

Staffing Challenges in TM: Tipping the Scales

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Technologist Shortage in Ontario

- Report from the MLPAO (Medical Laboratory Professionals' Association of Ontario) July 2023
 - 42% of Ontario labs responded to the survey (91 out 217)
 - 39% of MLTs in Ontario are approaching retirement
 - Currently, there are 311 open MLT positions on Ontario
 - 74% of job openings are unfilled for longer than 3 months
 - 58% stated shortages are affecting turn-around times of lab results



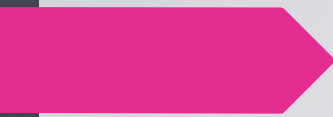
Reasons for Lack of Clinical Placement Sites

- ▶ Lack of staff to attend to the students:
 - ▶ Teaching, sample preparation and practical bench experience
- ▶ Inability to provide training in all five disciplines
 - ▶ Rural and remote areas may only operate with a core laboratory
- ▶ Lack of space to accommodate the students



Learn and Stay Grant

- ▶ Announced by the Government of Ontario in 2022 for the 2023-2024 school year
- ▶ Eligible students will receive full, upfront funding for books, tuition and other direct educational costs
- ▶ In return, graduates will commit to working in the region they studied for a term of service after they graduate to help fill critical roles in priority communities
- ▶ Hope that providing financial incentives will encourage students to address staffing shortfalls in highly impacted areas
- ▶ The Grant also includes nursing programs in northern, eastern and southwestern Ontario, and paramedic programs in northern Ontario



Transfusion Specific Technologist Shortage

- ▶ Increased responsibility/liability
 - ▶ Added responsibility of product preparation in addition to testing
 - ▶ Theory is always relevant
- ▶ Antibody investigation hesitancy
 - ▶ Challenging cases can lead to lack of confidence in the ability to investigate a sample
 - ▶ Lack of expertise
- ▶ Solitary working environment on shift
- ▶ Multitasking capability is a must
- ▶ Ability to work under pressure
- ▶ No difference in financial compensation in comparison to the other labs



MLA Transition into TM at LHSC: Topics for Discussion

- ▶ Preparation:
 - ▶ Job Description
 - ▶ Interview Process
 - ▶ Defining hazards and associated risks
- ▶ Implementation:
 - ▶ Introduction to TM
 - ▶ Training Manual
 - ▶ Responsibilities
- ▶ Challenges and Barriers
 - ▶ Updated duties lists
- ▶ Where we are now



LHSC

- ▶ Victoria Hospital (VH)
 - ▶ Trauma/Critical Care, Maternity/NICU, Children's Hospital
 - ▶ Approx. 550 beds + 140 Children's Hospital beds
 - ▶ PaLM: Core Lab, TM, Micro, Molecular, Specialty Biochem, Flow Cytometry
- ▶ University Hospital (UH)
 - ▶ Cardiac, Transplant, Orthopedics
 - ▶ Approx. 410 beds
 - ▶ PaLM: Core Lab, TM, Pathology, Transplant, Cytology
- ▶ St. Joseph's Healthcare (Core Lab only), Parkwood Hospital, and multiple satellite sites across the city



TM at LHSC

- ▶ VH: 7-8 Techs on typical day shift + Senior(s), 2 on evenings, 1 on nights
 - ▶ Blood and Marrow Transplant Program techs
 - ▶ Student/Fellow instructors (Teaching Hospital)
 - ▶ Referral center for the region
- ▶ UH: 3 Techs on typical day shift +/- Senior, 1 on evenings, 1 on nights
 - ▶ Tissue Bank
- ▶ Automation: Ortho Vision (gel testing)
- ▶ LIS: Cerner Millennium
- ▶ OMNI Assistant Software: SOPs, inventory, tasks and equipment
- ▶ Honeywell EBI for continuous monitoring
- ▶ Medical Courier services (courier between sites)



Preparation: Proposed MLA Duties

- ▶ Recording of lot numbers and critical supplies
- ▶ CBS order receipt
- ▶ Equipment maintenance
- ▶ Reagent preparation
- ▶ Clerical tasks/filing
- ▶ Inventory management
- ▶ Tissue receipt
- ▶ Intercampus transport of supplies
- ▶ Specimen login



Preparation: Job Description

- ▶ Part-time position
- ▶ 3-4 days per week, no weekends or STAT holidays, 8am-4pm
- ▶ Victoria Hospital only
- ▶ Internally posted, unionized position



Risk Assessment

- ▶ Identification and quantification of the risk associated with having an MLA performing the duties routinely performed by an MLT
- ▶ Probability/likelihood that an undesirable consequence will occur
- ▶ Severity of that consequence and the effects that it would have
- ▶ Implementing preventative actions that will decrease the probability of the hazard occurring

Risk Assessment

Severity Likelihood	1 Insignificant	2 Minor	3 Moderate	4 Critical	5 Catastrophic
1 Unlikely	Low 1	Low 2	Low 3	Medium 4	Medium 5
2 Seldom	Low 2	Medium 4	Medium 6	High 8	High 10
3 Occasional	Low 3	Medium 6	High 9	High 12	High 15
4 Likely	Medium 4	High 8	High 12	High 16	Extreme 20
5 Definite	Medium 5	High 10	Extreme 15	Extreme 20	Extreme 25

Risk Assessment

Task Description	Possible Hazard(s)	Probability/Likelihood	Severity	Risk Level	Mitigation	Follow-up Required
Canadian Blood Services order receipt: visual inspection of blood products, entering products into Cerner, taking off segments, squeezing segments into tubes, reconciling inventory against packing slips, ensuring that units get put away correctly in their appropriate storage temperatures in a timely fashion, using the cards to state that the units are not yet confirmed	Incorrectly performing visual inspection, which could lead to the transfusion of blood products which are unacceptable (example: flocculant material, excessive bubbles, units dark in color, units leaking)	Unlikely	Moderate	Low	Blood products are visually inspected by CBS as they are being packed in distribution center Sign-off of SOPs stating that they employee understands what they are to be looking for Training in this area and showing examples of what is explained in the SOP	None at this time
	Inventory reconciliation not performed, could lead to problems in the future if a recall is required	Unlikely	Moderate	Low	Sign-off of SOPs stating that they employee understands what they are to be looking for	
	Blood products remaining out of temp for too long	Unlikely	Moderate	Low	Training in the safety of blood product storage Need for multi tasking at the time the order is being brought in is minimal, so the blood is entered in, and then put away immediately	



Risk Assessment




- ▶ Majority of the duties undertaken by the MLA will be checked by an MLT
 - ▶ Mitigates the severity of the risk
 - ▶ Example: Reagent preparation by the MLA will be QC'd by an MLT
- ▶ Limited patient sample handling
- ▶ Adequate training in the assigned duties
 - ▶ Completion of tasks that have been signed off in training manual prior to performing
- ▶ Outcome: Minimal and acceptable risk associated with the hand-off of the duties



Getting Started: The Interview Process

- ▶ Difficult to gauge preparedness of the candidates
 - ▶ Lack of formal education in transfusion science
- ▶ No standardized process in place for MLAs in the transfusion space
- ▶ Questions based on hypothetical situations
 - ▶ Quality control, specimen handling
 - ▶ Examples of interview questions:
 - ▶ You witness a coworker performing a procedure in SRA that is not following the standard policy and procedure. How do you handle this situation?
 - ▶ You are accessioning a sample and notice that the first name is obscured on the label. What do you do?
 - ▶ You are preparing reagents for use by the MLTs the following week. You have only performed the procedure a couple of times. In general, what steps do you perform to ensure the quality of the reagent?
- ▶ The successful candidate was the person who was best able answer the questions, as well as who we thought would be a good fit for the department



Implementation: Training Manual

- ▶ Based upon the duties lists created, a training manual was developed that would encompass the procedures they would be performing
- ▶ Modified from the current MLT training manual
- ▶ Focus on equipment, reagent preparation and product handling
- ▶ Theory based questions were developed to test acquired knowledge
- ▶ MLT sign-off for the important tasks
- ▶ Evaluation of the training



Implementation: Introduction to the Lab

- ▶ Senior technologist led
- ▶ Tour around the lab
 - ▶ Brief and succinct explanation of blood bank
 - ▶ Location of equipment, supplies and safety materials
- ▶ Explanation of the training manual
- ▶ Explanation of lab protocols
 - ▶ As a current employee, she was familiar with the OMNI system
- ▶ Schedule planning
- ▶ Reading introductory SOPs




Implementation: Training

- ▶ Training period of 4-6 weeks
 - ▶ Dependent on shifts worked, and task availability
- ▶ MLTs and senior technologist led
 - ▶ MLTs were delegated to explain and demonstrate the tasks she would be responsible for
- ▶ Completed tasks and SOPs were tracked in the manual
 - ▶ Senior technologist to sign off on completed sections of the manual
- ▶ Manager sign-off required prior to independent completion of duties



Implementation: Barriers

- ▶ During the ACD assessment, it was determined that MLA Cerner access did not prevent them from performing tasks which are prohibited
 - ▶ Example: Even though it is not within the scope of an MLA to be able to verify patient results, the access that they have did not prevent them from performing this task
- ▶ Staffing models and union regulations create challenges to workflow
 - ▶ Example: Shifts must consist of a 8 hour work day




Updated List of Responsibilities

- ▶ Recording of lots numbers and critical supplies
 - ▶ Initial morning duties (E.g checking LN2 levels, downtime files etc)
- ▶ CBS Order Receipt
 - ▶ Receives the products
 - ▶ Reconciles packing slips
 - ▶ Removes segments
 - ▶ Prepares the unit groups to be run on the Vision
- ▶ Equipment Maintenance
 - ▶ Daily, weekly, monthly and annual maintenance tasks
 - ▶ Signs off in OMNI when complete



Updated List of Responsibilities

- ▶ Reagent Preparation
 - ▶ Prepares 0.8% panels from 2-5% commercial panels
 - ▶ Prepares DTT treated screening cells, 6% albumin, cord cells etc
 - ▶ Prepares reagents to be used in antibody investigation
 - ▶ Creates an OMNI task for MLT QC to be performed
- ▶ Clerical Tasks
 - ▶ Filing antibody investigations at months end
 - ▶ Checks over antibody cards to be sent to patients
 - ▶ Data entry
- ▶ Tissue Receipt
 - ▶ Receives commercial tissue and places in temperature appropriate storage
 - ▶ Leaves paperwork for MLT second check

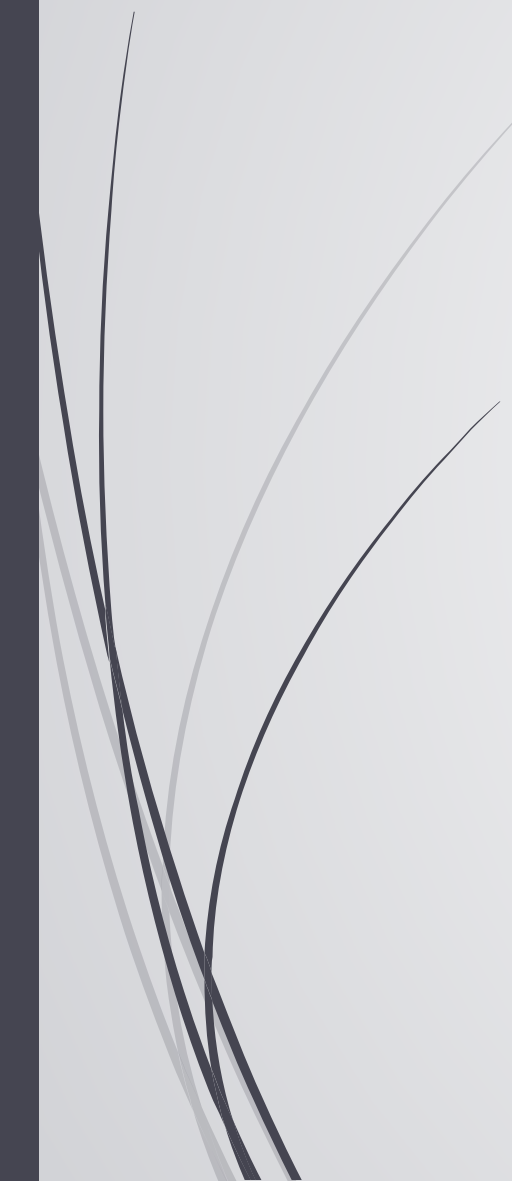


Updated List of Responsibilities

- ▶ Inventory management
 - ▶ Senior places the order for the week on Mondays, and places the requisition in the order tray
 - ▶ MLA receives the inventory into the OMNI system for tracking purposes
 - ▶ Informs senior when items are missing
- ▶ Intercampus transport of supplies
 - ▶ University campus sends an order of required supplies on Tuesdays
 - ▶ Supplies are gathered, packed and transferred by the MLA
- ▶ Specimen login has been removed as a duty due to restrictions of the Cerner system (verification)



Challenges

- ▶ Teachable moments
 - ▶ Encouraging the MLTs to explain new tasks, rather than just performing the tasks themselves
 - ▶ Example: Explaining the process for an equipment specific task that is performed annually, and may not have been part of the initial training
 - ▶ Creating a space where they feel comfortable enough to ask questions and try new things
 - ▶ MLTs rushing to complete duties that could be performed by the MLA when given a chance
 - ▶ Delineation of duties to ensure that the work is divided evenly
- 



Where are we now?

- ▶ Approximately 18 months into the process
- ▶ Start time amendments:
 - ▶ Initially an 8-4 role, shifted to a 7-3
- ▶ Duties amendments:
 - ▶ As the MLA became more comfortable in her role, we were able to add on additional duties that were not part of the initial plan
 - ▶ E.g Quality related tasks, referred out samples to Bristol for fetal genotyping
 - ▶ Duties which were initially part of the plan had to be reconsidered due to scope of practice
 - ▶ E.g Patient sample log-in procedure, updating of Bleeding Disorders protocols



Plans for the Future

- ▶ Changing the current part-time role to full-time
- ▶ Tissue Banking assistance
- ▶ Blood and Marrow Transplant Program assistance
 - ▶ Possibly hiring a second MLA if these roles would be included
- ▶ Possibility of 10 or 12 hour shifts for MLTs
 - ▶ Mix of 8 and 12 or 10 and 12
 - ▶ Will allow for extra coverage during the hours it is required



Conclusions



- ▶ MLAs can play an integral role in the function of a transfusion service
- ▶ Ensure you have a strong understanding of the limitations of your LIS when considering this role
- ▶ Encourage your staff to think outside the box when determining if this is the right path for your lab
 - ▶ Collaboration and open-mindedness
- ▶ Ensure your workload is sufficient to be able to create an intriguing working environment



Thank you for your time!

➤ Any questions?

