splawinski
Sadie Stabback
Natthaporn Sukrammi
Neha Tabassum
Kristaine Tabora
Rachel Taylor
Trisha Taylor
Stacia Tellez
Julyne May Tiangao
Gina Tomi
Olivia Turple
Laurelle Unrau
Diana VandeHoef
Heather Verheye
Danica Victorio
Danielle Janz Viernes
Irene Donita Villanueva
Kimberly Mae Villanueva
Rhea Villapana
Joyce Villegas
Anne Louise Vital
Katherine Walline
Keanna Warren
Nathan Whitehorne
Tracie Whitelaw
Teagan Wiebe
Kaitlin Kristin Wilhelm
Jenna Winter
Keziah Wittmeier
Hoi Man Wong
Marissa Wyckoff
Charisse Angel Young
Chuyun Zhao
Dan Zhu

LAB WEEK 2024: **BEHIND EVERY PATIENT, IT'S YOU**



Medical laboratory professionals from all over Canada shared their photos used in a photo mosaic of a clinical patient.

National Medical Laboratory Week is getting bigger every year, and it's all thanks to you! Your dedication and passion for the profession have made people from all corners of Canada recognize the work you do.

In less than 24 hours, you helped us set another new record of over 900 swag orders. By celebrating in record style, you and your colleagues took indigo pocket protectors, informational brochures, colour-changing pencils, purple-ink pens, and Behind Every Patient posters and stickers as part of this year's festivities.

Public and health care participation in the Behind Every Patient campaign not only helped raise awareness of your work, it also highlighted your crucial role in patient care. You and your work were recognized across Canada with an emotional video, Lab Week Lights, a new Wall of Recognition, and more.

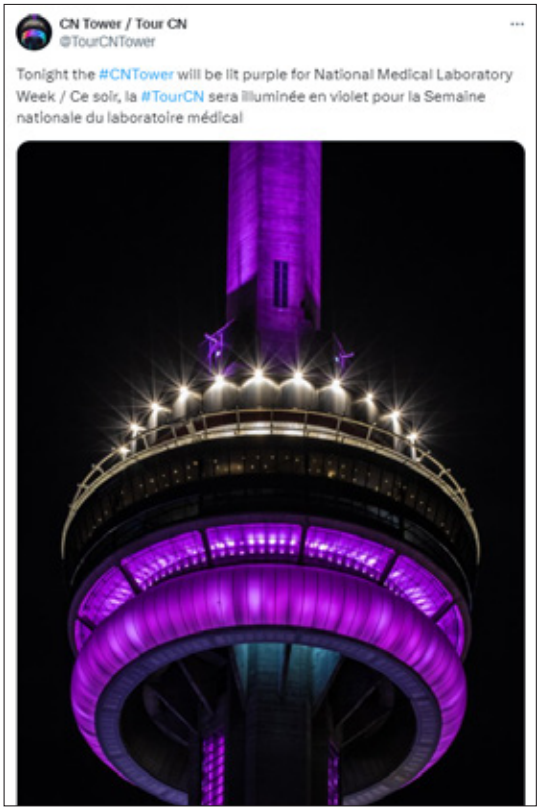
Canada shone a light on your work with the illumination of many landmarks across the country! With over 39 indigo lights shining bright, both rural and urban communities alike documented your life-saving contributions to health care.

This year's Lab Week celebrated your significant role #BehindEveryPatient, emphasizing the crucial responsibility you bear as the first step in every patient's health care journey. The poster featured you and your colleagues, showing how you and your work are truly behind each patient. Thanks to all the medical laboratory professionals who shared their photos with us. We appreciate your advocacy efforts and commitment to the profession.

Adding to the celebration, we revived an emotional piece of CSMLS's advocacy. The Here for You video was released nine years ago amid Lab Week 2015, and it's clear to us now more than ever the importance of highlighting your hard work that can go unseen. MLT and CSMLS member Isabelle Babin helped us portray the role of laboratory professionals during a regular hospital night shift. We had the opportunity to talk with her again, and she expressed feeling honoured to be part of this experience, highlighting how the video demonstrates in full circle the reality of this noble job.

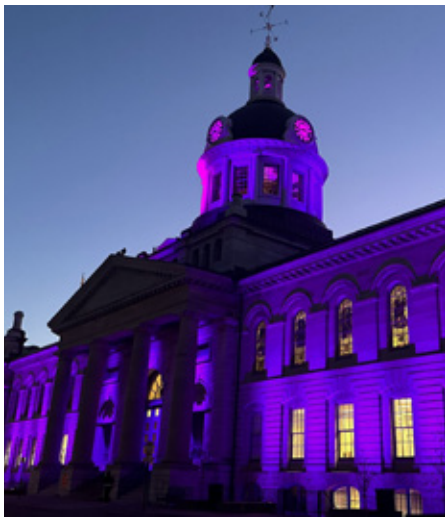
Your employers and health care peers also played an important part in Lab Week this year. With over 35 letters and social media posts of recognition at labweek.csmls.org, they let everyone know how much appreciation they have for your work in the lab. We're making sure that more leaders, organizations, and health care providers see your vital place in the health care community.

Your participation in our social media channels throughout the week was undeniable. We had over 7,000 interactions with our posts and more than 10,000 people saw the "Here For You" video, which means that many people across different provinces and territories saw who is behind the millions of tests you perform every year. We will continue to build on this momentum and hope that you had an unforgettable Lab Week.



Toronto's CN Tower lit in indigo for Lab Week 2024.
Photo by @jgazze on Instagram. Courtesy of CN Tower/Tour CN

The Big Nickel in Sudbury, ON lit in indigo for Lab Week 2024.
Photo courtesy of CSMLS member Nikki Laidley



Kingston's City Hall joined the celebration. Photo courtesy of CSMLS member Christine Lyons.

Medical laboratory professionals from all over Canada shared their photos used in a photo mosaic of a clinical patient.

YOU SAVE LIVES AND **CANADIANS ARE HONOURING YOU**

It's you who work tirelessly and with passion to deliver life-saving results to patients in need. Every Canadian should know it, so we're making sure communities meet their local medical laboratory professionals.

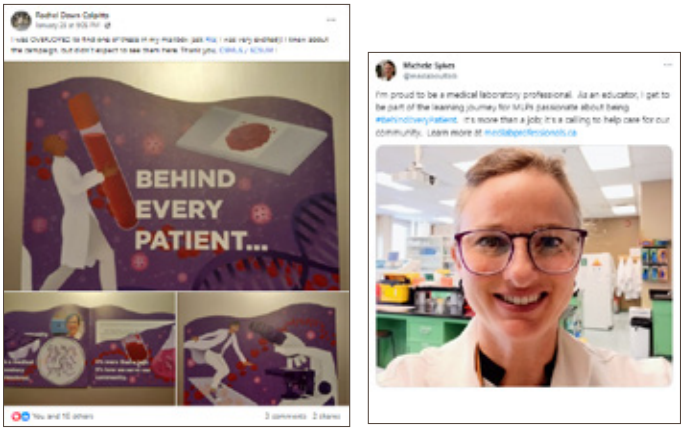
Early in the year, we launched our latest public awareness campaign with the goal of helping different communities across Canada see who is behind the medical tests performed when they need answers most. CSMLS sent more than 100,000 pamphlets (see above) to the communities of 35 medical laboratory professionals, who kindly shared their stories with us and with their neighbours.

Each pamphlet features the unique story of a medical laboratory professional who cares for their patients, showing how each puts their heart and soul into every result.

But we didn't stop there. When the pamphlets were on their way to mailboxes, we launched a digital campaign, and you helped make it even bigger. We asked medical laboratory professionals and their communities to be part of this recognition by visiting **medlabprofessionals.ca** and sharing a post where they could let Canada's medical laboratory professionals know they are seen.

And they did! #BehindEveryPatient posts were shared more than 4,000 times all over Facebook, Instagram, and X, making sure Canadians know it's more than a job; it's a calling to care for the health of your communities. MLT and member Rachel Colpitts and CSMLS President Michele Sykes were a couple of prominent #Labvocates who celebrated the work of the people behind the bench.

CSMLS is committed to making sure Canadians know you're the professional who works with expertise and passion for their health. We are grateful to every member who took part in this campaign. Your efforts and willingness to care for your peers are greatly appreciated.



Social media posts from CSMLS member Rachel Colpitts and CSMLS President Michele Sykes

NATIONAL VOLUNTEER WEEK
APRIL 14–20, 2024

Volunteers are at the heart of every society, and without a doubt they're at the heart of countless CSMLS initiatives. Their knowledge, expertise, and willingness to give make the Board of Directors, Educator Committee, Exam Panels, and every other committee, panel, task force, and volunteer group what they are today.

This April, CSMLS would like to thank each and every one of our volunteers for their commitment to the medical laboratory profession. Thank you for demonstrating leadership by generously giving your time, expertise, and mentorship. At CSMLS and in your daily work, you have a crucial role in patient care and the future of the profession!

We want to give a special thank you to our 2023 volunteers.

Alberto Jr Pineda
Alina Turner
Allie Shields
Alrene Murray
Amanda Cocca
Amanda Hess
Amanda Van Spronsen
Amanda Wong
Amber Grassi
Amy Carver
Andrew Leone
Angela Yim
Areesha Wasim
Atusa Firouzabadi
Barbara Wong
Bernard Hartung
Betty Sin Wah Chan
Brendan O'Brien
Brittney Bragnalo
Brittney Grondin
Carlos Pereira
Carolyn Hallett
Catherine Bodroghy
Chelsea Busby
Chelsey Panagapko
Cherise Ens
Christine Bruce
Claire Hilscher
Corey Murray
Danielle McLennan
Danielle Meister
Danni Zhang
Dannielle Lunsted
Danny Rowsell
Daryl Foot
Delaney Lee Nickerson
Dennet Pritchard
Devena Steinmann
Diana Christianson
Elizabeth Kondratuk
Elizabeth Quint
Emily Chen
Fadila Kacimi
Feifei Chen (Emma)
Florentino Roque II
Frederick Wong
Gregory Hardy
Guylaine Michaud
Hansika Deepak
Helene Goulding
Ian Grace

Ike Agbassi
Irina Bacanu
Ismaila Amusat
Ivan Aditya
Ivan Miller
Jackson Y H Wu
Janice Lee
Jean-Paul Nadeau
Jeff Ray Arlan Sanchez
Jelili Mustapha
Jennifer Cole
Jennifer McCulloch
Jessica Bourke
Jesusa Paz Castillo
Jiaming Du
Johane Arsenault
John Soltys
Josh MacDonald
Joshua MacDonald
Julie Anne Fisher
Julie Carruthers
Julie Horne
Julius Valido
Junkyu Lee
Karen Moffat
Karly Robles
Katherene Ogbulafor
Katherine Chorneyko
Kathleen Hitchings
Kathy Chun
Kathy Giang
Kayla Burke
Kaylan Symes
Kehinde Dada
Kelsey Alain
Kendra Soukeroff
Kenneth Wong
Kim Alkalay
Kimberly Wheelans
Kristi Lew
Lalena Stary
Laura Penitch
Lavern Bourne
Lisa Mantifel
Lisette Vienneau
Luc Andre Richard
Lucie Alain
Lydia Keczem
Ma. Catherine Ancheta
Madison Sielski
Mallory Renschler
Marcela Navarro
Marcene Campbell
Marie-France Jemus
Mariela Soifer
Mario D'Angelo
Mario Hemens
Mark Hawkins
Mary Costantino
Masaye Tanaka
Masi Basiri
Mathew Carter
Melissa Mikl
Melissa Walsh
Michele Sykes
Michelle Corinne Lui
Michelle Dunn
Mikael Khan
Nargis Mohamed Hirji
Natasha Perepelkin
Nicola Salter
Nikki Laidley
Nneka Odoka
Olayiwola Orisadare
Patricia Longpre
Patrick Smith
Paulette Van Vliet
Pauline Tomlin
Pritpaul Ruby Jaswal
Rachelle Kingsler
Rafik Ragheb
Rajesh Ramoutar
Reginald Yiu
Roberta Martindale
Robyn Grant
Roche Sinoben
Roksoliana Sidorenko
Samantha Tiller
Samira Ahmed
Sana Chaudhry
Sandra Soucie
Saranya Arnoldo
Shannon Morris
Sharon Brideau
Sharon Leal
Shawn Gilbert
Shawn Ingersoll
Shawna Lee
Shelley Black
Sherri Wilson
Simone Chaboillez
Sohal Pandya
Stephanie Eccles
Stephanie Taylor
Sukhbir Matharu
Susanne Folco
Tiffany Clouston
Tricia Lynn VanDenakker
Ugochukwu Nwaeme
Valentin (Tino) Villatoro
Venessa Le Blanc
Victoria Massey
Wesley Nishi
Yu-Wei Roy Chen

2023 ANNUAL REPORT

The *CSMLS 2023 Annual Report* is available to view at **csmls.org/AnnualReport.**

Learn more about our achievements in 2023, including financial figures, public and government advocacy, updates from the Board of Directors, volunteers, award winners, and much more.

JOIN US AT THE **CSMLS ANNUAL GENERAL MEETING**

The CSMLS Annual General Meeting (AGM) will be held as an in-person meeting on Friday, June 21, 2024, at the St. John's Conference Centre in St. John's, NL, as part of the LABCON2024 conference program.

Eligible CSMLS members are permitted to vote on bylaws during the AGM. If you cannot attend, we encourage you to have your voice represented by designating a proxy to vote on your behalf. To learn more about proxy voting, please visit **go.csmls.org/proxy.**

At the AGM, we will announce the successful election winners and introduce the Board of Directors. These volunteers are responsible for making decisions and charting the course of the Society's strategy, which has an impact on all members across Canada. As per the bylaws' Article 4.2.1 (Board of Directors), approved at the 2023 AGM, the terms for the following open Directors' offices will commence on July 1, 2024:

Director, MLA
Director, Quebec

The Board of Directors will present updates on activities so far this year, as well as review key achievements and events from 2023.

We encourage all members to attend and be informed. Details on how to attend will be emailed to members and available through **eNEWS.**

BOARD OF DIRECTORS, TERMS ARE CHANGING

During the 2023 Annual General Meeting, members approved a change to the Board of Directors' service term bylaw, which affects the start date for newly elected Directors.

As per the revised bylaw, elected Directors will now commence their terms on July 1st of the election year instead of January 1st of the following year. CSMLS President Michele Sykes affirmed, "This reduces the delay between elections and terms, creating a smoother volunteer experience for Directors, as there is no unnecessary waiting period."

The current Board of Directors has agreed to extend their service term by six months to facilitate this change, allowing continuity and a clearer knowledge transfer between current and incoming Directors.

Kim Alkalay, previous Vice President, started a new career as an educational consultant and resigned from the Board of Directors in March. Allie Shields, already elected into the officers succession, assumed the Vice President role immediately. She will become the President on July 1, 2024. The Board will elect a new Vice President at the June Board Meeting.

We want to thank every Director who, as a volunteer, agreed to dedicate time to the service of our membership.

KEY DATES	OLD BYLAW	REVISED BYLAW
Start of term	January 1, 2025	July 1, 2024

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. The CSMLS Board of Directors, staff, and volunteers attend meetings, conferences, and events on behalf of CSMLS members and the entire medical laboratory profession.

Here are some of the places where your voice was recently heard:

DECEMBER

MLT Micro-Credentials — Ontario Tech University Meeting
VIRTUAL

EQual (Accreditation Canada) Council Executive Meeting
VIRTUAL

Public Health Agency of Canada (PHAC), Northern Remote Indigenous (NRI) Communities Laboratory Engagement Working Group
VIRTUAL

Organizations for Health Action (HEAL) Quarterly Meeting
OTTAWA, ON

MLA Training — Ontario Tech University Meeting
VIRTUAL

JANUARY

Ontario Ministry of Finance 2024 Budget Consultations
MISSISSAUGA, ON

Virtual Student Presentation: Introducing Students to CSMLS and the Exam
VIRTUAL

HEAL Management Team Meeting
VIRTUAL

Canadian Alliance of Medical Laboratory Professionals Regulators (CAMLPR) Forum Meeting
VIRTUAL

Team Primary Care Inter-Professional Collaborative
VIRTUAL

PHAC, NRI Laboratory Engagement Working Group
VIRTUAL

B.C. Ministry of Health — Allied Health Strategic Plan
VIRTUAL

This plan for HHR retention includes a bursary for internationally educated medical laboratory technologists (IEMLTs) to aid with the costs associated with becoming certified to work in British Columbia.

CSMLS is proud to have been able to support B.C.'s Ministry of Health in the creation of this resource. We look forward to working cooperatively with the B.C. Allied Health Secretariat to strengthen the medical laboratory workforce in the province.

International Federation of Biomedical Laboratory Science (IFBLS) Management Committee
VIRTUAL

Ontario Ministry of Health — MLA Regulation Meeting
VIRTUAL

Canadian Network of Agencies of Regulation (CNAR) January 2024 Virtual Discussion: Hot Topics in International Mobility and Professional Registration
VIRTUAL

Conference Board of Canada — National Immigration Council (NIC)
VIRTUAL

CNAR Education Program Advisory Committee
VIRTUAL

FEBRUARY

B.C. Ministry of Health — Allied Health Association Collaborative
VIRTUAL

PHAC, NRI Laboratory Engagement Working Group
VIRTUAL

IFBLS Management Committee
HAMILTON, ON

MARCH

HEAL Management Team
VIRTUAL

PHAC, NRI Laboratory Engagement Working Group
VIRTUAL

HEAL Quarterly Meeting
VIRTUAL

CNAR Education Program Advisory Committee
VIRTUAL

EQual Forum Meeting
VIRTUAL

Colleges and Institutes Canada (CICan) Virtu-WIL — Advisory Committee Meeting
VIRTUAL

Grants, Scholarships & Awards

David Ball Award
Recognize members who have made notable contributions to their community

Honorary Awards
For a member or non-member in recognition of outstanding service to the CSMLS

Honorary Fellowship Award
For outstanding contribution to the CSMLS

Distinguished Fellowship Award
The highest level of recognition to a member; it is granted to members who have made significant contributions to the profession

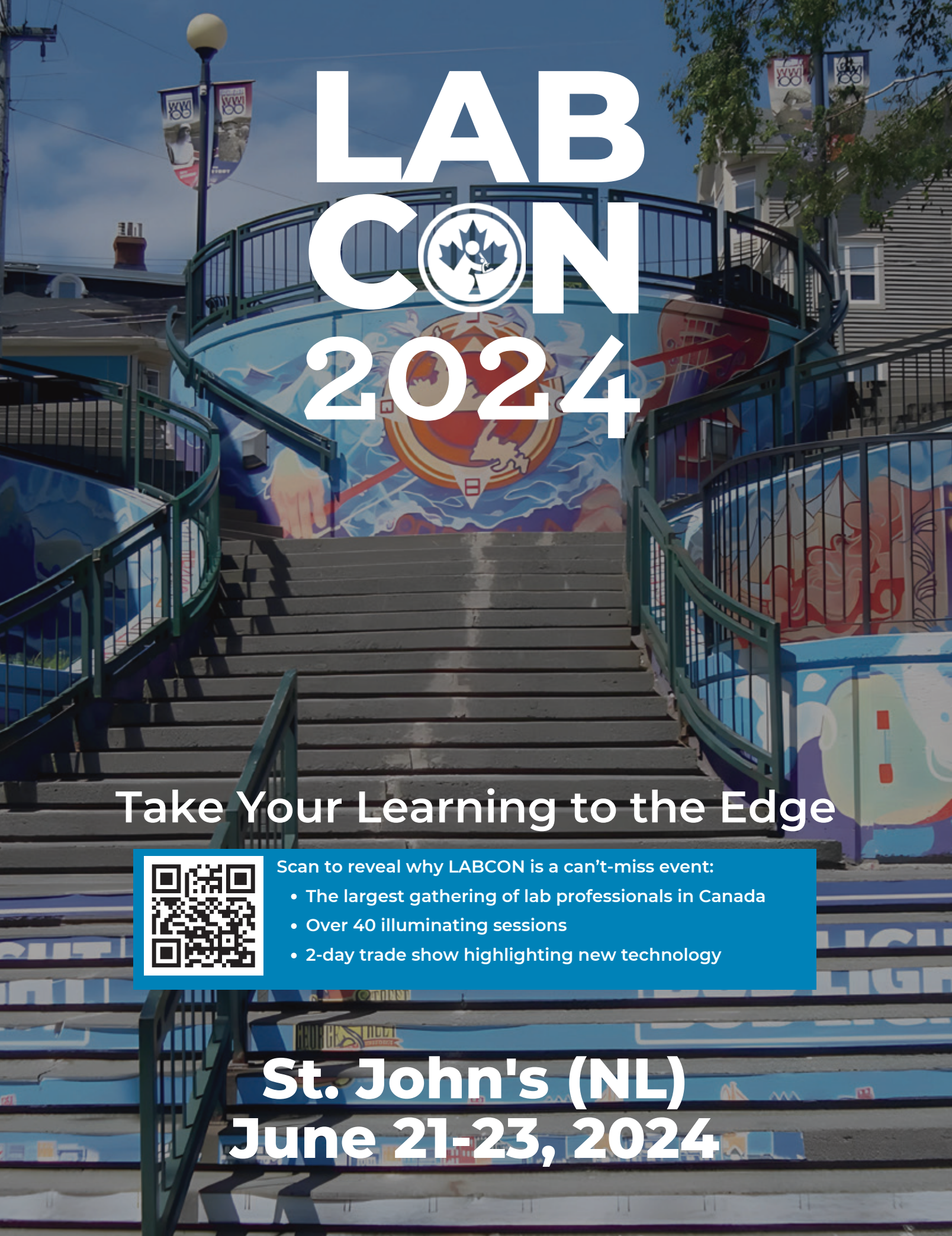
Apply before November 1, 2024

Industry-leading Webinars on How To:

Excel in the First 90 Days as a New Leader

Make Sure You and Your Staff Keep Each Other Accountable

Walk and Talk as an Inspirational Leader


LAB
CON
2024
Take Your Learning to the Edge
Scan to reveal why LABCON is a can't-miss event:
• The largest gathering of lab professionals in Canada
• Over 40 illuminating sessions
• 2-day trade show highlighting new technology
St. John's (NL)
June 21-23, 2024