

Increasing Intake: One Hospital's Perspective on MLT Clinical Training

Clinical education is a vital element in a medical laboratory science program. It's the place where reality of practice is revealed – the first opportunity to practice in an authentic environment, where the integration of theory and practical skills collide in a context-rich atmosphere that the classroom and simulation lab can not duplicate completely. It is in this essence that the Hospital for Sick Children's Department of Paediatric Laboratory Medicine (DPLM) in Toronto committed to developing the next generation of laboratory practitioners through quality clinical education. It has taken steps forward for the future of laboratory science to increase Medical Laboratory Technology (MLT) student intake. This article highlights strategies employed to maintain an effective program while increasing student intake.

Background

The clinical environment requires opportunities for students to develop, integrate, and hone the knowledge, clinical judgment, attitudes, and skills they require for professional practice, all within a climate of safety, where mistakes are new opportunities to learn and grow. This environment also needs dedicated, knowledgeable, enthusiastic teachers who serve to guide, support, stimulate, and facilitate learning opportunities for students. These teachers are role models – a key for professional socialization – the process through which students develop a sense of self as members of the profession, internalizing the norms and values of medical laboratory science in their own behavior.^{1,2} Coordination is also required to ensure that students complete required competencies and receive the instruction, supervision, and guidance required for success. Putting all these crucial elements in place can be challenging in a healthcare system currently marred by human resource shortages, complex workloads, and rapid technological changes.

The future of medical laboratory science, however, demands a proactive approach to sustain its permanence in the healthcare arena. With the CSMLS' 2002 report estimating

up to 50% of the workforce could retire by 2016, ongoing recruitment strategies are needed.³ Student recruitment opportunities, student contributions to workload, and decreased time for training are tangible benefits of participating in clinical education.² It was with this intent that the DPLM chose to increase student intake.

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The DPLM is a single-site laboratory within a specialized, tertiary level care institution, performing approximately 2 million tests per year. Historically, up to three MLT students trained annually. In the 2007/2008 academic year, intake was expanded to 10 students; five each from 2 different schools (one college-based, one university-based). Differences in program requirements and a larger number of students to rotate created a challenge. To overcome this, an Educator position was created that, in part, was responsible for the administration and coordination of student rotations, monitoring and assessment of student performance, liaising with educational institutions, and providing guidance to teaching technologists and students. The following is a synopsis of DPLM's clinical education program.

Clinical Education Program

Clinical Rotations

MLT students rotated through five disciplines within the department – hematology, chemistry, histology, microbiology, and transfusion medicine. The length of each rotation varied, but was based on each school's requirements (typically 6 to 8 weeks per discipline). Discretionary time for additional practice or supplementary/enrichment activities was also available.

To facilitate the rotation of 10 students through five disciplines, the group was split into pairs which rotated together through the department. Within each laboratory, students were either taught together on benches

or split onto different benches dependant on which approach facilitated the best learning outcomes. For example, the microbiology laboratory preferred to teach students in pairs and rotated them through workbenches in a specific order – moving from least to greatest complexity of work. Conversely, in chemistry, students were separated onto dif-

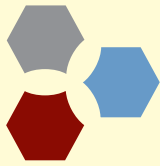
ferent benches to maximize hands-on practice with each instrument. Student pairings were generally comprised of 2 classmates; one pairing consisted of a student from each school. Based on feedback, students enjoyed being paired – it helped relieve anxiety and allowed for peer-to-peer teaching/learning.

Teaching Model

Each laboratory has one or two designated teaching technologists that schedule bench rotations, design learning activities, evaluate performance, and provide formative and summative feedback. Teaching on the bench was not done exclusively by the teaching technologists (due to lab scheduling), but was a function of all staff. Having this variety encouraged professional socialization, teamwork, and staff development.

A one-to-one (or two-to-one) student-teacher teaching model was utilized. The benefits of this type of teaching model allows for active transfer of knowledge, the ability to customize activities to meet student needs, and the development of professional relationships between staff and students.¹ A disadvantage is the time commitment for technologists required to work a full bench workload concurrent with teaching responsibilities. Involving students as much as possible (a great way to illustrate the realities of practice) and the use of self-directed learning activities were ways to minimize this issue.

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CSMLS Congress 2008

The annual CSMLS Congress was held at The Grand Okanagan Resort and Conference Centre in Kelowna, BC from June 1-4, 2008. This was a beautiful setting right on the lakefront.

A series of 10 different workshops were offered on the Saturday and Sunday morning before the Congress officially started. These were well-attended and very informative. The business of the society was conducted at the AGM held on Sunday at noon. It was then a walk across the street for the Opening Ceremonies. There was not enough room for all those wishing to attend to get in. The attendance for the congress was exceptional. The keynote speaker, Linda Edgecombe, did an excellent job of getting us to laugh and to examine ourselves. At the President's Reception that evening was a chance to network and catch up with old friends,

to make new ones, and enjoy the night.

Over the next three days 52 different educational sessions were offered. These covered a vast



Left to right: Bernard Hartung, OSMT President, Blanca McArthur, OSMT Executive Director, Conrad Bégin Jr., OSMT Vice-President.

variety of topics; something for everyone. The speaker notes from some of these sessions are available for download from the CSMLS website (www.csmls.org). These were well attended and some had people lining up hoping to get in as capacity for the room had been reached.

The exhibit hall opened on Monday night with the Exhibitors' Reception. This was another opportunity to network and see the latest from the vendors. Delegates had lots of opportunities over the next two days to view the exhibits. The exhibit hall was sold out, all available spaces being used with additional space set up in the hall.

The organizing committee needs to be commended for an excellent Congress. It was very informative, interesting, and enjoyable – well done! I am looking forward to next year's Congress in St. John's, Newfoundland. ♦

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Learning Activities

Although much of the teaching occurred on the bench working alongside an experienced technologist, incorporating some self-directed, simulation-type, learning activities further facilitated the application of knowledge to practice, freed up time for technologists to complete work, and allowed students to assume responsibility for their own learning and results.⁴ To ensure success, a teaching technologist monitored student performance, reviewed their results (interim and final) and provided constructive feedback. The following were some activities. Histology: students were given several practice tissues that they were required to embed, cut, stain (H&E and specials), coverslip, and critique. In addition to using technical skills and knowledge, students had to utilize time management and organizational skills to complete this exercise in the specified timeframe and with results of comparable quality to entry-level technologists. Microbiology: after spending the morning helping with bench work alongside a technologist, students were given known and

unknown organisms to culture and identify as further practice. Hematology: case studies were given to students to work through independently. Each case had instrument printouts and corresponding peripheral blood and bone marrow slides to assist students in making correlations between different analyses. Students indicated that these activities were beneficial to their skill development and the variety of activity added to the clinical experience.

Reflection and the Future

Although challenges arose, critical success factors were achieved and included enhanced coordination of rotations and positive student performance and feedback. DPLM was also pleased to recruit many of the students – evidence that the clinical education program did bear fruit! Ongoing efforts are in place to continue to build and improve the clinical education program.

DPLM is wholeheartedly committed to educating the next generation of medical laboratory technologists and to share the experience with the hope that other institutions will take steps to acquire MLT students (or increase intake) with a view to aid the profession with its

encumbering human resource shortage. These students are the next generation of laboratory professionals and within them comes the potential for significant impacts on the field of medical laboratory science. ♦

References

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