

Friday, May 25

P01: 0930-1045

Top Ten Preanalytical Threats to Accurate Results

Dennis J. Ernst, MT(ASCP), NCPT(NCCT)

Session Description:

This presentation discusses errors that can alter test results during blood specimen collection, transportation and storage. Thirty preanalytical errors are covered including patient misidentification, specimen mislabeling, prolonged tourniquet application, an incorrect order of draw, contamination with IV fluids, improper specimen storage, inadequate centrifugation, delays in processing and many others (based on the latest CLSI standards and guidelines).

At the end of this session, you will be able to:

1. Identify errors in specimen collection, transportation and processing that can significantly alter results
2. Train other allied health care professionals assigned to phlebotomy duties to become aware of preanalytical errors and the effect they have on the specimens collected and transported to the laboratory
3. List the analytes affected by delayed processing and the affect that time, temperature and storage conditions can have on test results

Speaker Bio:

Dennis J. Ernst MT(ASCP) is the Director of the Center for Phlebotomy Education, Inc. in Corydon, Indiana. Besides being a highly recruited international lecturer, he has authored over 50 articles on phlebotomy, two textbooks and three desk references. He chairs the CLSI working groups that write the standards for specimen collection, and writes the Phlebotomy Today newsletter, read monthly by over 14,000 healthcare professionals worldwide.

As a subject-matter expert, he has appeared on Dateline NBC, and quoted by the Wall Street Journal, the Washington Post, the Weekly Reader, and, yes, even the National Inquirer. He is regularly recruited by the CDC to participate on Evidence Review Panels that develop Best Practices for the industry, and serves as an expert witness in phlebotomy-related litigation.

Friday, May 25

A01: 1130-1245

How to Improve Local Citizen-Centered Healthcare Services Using New Diagnostic and Laboratory Solutions

Martina Jürs, Reg. Biomedical scientist and Diploma of Public Administration (Health Management)

Session Description:

The Danish Association of Biomedical Laboratory Scientists has a strategy to offer local citizens diagnostic analysis of the highest quality, outside hospitals. Two Danish projects, the mobile laboratory (bus) and a BLS quality assuring in homecare testing, makes it possible to improve health and life quality, create a better patient flow and reduce pressure on the hospitals. With the use of POCT technology it has proven possible to turn the existing approach 180 degrees. Now patients do not necessarily need to come to the hospital; the hospital can come to them!

At the end of this session, you will be able to:

1. Be inspired to see new tasks for BLS's
2. Learn about the Danish Laboratory bus
3. Identify how BLS adds value to homecare in municipalities

Speaker Bio:

Martina is the Vice President of the Association of Biomedical Laboratory Scientists. Her previous positions include: Department Manager in biochemistry, Shop Steward and she has earned her BLS in microbiology and biochemistry.

The focus areas of her work as Vice-president of dbio are:

- The BLS profession's competencies
- The BLS profession's identity
- The BLS profession's education
- Further education for BLS (CPD)
- Research within the BLS profession
- BLS professional ethics
- BLS professional management

Friday, May 25

A02: 1130-1245

The Genetics of Hemoglobinopathies - Molecular Detectives at Work

Betty Ann Hohenadel, BSc, MLT

Session Description:

Hemoglobinopathies are the most common inherited disorder in the world. This session will explain the multi-gene aspect and how various mutations interact to produce diverse phenotypes. Their prevalence in Canada, risks for families and common and rarer mutations will be discussed. An overview of how Ontario's Provincial Hemoglobinopathy Laboratory tackles genetic testing for this complex disorder will be reviewed. Examples and case studies will be used to demonstrate how solving the genetics of hematological findings sometimes takes a bit of detective work.

At the end of this session, you will be able to:

1. Explain the multi-gene aspect of hemoglobinopathies, covering the alpha, beta, delta and gamma genes
2. Appreciate how different genes and various mutations interact to produce diverse phenotypes
3. Recognize the risks associated with and prevalence of the disorder
4. Correlate genetic test results with hematologic findings
5. Have a better understanding of how Ontario's Provincial Hemoglobinopathy Laboratory tackles this complex genetic disorder

Speaker Bio:

Betty Ann Hohenadel received her undergraduate degree in Biomedical Science and Molecular Genetics from the University of Guelph and she went on to complete the Genetics Technology program at the Michener Institute in Toronto. She started working for Hamilton Health Sciences in 2004, where she has augmented her knowledge in Ontario's Provincial Hemoglobinopathy Laboratory. She is actively involved in implementing new technology as testing methodologies change, evolve and expand for this complex genetic disorder. When she is not out discovering Canada and the world beyond, she makes her home in Cambridge, Ontario.

Friday, May 25

A03: 1130-1245

What you need to know about Canadian Blood Services' Cord Blood Bank

Nicholas Dibdin, BSc, MLT, PMP

Session Description:

Are you aware that Canadian Blood Services operates the national public cord blood bank and that until 2013, Canada was the only G7 country that did not have a national public cord blood bank? Come and learn about this precious public resource that is now helping to save lives both in Canada and around the world and why ethnic diversity is important and drives the need for recruitment of diverse donors.

At the end of this session, you will be able to:

1. Understand the role Canadian Blood Services plays in public cord blood banking
2. Understand why donor recruitment, diversity and product quality is important in cord blood banking
3. Gain insight into roles that CSMLS members play at Canadian Blood Services
4. Be aware of the Cord Blood For Research Program

Speaker Bio:

Nick is currently the Associate Director for the Canadian Blood Services' Cord Blood Bank and Stem Cell Manufacturing program and has been with Canadian Blood Services for over 19 years in numerous capacities. He has over 20 years of experience in laboratory environments, supply chain management, biologics manufacturing and project management. Nick has a Bachelor of Science from the University of Windsor, is a registered MLT (and CSMLS member) and a certified Project Management Professional. His latest adventure involves coaching clients to inspire them to maximize their potential. He is married with two kids, who are both attending University.

Friday, May 25

A04: 1130-1245

VTE Screening and Diagnosis: The Role of D-dimer Testing vs. Imaging

Sponsored by Stago

Paul Riley, PhD, MBA

Session Description:

D-dimer assays are most useful when demonstrated to have high clinical sensitivity to detect all patients with venous thromboembolism (VTE). This presentation will not only cover the clinical impact of VTE but also how D-dimer and pretest probability utilization potentially saves healthcare dollars by preventing false positives, resulting in fewer unneeded imaging procedures.

At the end of this session, you will be able to:

1. Define and differentiate DVT, PE and VTE
2. Learn PE prevalence, risk factors, mechanism of disease, symptoms, and clinical decision rules for risk stratification
3. Explain the role of clinical decision rules and D-dimer in the diagnostic algorithm and their impact on imaging utilization

Speaker Bio:

Paul earned a PhD in biochemistry from Temple University in 2006, with the subject of the dissertation regarding the function of coagulation factor XI. He also did postdoctoral training in a related area before becoming a product manager and scientific affairs specialist in 2009. During his time at Stago, Paul also completed an MBA degree program at Cornell University in 2014. He has spoken to dozens of medical technologist, clinical laboratory scientist, pharmacist and clinician audiences about various topics within hemostasis and coagulation. He also has a great interest in working with clinical pathologists, pharmacists, basic scientists, and pharmaceutical researchers to perform studies and publish; contributing to advancement of the hemostasis and coagulation science.

Friday, May 25

B01: 1345-1500

Delivering World-Class Customer Service

Dennis J. Ernst, MT(ASCP), NCPT(NCCT)

Session Description:

This presentation discusses key concepts in customer service excellence. Emphasis is placed on telephone etiquette, behaviours that reflect and detract from professionalism, positive patient interactions, and dealing with difficult/demanding patients and co-workers. The presentation concludes with a discussion on how managers can inspire a culture of customer service excellence.

At the end of this session, you will be able to:

1. Identify behaviors that impart a negative impression on the clinical laboratory
2. Discuss the importance of projecting a positive impression of the clinical laboratory
3. List strategies managers can implement to foster a culture of customer service excellence
4. List examples of poor phone etiquette that present a negative impression

Speaker Bio:

Dennis J. Ernst MT(ASCP) is the Director of the Center for Phlebotomy Education, Inc. in Corydon, Indiana. Besides being a highly recruited international lecturer, he has authored over 50 articles on phlebotomy, two textbooks and three desk references. He chairs the CLSI working groups that write the standards for specimen collection, and writes the Phlebotomy Today newsletter, read monthly by over 14,000 healthcare professionals worldwide.

As a subject-matter expert, he has appeared on Dateline NBC, and quoted by the Wall Street Journal, the Washington Post, the Weekly Reader, and, yes, even the National Inquirer. He is regularly recruited by the CDC to participate on Evidence Review Panels that develop Best Practices for the industry, and serves as an expert witness in phlebotomy-related litigation.

Friday, May 25

B02: 1345-1500

Exploring Prenatal Genetics: Past, Present, Future

Allison Belfall, BSc, MLT

Session Description:

Non-Invasive Prenatal Testing (NIPT) is a screening tool used to detect genetic disorders early in fetal development and is performed by only two genetics laboratories in Canada. This advanced science test is beneficial to patients because the test is performed using maternal blood eliminating the risk of miscarriage in comparison to other invasive prenatal procedures. Successful NIPT relies on isolating sufficient amounts of fetal cell-free DNA (cfDNA) from the maternal sample and advanced analysis methods. An inside look from one of these labs will provide the learner with a detailed description of this tests benefits, challenges, quality concerns, genetic counselling considerations, and ethical dilemmas.

At the end of this session, you will be able to:

1. Compare the differences between first trimester biochemical screening and Non-Invasive Prenatal Testing (NIPT)
2. Define genetic disorders screened using NIPT including chromosomal whole chromosome, micro-deletion, and single gene disorders
3. Describe advances related to testing circulating cell-free fetal DNA within a maternal blood sample
4. Discuss limitations and challenges associated with NIPT

Speaker Bio:

Allison graduated from The University of Western Ontario in 2013 with an Honors Specialization in Genetics. She then attended the Michener Institute for Applied Health Sciences completing her diploma in Genetics Technology in 2015. Allison is employed at Lifelabs Genetics located in Toronto as a Molecular Genetics Technologist. Allison values the positive impact the medical laboratory profession has on public health and is interested in advancements in genetics.

Friday, May 25

B03: 1345-1500

Vector-Borne Villains: Is it Safe to Go Outdoors?

Jim Gauthier, MLT, CIC

Session Description:

As the world shrinks (and warms up), new pathogens are being introduced to warmer parts of the world, spread by mosquitoes, flies, ticks, and other biting insects. This presentation will examine some of these illnesses and preventative steps that travellers, visitors, or residents can take to protect themselves.

At the end of this session, you will be able to:

1. Understand the infectious risk of being bitten by a mosquito in various parts of the world
2. Understand the infectious risk of being bitten by other insects (ticks, lice, flies, etc.)
3. Apply preventative measure to avoid being exposed to vector-borne illnesses

Speaker Bio:

Jim is a medical laboratory technologist with over 27 years of experience in Infection Control. He has worked in microbiology labs across the country and has a passion for the prevention of infections. Jim has lectured widely in Canada and the US, and has presented also in Europe and New Zealand. He acts as the Senior Clinical Advisor for Infection Control for Diversey.

Friday, May 25

B04: 1345-1500

Weak D, Partial D, and Variant D: Limitations of Serological Testing and Promise of RHD Genotyping

Bing Zhang, BSc, MLT, SBB

Session Description:

This presentation addresses the misconception associated with RhD typing, discusses the limitations of current RhD serological typing, and states that it is necessary to further examine the subgroups of D antigen the patient may have, and take different clinical actions, accordingly. RHD genotyping is discussed, implications on resolving the current D antigen typing discrepancies are examined. Benefits, challenges, algorithms and a transitional strategy of incorporating RHD genotyping into routine transfusion services are also discussed.

At the end of this session, you will be able to:

1. Describe the definitions of weak D and partial D, methods of serological testing, choice of reagents, and limitations of current practice
2. Define RHD genotyping and its applications on resolving the limitations of current weak D and partial D testing
3. Explain the impacts of RHD genotyping on red blood cell transfusion, antepartum care for pregnant women, and the cost saving benefits and preserving Rh negative red blood cells associated the application of RHD genotyping
4. Discuss the possible actions to be taken by your transfusion service to address the limitations of current variant D testing

Speaker Bio:

Bing Zhang, BSc MLT(CSMLS), MLS(ASCP)CM, SBB(ASCP)CM is a CSMLS certified MLT and is also certified as a medical laboratory scientist (MLS) by the American Society for Clinical Pathology (ASCP). He is licensed and registered by the Saskatchewan Society of Medical Laboratory Technologists (SSMLT) as well as a certified specialist in blood banking (SBB) by the ASCP. Bing has more than 10 years of experience in transfusion services and has worked for seven years in the blood bank department of The Ohio State University Medical Center.

Friday, May 25

C01: 1530-1645

Become a BS (Bad Science) Detector!

Valentin Villatoro, MEd, BSc (MLS), MLT

Amanda VanSpronsen, MSc, BSc (MLS), MLT

Session Description:

Ever wonder about how the anti-vaxxers got started? Has the credibility of science suffered in the age of "fake news"? Scientific research is in crisis. Researchers are pressured to publish, or perish. Predatory journals will publish anything. The media sensationalize stories in order to boost traffic and sales. How do we cut through the BS (Bad Science) in order to see the real picture? Participants will learn about several types of bias that many studies are prone to, in order to become a more savvy, critical consumer of scientific information. This skill is essential as health professionals and as members of the general public.

At the end of this session, you will be able to:

1. Understand the need to be critical about published scientific information
2. Understand several types of bias, including publication bias, selection bias, and measurement bias
3. Apply basic critical analysis concepts to the evaluation of published scientific information

Speaker Bio:

Amanda VanSpronsen is an Associate Professor in MLS at the University of Alberta, and her research interests include MLT professional development and appropriate laboratory utilization. For the past four years, she has facilitated a senior-level course focused on contemporary topics in Medical Laboratory Science, such as patient safety, private/public debates, and the sociology of the healthcare system.

Valentin Villatoro completed his MEd in Health Sciences Education, and has built expertise in online learning platforms, including ways to engage and educate students, healthcare professionals, patients, and the public. He has taken on the role of clinical hematology instructor and clinical coordinator for the MLS program.

Friday, May 25

C02: 1530-1645

Genetic Testing in Obstetrics and Gynecology: How laboratory assays impact providers and patients

Melissa Hicks, MS, CGC

Session Description:

A look at the impact and implications of reproductive genetic testing technologies from the eyes of a clinical-turned-laboratory genetic counselor. Delve into how the diagnostic power and limitations of assays like circulating cell-free DNA screening, next-generation sequencing carrier screening panels, and prenatal aCGH/SNP, and appreciate how they affect the patients who are on the receiving end of a finalized report.

At the end of this session, you will be able to:

1. Identify indications for and approaches to genetic carrier screening for single-gene disorders
2. Identify indications for and methods of prenatal screening for fetal aneuploidy
3. Identify indications for and methods of prenatal diagnosis for fetal anomalies
4. Discuss benefits of and limitations to various prenatal screening and diagnostic tests
5. Appreciate the impact of these tests via real-world case examples from a prenatal genetics clinic

Speaker Bio:

Ms. Hicks is a Certified Genetic Counselor at DMC University Laboratories in Detroit, Michigan and the past program coordinator for the Division of Reproductive Genetics at Hutzel Women's Hospital. She is a graduate of the Wayne State University's Genetic Counseling Master's program, and has practiced in reproductive, pediatric, and hereditary cancer genetics in both Canada and the United States. She has co-authored two OB textbook chapters focused on prenatal genetic screening. Melissa also assists in the teaching and training of genetic counseling students, fellows, residents and medical students at WSU.

Friday, May 25

C03: 1530-1645

The New Era of Direct Oral Anticoagulants: Essentials for the practicing technologist

Rita Selby, MD, FRCPC

Session Description:

For many decades we have had various heparins and warfarin as our only anticoagulants and understood and appreciated their effect on our routine coagulation tests. However, the last decade has seen the advent of several new, oral anticoagulants that do not require laboratory monitoring for dose adjustment, and have significantly changed the way anticoagulation is delivered. Since these drugs have the potential to affect most of our coagulation assays it is essential that the technologist be knowledgeable about these effects, and have some understanding of current and upcoming reversal agents.

At the end of this session, you will be able to:

1. List the various traditional and new oral anticoagulants and their mechanisms of action
2. Appreciate the many indications and uses of new oral anticoagulants in clinical hematology today
3. Have a detailed understanding of how new oral anticoagulants affect routine, every day and special coagulation assays
4. Understand what agents are used to reverse these anticoagulants in bleeding patients

Speaker Bio:

Dr. Rita Selby is a clinical hematologist and medical director of the coagulation laboratories at University Health Network and Sunnybrook Health Sciences Centre, both reference coagulation laboratories providing special coagulation testing for several Ontario hospitals and all of Lifelabs' clients. Her research interests include coagulation laboratory quality, resource utilization of laboratory testing and pragmatic clinical trials in thrombosis, hemostasis and anticoagulation. She is the author of the popular coagulation handbook used by most Ontario laboratories (Bloody easy: Coagulation Simplified) and has developed and taught the mandatory coagulation curriculum for University of Toronto, Hematology and Hematopathology medical residency trainees since 2009. She is a current member of the NASCOLA EQA committee and a Hematology Scientific Committee member at the IQMH (Institute for Quality Management in Healthcare) from 2011 to 2017.

Friday, May 25

C04: 1530-1645

Comprehensive Surveillance of Drugs of Abuse by Multisegment Injection-Capillary Electrophoresis-Mass Spectrometry

Philip Britz-McKibbin, PhD

Session Description:

New technologies are urgently needed for reliable yet broad spectrum drug screening given a worldwide epidemic of prescription drugs that has contributed to devastating socioeconomic impacts on public health. Immunoassays are widely used for urinary drug testing, but are prone to bias due to antibody cross-reactivity for a known panel of drugs of abuse (DoA). These limitations impact patient safety when monitoring for medication compliance, drug substitution or misuse/abuse in high risk populations. Herein, we introduce a high throughput platform for nontargeted screening of a broad spectrum of DoA and their urinary metabolites based on multisegment injection-capillary electrophoresis-mass spectrometry (MSI-CE-MS). MSI-CE-MS enables serial injections of ten independent samples within a single run (< 2-3 min/sample) to greatly boost sample throughput while ensuring quality assurance when coupled to high resolution, accurate MS with full-scan data acquisition. This approach offers a rapid yet accurate method for simultaneous detection and unambiguous identification of DoA at their screening cut-off levels in human urine while allowing for specimen verification and retrospective testing of synthetic opioids and designer drugs that elude conventional drug tests.

At the end of this session, you will be able to:

1. Learn about an alarming worldwide public health crisis related to widespread prescription drug abuse as related to pain management and mental health
2. Appreciate limitations of conventional targeted drug screening methods applied to human urine based on immunoassays
3. Understand the benefits of multiplexed separation techniques when coupled to high resolution mass spectrometry for high throughput yet non-targeted drug screening
4. Understand how designer drugs and synthetic opioids not included within screening panels can be detected and identified with quality assurance
5. Appreciate how drug surveillance can confirm drug compliance while revealing poly drug misuse that may compromise treatment efficacy or contribute to adverse health outcomes

Speaker Bio:

Philip Britz-McKibbin is a professor at the Department of Chemistry and Chemical Biology and a Cystic Fibrosis Canada researcher at McMaster University in Hamilton, Ontario. Dr. Britz-McKibbin obtained his BSc in Chemistry (U. Toronto, 1994), and PhD in Analytical Chemistry (UBC, 2000) and a Japan Society for Promotion of Science PDF position in Japan (Himeji Institute of Technology, 2001-2003) prior to starting his academic position at McMaster. His research interests in bio-analytical chemistry, separation science, mass spectrometry and metabolomics include the design of novel analytical strategies to quantify and identify metabolites of clinical significance in biological samples, as well as characterization of their interactions with protein. Philip's laboratory aims to discover new biomarkers that support early detection and treatment of human diseases relevant to population health and preventative medicine with emphasis on inherited metabolic disorders, and chronic human diseases.