

Lab Reporter

Medical Laboratory Technology: It Matters Written by Malery Tatone



Medical Lab Technologists perform lab tests to keep our blood supply safe, help solve medical mysteries like SARS and West Nile Viruses, and help sick people get well. CSMLS (csmls.org)

Are you curious, fascinated, process-oriented, accurate, independent? Do you like to work on a multi-disciplinary team? There's a growing demand for Medical Laboratory Technologists! With a professional level salary, and room for career advancement, you can work anywhere in Canada with no restrictions. With an ever evolving field, continuing education is an essential and mandatory part of certification, allowing you to continually grow and learn.

The field of medical laboratory technology allows you to perform sophisticated laboratory tests that are used to help diagnose and

treat disease. Approximately 70% of laboratory results have a direct and immediate impact on a patient's diagnoses. It's a career where details matter, and you can make a difference.

There are several areas where you can specialize in. Chemistry is used to detect chemicals, drugs, and hormones; Microbiology detects disease causing agents such as bacteria, fungi, viruses, and parasites; Hematology looks at blood cells to detect diseases/ disorders of the blood; Transfusion Science conducts blood typing and compatibility tests; Histology detects disease in tissues; Cytology conducts

tests on cells to detect cancer; Genetics diagnoses genetic diseases. Other specialties include immunology, electron microscopy, virology, parasitology, and flow cytometry.

There are currently five accredited schools that offer Medical Laboratory Technology and successful completion of the program qualifies you to write the National Certification Exam through the Canadian Society of Medical Laboratory Technologists. Ontario schools have a 93% success rate with the exam (CSMLS <http://csmls.org/>). With a great demand for Medical Laboratory Technologists, there is a career waiting for you! Visit CSMLS.org for more information. (<http://csmls.org/>)

Issue 6

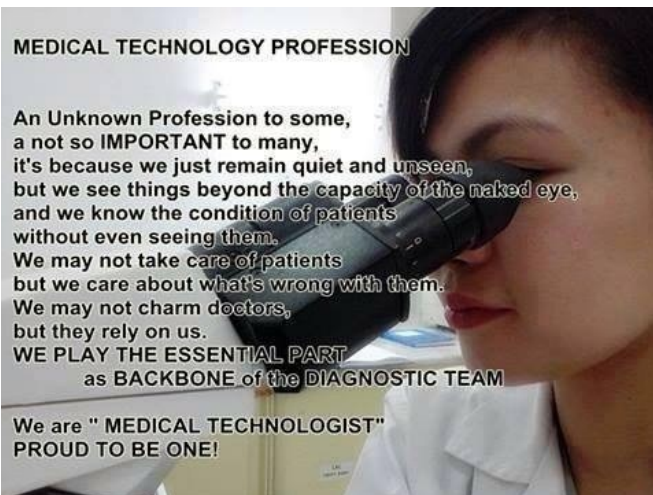
April 2015

Special points of interest:

- Explore exciting career options and delve into the world of Medical Laboratory Technology.
- OSMH has new and exciting in-house testing: C.diff and Celiac testing are now live!
- What happens to your specimen when it is received in lab?
- In the eyes of a student: How lean methodologies benefit everyone.

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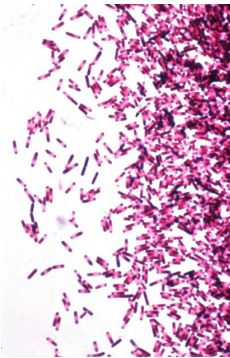
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Name That Acronym!

- | | |
|------------|--|
| 1. CBC | 8. Histology |
| 2. ESB | 7. Cytology |
| 3. LFT | 6. Clostridium difficile |
| 4. GOMED | 5. Transfusion Related Acute Lung Injury |
| 5. TRALI | 4. Grey Bruce Orillia Muskoka Electronic Documentation |
| 6. C. DIFF | 3. Liver Function Test |
| 7. CYTO | 2. Extended Spectrum Beta Lactamase |
| 8. HISTO | 1. Complete Blood Count |



Sample collection is an important part of an MLAs profession. Minimizing pain and discomfort for the patient is a top priority. <http://www.sait.ca/about-sait/schools/school-of-health-and-public-safety/additional-information/photo-gallery.php>



C. diff bacteria



Normal villi of the small intestine



Damaged villi of the small intestine

Normal villi of the small intestine Vs. damaged villi seen in celiac disease. CeliAct <http://celiact.com/blog/ceciac-biopsy-and-how-hospitals-can-misread-them/>

What is A Medical Laboratory Assistant/Technician? Written by Paisley Shakell

Who MLAs are.

A Medical Laboratory Assistant/ Technician (MLA/T) performs a vital role in the medical laboratory team. They are trained in the collection of specimens for analysis, perform data entry, clerical services, can perform electrocardiograms (ECGs), and a variety of basic laboratory procedures.

Medical Laboratory Assistants have a strong sense of responsibility, a caring nature, and an interest in the well-being of others, particularly the sick and elderly. They demonstrate good intrapersonal skills, communication, and dependability.

All medical laboratory professionals protect the confidential-

ity of all patients at all times.

General Duties of an MLA.

MLAs participate as an important member of the laboratory team by providing patient reception, documentation, and use correct techniques to safely collect blood specimens.

MLAs also provide information to patients regarding proper collection of specimens. They appropriately handle and distribute specimens to be analyzed by other members of the laboratory team, and work to maintain a safe working environment.

Sometimes it is necessary to send samples to a referral

laboratory for more specialized testing. This is where MLAs are required to have a valid certificate for Transportation of Dangerous Goods in order to transport these samples safely. This certificate needs to be renewed every 3 years, and those possessing it must follow regulations for transporting such goods.

Personal Qualities for Success.

Medical laboratory professionals are dedicated to serving the health care needs of the public. The welfare of the patient and respect for dignity of the individual shall be paramount at all times.

C. diff is in the House Written by Anne Cook

In January of this year, the OSMH Microbiology Laboratory began in house testing for *Clostridium difficile*.

We are using a 2 tiered testing system. The screening test detects the GDH (glutamine dehydrogenase) enzyme which is present in all

Clostridium difficile bacteria. If this test is negative, there are no C. difficile organisms in the specimen. If the test is positive, it is then confirmed with a molecular DNA amplification test which detects a gene segment present in all known toxigenic C. difficile strains.

This process is very sensitive and the turn-around time is less than 24 hours. We are confident that by offering this testing in house, it will decrease isolation hours for our patients, thereby decreasing isolation costs for the hospital.

Celiac Testing has Arrived Written by Ron Spiker

Celiac disease is an inherited autoimmune disorder that affects the digestive process of the small intestine. When a person who has celiac disease consumes gluten, a protein found in wheat, rye and barley, the individual's immune system responds by attacking the small intestine and inhibiting the absorption of important nutrients into the body. Undiagnosed and untreated, celiac disease can lead to the development of other autoimmune disorders, as well as osteoporosis, infertility, neurological conditions and in rare cases, cancer.

Although statistics are not readily available, it is estimated that 1 in 133 persons in Canada are affected by celiac disease. At present there is no cure, but celiac disease is readily treated by following the gluten-free diet. The Chemistry Laboratory at OSMH has recently added Celiac Disease Testing to its menu. More specifically we are performing two ELISA assays (enzyme-linked immunosorbent assay) to confirm or rule out celiac disease. The two tests are tTG IgA (tissue transglutaminase IgA) and deamidated gliadin IgG. This

combination of tests will also identify celiac disease in IgA deficient patients, eliminating the need to test for total IgA.

The aim of performing this testing in-house is two-fold. First, we can save a substantial amount of operating cost (celiac testing costs the Laboratory approximately \$95.00 per patient if sent out to a reference lab). Second, we can offer this service to other hospitals or patients in our area at a savings to them but also as a source of revenue for OSMH.

A Day in the Life of a Specimen Written by Stephanie Duesharm

Laboratory specimens are an integral part of patient care, aiding in the physicians diagnosis and treatment of the patients condition. Up to 70% of decisions about a patient diagnosis/treatment are based on the results that the laboratory releases.

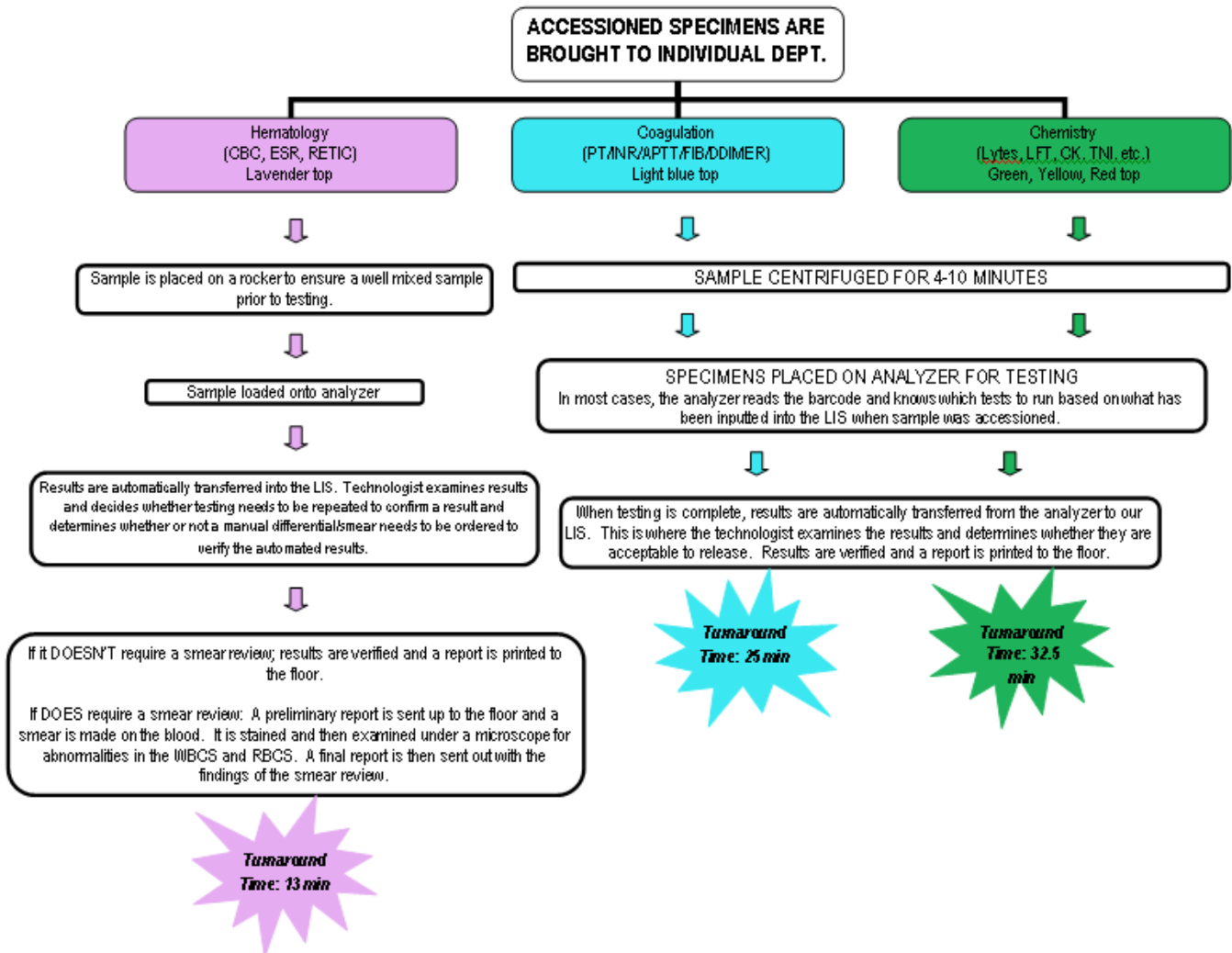
So what actually happens when a test is ordered by a physician? Does it just get collected and placed on an

analyzer? Believe it or not, there are many extra steps that need to happen in order to prepare the specimen for testing.

First of all, any specimen that is received in the laboratory is *accessioned* into the Laboratory Information System (LIS). What does *accessioning* entail? Once the specimen is received in the laboratory, it is checked over to ensure that the requisition is completed properly, that the

specimen is properly labeled, and we ensure that the quality of the sample is sufficient (i.e. under filled/overfilled, etc.) for testing. All of these “checks” are crucial to make sure that we are releasing quality results. The accessioner enters the patient’s CPI into the computer to bring up the patient’s account. At that point, all tests ordered by the physician are entered into the LIS, which in turn produces a unique barcode for each speci-

men that will help the analyzer identify the patient information, and which tests were ordered on that specific specimen. Once the sample is labeled with it’s barcode, it is dispersed to the department in which the testing will take place! The following chart illustrates the different processes that each sample goes through once received in its specific department.



Pathology Written by Margo Strachan

Most laboratory departments test blood and body fluids, but the Pathology department is primarily interested in body tissues.

It surprises people to learn that the majority of our samples do NOT come from the OR. Most of our work is collected in the out patient clin-

ics, Endoscopy and in the Diagnostic Imaging department. Small biopsies or skin lesion excisions are taken from suspicious areas and sent to pathology for examination. The result of these biopsies and excisions often determine if further surgery or treatment is required.

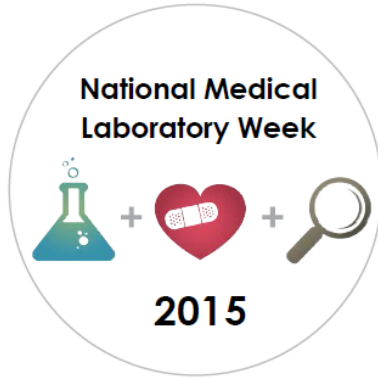
We utilize 2 technologists in the role of Pathology Assistants. They perform the gross dissection of tissues not previously diagnosed as malignant.

We also offer Cytology service to the hospital. Cytology is the study of individual cells. The cytotechnologist

prepares and screens the sample for abnormal cells before submitting the slide to a Pathologist.

All samples received in Pathology are reviewed microscopically by a pathologist before being reported.

From the Bench of the Student Written by Allie Cubberley



From my very first day here at OSMH, wandering into the hospital and having no idea what to expect, the lab staff welcomed me very openly and helped me to find my way. I came from UOIT in Oshawa, where I took medical laboratory sciences, a four-year program, to obtain a Bachelor of Science as a Medical Laboratory Technologist (MLT). I am just finishing my fourth year, which is spent entirely as a 32-week placement.

Lab staff at OSMH is very knowledgeable, friendly, and hard-working; I'm blown away each and every day with the amount of expertise, the amazing teamwork, and the family-like feeling down in the lab. The MLT skills that I have been taught here are second to none, except for the very important life lessons: that treats are the way to win-over any crowd, will-power is an unnecessary tool, and that chocolate is a food group.

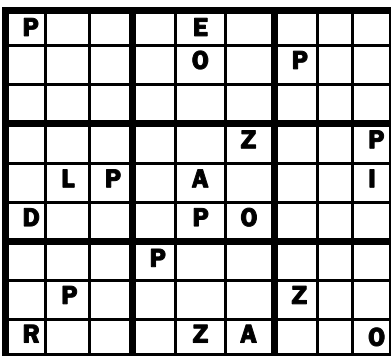


2015 UOIT Poster Day. From left to right: Anne Cook, Pam Calverley, Allie Cubberley, Diana Moczgodan, Kim Legere

The picture above was taken at UOIT during poster day. As part of the fourth year curriculum, students have to complete a school-year-long project; topics are assigned by the clinical site. The topic given to me was lean methodologies. The aim of lean methodologies is to reduce or eliminate as much waste as possible to make a process or workflow more efficient. The focus of my project was to assess if the staffing patterns were appropriate to

meet the workflow needs of the lab. Coming out of my project, the lab has decided to stagger beginning of shift times for the phlebotomy team. This has helped us to reduce a very large batch into several smaller batches and allows the lab to function much more efficiently. By staggering start times, we have been able to complete the morning bloodwork earlier!

Meditech to Cerner: A Laboratory Perspective Written by Brian Gorski



Sudoku: Use the letters from the word "POLARIZED" to complete the puzzle.

A Laboratory Information System (LIS) can best be described as the motor that drives the lab. A LIS involves everything from ordering tests, receiving a specimen, downloading ordered tests on that specimen to the analyzers for processing, and releasing results that can be viewed and accessed by physicians and nurses. Making the switch from one LIS to another is a task that has its challenges, but also has its rewards.

Meditech is the current LIS used at OSMH and has been

in use since 2009. It is a system that a lot of staff have gotten used to, and for some, the only system they have ever used. Cerner will be new to most staff members and will bring changes that are both intriguing and, at times, frustrating. Change is inevitable, and the Laboratory is prepared to go through this transition period knowing that the new LIS vastly benefits patient care.

Cerner will provide improved access to results by making results readily available in real time. By eliminating paper, requisitions as we

know them will no longer be required, and Physicians will no longer need to wait for printed reports, as all reports will be available electronically. This will improve access to reports for Nurses and Physicians, provide an opportunity for faster discharge home rate for all patients, and improve patient safety and handling, as reports will not run the risk of being lost or misfiled in the charts.

Cerner is a step in a positive direction for OSMH to provide optimum patient care by allowing one central database for all patient information.