FINAL PROJECT REPORT, OUTCOMES INDICATORS AND TRACKING MECHANISMS

Addressing the Competency Gaps of Internationally Educated Medical Laboratory Technologists:
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Canadian Society for Medical Laboratory Science

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Corresponding author:
Moira Grant
CSMLS Director of Research
MoiraG@csmls.org

Canadian Society for Medical Laboratory Science
Hamilton ON
www.csmls.org

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Introduction

Anecdotal and published information indicates that internationally educated medical laboratory technologists (IEMLTs) are experiencing difficulties gaining success and acceptance in the workplace.[1,2,3] Previous research suggests that IEMLTs have certain educational gaps when they apply for certification in the Canadian medical laboratory science profession.[4,5] These gaps reflect the widely varying professional education curricula and credentialing practices around the world. Furthermore, the national certifying body, the Canadian Society for Medical Laboratory Science (CSMLS) is introducing a new competency profile, effective with its 2010 certification examinations, that makes explicit professional expectations for competencies related to patient safety, interprofessional communication and teamwork, professionalism, and emerging demands of the laboratory workplace.[6] Do IEMLTs possess these competencies, and if not, how will they acquire them in preparation for the professional certification process and for the Canadian healthcare workplace?

In order to provide the most effective guidance to applicants for prior learning assessment (PLA), the CSMLS would benefit from an appreciation of the competency gaps typically encountered among IEMLTs as well as from a resource collection of effective strategies for addressing these gaps. This report describes a project whose main goals were a competency gap analysis and the development of resources to address these gaps.

To achieve these, the CSMLS carried out the following activities:

1. Focus groups with IEMLTs: the IEMLT focus groups were carried out in two stages: four groups in July 2009 and one in December 2009 to gather information; and two validation groups in March 2010 to gather feedback on the draft resources document

[1] Grant, M. M. & Davis, K. H. (2008). *Simulation-based learning in medical laboratory education: Current practices and perspectives*. Hamilton: Canadian Society for Medical Laboratory Science.
[2] Grant, M. M. (2008). Internationally educated medical laboratory technologist: The story of one … or many? *Canadian Journal of Medical Laboratory Science, 70*(4), 133-135.
[3] Haley, B., & Simosko, S. (2006). *Prior learning assessment and internationally trained medical laboratory technologists.* Ottawa: Canadian Association for Prior Learning Assessment
[4] Grant, M. M., Strachan, A., Nielsen, C., & Verburg, M. (2008*). Investigation of language assessment tools and benchmarks necessary for success for internationally educated medical laboratory technologists*. Hamilton: CSMLS.
[5] Grant, M. M. (2009). CSMLS prior learning assessment clients – A snapshot. *Canadian Journal of Medical Laboratory Science 71*(5), 194-203.
[6] Canadian Society for Medical Laboratory Science. (2005) *Competency profile: General medical laboratory technologist. Competencies expected of an entry level general medical laboratory technologist*. Hamilton: CSMLS.

2. Interviews with medical laboratory employers, educators, and CSMLS staff: these took place in person or by telephone, with follow-up email correspondence for distributing the draft resources document and gathering feedback
3. Research on existing literature, information and resources for IEMLTs
4. Integration of data/findings from previous CSMLS projects on IEMLTs
5. Consultation with educators/regulators/practitioners to develop model curriculum outlines on targeted subject areas that will best meet the competency gaps identified in earlier stages of the study.

The information from this project can be used to advise CSMLS clients on the resources available to suit their upgrading needs and to expedite their completion of PLA so that they can advance to the certification examination. The curriculum outlines and resources document may also be useful to educational institutions to guide their development of further educational resources.

This report addresses the reporting requirements outlined by the project funder, the Government of Ontario, in its project agreement with CSMLS.

Effectiveness of the recruitment and marketing strategy

For this project, 'recruitment strategy' refers to strategies used to identify and invite focus group and interview participants. To recruit IEMLT participants, we used the CSMLS database of current and past PLA clients. We sent emailed invitations explaining the purpose of the project and asked recipients to contact us if they were interested in participating. Since the largest numbers of Ontario IEMLTs have settled in the Toronto-Hamilton area, we focussed our invitations on clients in those geographic areas. All IEMLTs who wish to practice in Canada (unless they choose to practice in Québec) *must* come to CSMLS, so the CSMLS database is an effective and comprehensive strategy for recruiting IEMLTs.

Our original plan had been to carry out all our stakeholder consultation at the start of the project (Summer/Fall 2009). We were initially disappointed with the participation levels in the July 2009 IEMLT focus groups (12 individuals in four groups). We felt that this might be due to the time of year and scheduling conflicts during summer vacations. However, we noted some distinct patterns and recurring themes as a result of our meetings with these individuals, and benefited from the in-depth discussions that the small group interactions enabled. The December 2009 group of twelve individuals consisted of the entire class in the Mohawk-McMaster bridging program so, in effect, they were a ready-made discussion group. Their input confirmed what we had learned in speaking with the groups in July.

Nonetheless, we recognized that we had not managed to meet our goals for participant numbers. We decided that we would hold validation focus groups and interviews in March 2009 in order to get feedback on the draft resources document. There was a far greater response to the invitations for the two March 2010 IEMLT groups (8 and 14 people each). Our focus group processes and consent form were approved in advance by the CSMLS Research Ethics Board.

We issued direct email invitations to bridging program educators already known to the CSMLS. We used a 'snowball' recruitment strategy to identify employer participants: we contacted employers known to us who then recommended others. We interviewed these contacts in person or by telephone between September 2009 and March 2010.

In this project, 'marketing strategy' is interpreted to mean the activities used to promote the final product of this project, the resources document. This stage will be undertaken at the time of project completion. We discuss this further in the section later in this report entitled "Marketing of project outcomes …"

Data gathering and analysis

Strategies used for data gathering included focus groups, interviews, online searches, literature reviews, and searches of educational institution catalogues and websites. We gathered resources that included course outlines, program brochures, website links, community programs, and information on bridging programs and newcomer orientation courses. The literature and resources for internationally educated professionals are broad and fast-growing, but CSMLS is responsible for almost all of the literature specifically addressing IEMLTs.

Although the CSMLS has a fairly specific academically-oriented definition of 'competency', we allowed for a broader interpretation during our stakeholder consultation to ensure that we did not artificially constrain the feedback we received. In recognition of our IEMLT participants' varying levels of English language proficiency, we used terms such as "support", "needs", "resources", and "help", as well as 'competency gaps', to inquire about areas in which they felt under-resourced during their PLA, certification, and employment stages. We also asked about their professional preparation with questions such as "Is there anything you wish you'd known earlier?" and "Are there any additional skills you wish you'd had?" Within one week after the sessions, we provided each of the participants with our field notes synopsising the points they had raised, and inviting them to correct or expand on the notes to ensure that we represented their views fully. Several participants added further information.

In our discussions with employers and educators, we simply asked participants to identify the major competency gaps they had observed in their interactions with IEMLTs. We followed up on their comments with probing questions based on their observations.

Each of the stakeholder groups consulted during our initial needs assessment identified major 'competency' gaps, some of which overlapped:

- IEMLTs identified **job hunting, networking, mentoring and Canadian workplace experience** as major needs. They felt that the courses recommended by the CSMLS for upgrading (the 'learning plan') met their learning needs for technical subject matter, although they pointed to the courses' focus on theoretical materials and lack of opportunities for practical hands-on skills. Participants were confident about their profession-specific knowledge once they had passed the CSMLS examinations but felt extremely disadvantaged by their lack of workplace experience and were disillusioned that their years of experience in their countries of origin counted for nothing among Canadian employers. (Graduates of bridging programs reported fewer difficulties and delays in obtaining employment after certification when compared to IEMLTs who had not participated in a bridging program. Employers apparently regard clinical experience obtained during a bridging program as equivalent to Canadian workplace experience.) Almost all IEMLT participants were unaware of the additional competencies that are being added to CSMLS's expectations through the introduction of its new competency profile.[7]

- Employers identified **communication skills and Canadian workplace experience** as major gaps. They noted that communication goes far beyond simply being able to speak and understand conversational English as demonstrated through standard language proficiency testing. Occupation-specific language skills and a willingness to ask questions or admit to a lack of understanding are also areas where employers believe IEMLTs could benefit from greater skills. These points are consistent with much of the research in this and other health professions.[8]

- Educators acknowledged gaps in **Canadian workplace experience, critical thinking and problem solving**, as well as **specific communication skills such as reading complex materials and demonstrating understanding**. They pointed to the large amounts of complex technical materials that newcomer technologists must read as part of their upgrading courses and to some of the unspoken rules for communication and social interaction that are not part of many distance education or technical courses. Educators noted that the CSMLS's new competencies, as well as skills such as résumé writing and job hunting, are integrated into bridging program courses. As a result, participants in

[7] Since the Fall of 2009, CSMLS has informed its future examination candidates that, effective with the June 2010 certification examination, candidates can expect to be tested on the new competency profile. Individuals who have already successfully completed the examination, as in the case of this project's participants, may not be aware of this change even though CSMLS has publicized it broadly.

[8] For example, Grant, M. M. (2009). The CSMLS Task Force on Internationally Educated Medical Laboratory Technologists: An overview. *Canadian Journal of Medical Laboratory Science, 71*(3), 129-131.

bridging programs have opportunities to gain these skills, while the majority of IEMLTs do not.

- CSMLS certification staff expressed concern about how IEMLTs would acquire **non-technical competencies,** specifically the 'new' competencies (for example communication, critical thinking and professionalism) in the CSMLS 2010 competency profile. They acknowledged that many of the current technical courses, most of which are distance education courses, will not allow IEMLTs to gain these competencies and expressed concern at the disadvantage this presents for future examination candidates. The new competency profile will be tested effective with the CSMLS's June 2010 certification examination.

Stakeholders made recommendations for addressing these gaps, most of which cannot be remedied by the resources document being developed as part of this project. These include the availability of mentors and peer support networks, financial support, and bridging programs or other opportunities for Canadian experience. These recommendations, too, are consistent with our prior research with IEMLTs and with the general literature on how best to support internationally educated professionals.[9,10,11,12,13]

Development of curricula and educational resource database

While there were distinct limitations posed by the recommendations coming out of the needs analysis, described above, three major areas emerged as possible focus areas for development of the resource document:

1. Preparing to work in Canada as a medical laboratory technologist (becoming familiar with the Canadian healthcare workplace and the demands of the medical laboratory profession)

[9] Grant, M. M. (2009). Bridging programs for internationally educated medical laboratory technologists: A business case. Hamilton: Canadian Society for Medical Laboratory Science.
[10] Grant, M. M. (2009). CSMLS prior learning assessment clients – A snapshot. *Canadian Journal of Medical Laboratory Science, 71*(5), 194-203.
[11] Grant, M. M. & Davis, K. H. (2007). *Simulation-based learning in medical laboratory education: Current perspectives and practices.* Hamilton: Canadian Society for Medical Laboratory Science.
[12] Alboim, N. A. (2002). *Fulfilling the promise: Integrating immigrant skills into the Canadian economy.* Toronto: The Maytree Foundation.
[13] SP Consulting and The Whetstone Group. (2008). Financial assistance for immigrant training (FAIT). Authors: Ottawa ON.

2. Basic job-related skills (including language/communication skills, workplace readiness and job search skills)
3. Profession-specific skills (including the CSMLS's 'new' competencies)

Once we identified these focal points, we began an intensive search of print- and online-resources in order to match existing resources with the gaps. We used materials already available from the CSMLS, textbooks, and readily-accessible online tutorials and readings. We hoped that, by providing online publicly available resources, we could offer low-cost alternatives for some of the courses and textbooks.

In addition, we developed study guides that corresponded to the CSMLS's new competencies by reviewing existing curricula (where available) and constructed a common template (learning outcomes, sample learning activities and questions, recommended reading and online resources). The development followed guidelines consistent with general theories of curriculum design in adult education.[14,15] We faced a challenge in that model course outlines for these competencies are not generally available, but instead are often integrated into the curricula of existing programs. For example, critical thinking is seldom a course on its own. Much of the material we developed is new as there were few models for these topics.

Analysis of project evaluation by both internal and external stakeholders

We sought feedback from IEMLTs, employers, educators and CSMLS staff on the resources document.

We consulted IEMLTs in two focus group sessions held in March 2010. We provided copies of the document and reviewed its major sections, as well as facilitating discussions on CSMLS certification processes and how best to meet IEMLTs' needs. Conversations during the focus group sessions were animated and emotional as participants related their own experiences. When asked to provide specific feedback on the resources document, participants were very polite, diplomatic and helpful. They noted that the resources document offered more information and assistance than was available to them when they were navigating the system. They agreed that IEMLTs who have arrived more recently are 'luckier' because more information has become available and the processes have become clearer in the last four to five years. Both during the discussions, and afterward in email correspondence, several

[14] Cantor, J. A. (2008). Delivering instruction to adult learners, 3rd ed. Toronto: Wall & Emerson Inc.
[15] Walker, D. F. & Soltis, J. F. (2009). Curriculum and aims, 5th ed. New York: Teachers College Press.

individuals suggested additional resources that they had found helpful. We sent all focus group participants our field notes on the sessions within two days of the meetings so that they could confirm or add to what we had recorded.

While focus group participants seemed reluctant to criticize the resources document directly, a 'between the lines' reading of their discussions revealed a number of the document's limitations:

- IEMLTs do not welcome more reading material (either online or paper-based). Text-based materials are difficult to apply in the absence of practice. They are impersonal, abstract, and can address only generalities. They do not deal with individual challenges and situations, and they leave IEMLTs to fend for themselves. Such resources add to the piecemeal approach to professional certification when most IEMLTs would prefer an integrated program-based process. This categorization (of textual materials) applies to the resources document as a whole as well as to many of the resources it contains.
- Recommendations for costly textbooks and courses are not of value. IEMLTs feel that they are already paying enough money and experiencing financial hardships in order to become certified. Medical laboratory textbooks are extremely expensive and not generally available. One IEMLT participant said simply "It hurts" in reference to the seemingly endless list of steps to professional integration that have associated costs. And of course, textbooks suffer from the shortcomings mentioned above for written materials.
- Internet-based resources are not helpful for those accessing the sites from developing countries (due to poor connectivity – it can sometimes take hours to download a simple document). Not all IEMLTs in Canada have ready access to computers. Printing out documents is an added expense.
- A written document cannot address IEMLTs' needs for human contact, guidance, mentorship and networking. IEMLTs find the certification process extremely isolating, fragmented and depersonalized. Participants suggested that IEMLTs need guides and mentors of two types: (1) Canadian-educated individuals who have worked in Canadian laboratories and who can show IEMLTs 'how it's done' in Canada; and (2) IEMLTs who have successfully navigated the PLA, certification, and job-hunting processes and who can share their tips and experiences.
- 'Real' critical thinking skills are best acquired in a laboratory setting and not in a study guide.
- While the resources document is an improvement, it is not enough.

Educators and employers found the resources document potentially helpful but acknowledged that it cannot meet the huge (and most pressing) need for clinical experience and workplace-specific communication/social-cultural skills. Educators commented that IEMLTs do not necessarily see themselves as lacking in communication skills and may not avail themselves of

the resources in the documents relating to those skills. One employer suggested that a list of laboratory-specific acronyms could be a useful resource. To address this, we added links to sites dealing with laboratory acronyms and abbreviations to the resources document but felt that it was beyond the scope of this project for us to compile the thousands of terms and short forms ourselves. Another employer suggested that the resources document could be useful for Canadian-educated MLTs as well. Both educators and employers commented on the lack of availability of profession-specific textbooks, even despite the CSMLS's recent efforts to enhance accessibility by donating sets of texts to libraries across the country. Even with inter-library loans, IEMLTs in smaller and more remote locations may not be able to access the books conveniently. Both groups suggested that online texts would be a worthwhile project to pursue in the future. We agree that investigating the costs and licensing options for online textbooks would be a worthwhile undertaking in a future project.

CSMLS Certification staff provided suggestions for updating information and additional resources, which were added to the document. After the project end date, the resources document will receive a further review by the Council on National Certification, which sets policy for CSMLS PLA and certification.

Lessons learned and identification of best practices

The findings of this project confirmed prior research on meeting the needs of internationally educated professionals. In particular, it pointed to the value of bridging programs in assisting IEMLTs to gain the skills they need for expedient certification and workforce integration. CSMLS receives PLA applications from approximately 300 applicants per year. There are Canadian bridging program places for fewer than 20 individuals. No matter how comprehensive this document, it cannot meet the needs identified in this study for Canadian workplace experience, social interaction skills, interpersonal communication, networking, or mentoring. In terms of best practices, while the resources document produced through this project may be informative for some IEMLTs, we have come to appreciate the inherent limitations of a text-based resource in the face of the gaps identified in this inquiry.

The IEMLT focus groups affirmed our prior experiences with IEMLTs by revealing the frustrations and hardships that IEMLTs have endured. Many continue to feel that they were treated unfairly at some stage in the process, whether through misinformation by 'first contacts' (consulates and immigration officials), difficulties navigating the professional credentialing processes, or barriers to obtaining employment. Their stories also point to a great deal of dedication and persistence on the parts of IEMLTs as they continued to pursue professional certification.

We recommend that researchers seeking to work with focus groups of internationally educated professionals allow plenty of time for participants to tell their stories. The one group of 13 individuals we hosted presented facilitation problems when the conversation became heated and not all participants had an opportunity to speak freely. Groups of 5 to 7 would be optimal, with 90 to 120 minutes allowed for interaction. Most participants appreciated our hosting a buffet meal as part of the meeting, particularly since most of the meetings took place at the end of the work day. We ensured that we offered vegetarian choices but our site was unable to provide the halal foods that some of the participants required.

We also recommend that professions with specialized subject matter areas investigate the possibility of online textbook resources. In our prior research, IEMLTs have noted the barriers they face in participating in courses or preparing for examination when the textbooks they need are expensive (some $200 to $300 each) and unavailable in public or educational libraries. It would be worthwhile investigating the feasibility of purchasing licenses for online textbook access.

While we made an effort to provide plentiful online learning resources, particularly as options to costly textbooks, we recognize that there are inherent limitations in online sources: it is a challenge to find authoritative educational resources, links become obsolete, and new sites are springing up rapidly. It is therefore impossible to provide an exhaustive list and any resource list must be regarded as a work-in-progress.

Marketing of project outcomes to IEMLTs, educational institutions, employers, etc.

CSMLS will post the resources document on the CSMLS website page for International technologists and we will alert our PLA clients, specifically those who are receiving their PLA report, and bridging program educators about its availability. Further dissemination will follow the same process as described for the dissemination of the final project report, below.

Dissemination of the final project report to stakeholders and next steps

CSMLS will post the final project report on the CSMLS website page for Research reports. We will place an announcement about the document's availability on our home page which will be 'pushed' to site subscribers and will create a press release announcing the project findings. The release will be distributed to our network of stakeholders in health professional education,

government contacts, and immigrant communities and settlement agencies. We will include the project findings in future conferences and publications discussing the work of the CSMLS on PLA and certification issues. One such conference presentation took place in March 2010 (12th Annual Metropolis Conference, Montreal, March 18-21 2010.)

Final plan for outcomes indicators

Once Ministry funding has ended, we feel that the most informative outcomes indicators for this project will address the numbers of individuals who have access to the document and the extent to which IEMLTs and educational programs find the resources document helpful.

We plan to track project outcomes in four ways:

1. by surveying CSMLS prior learning assessment clients on their use of the resource document; this can be accomplished with a brief (4 question) online survey asking if clients have seen/read the document and found any of the resources helpful; we recommend that this take place at 6- and 12- months after project completion; this feedback will be useful for future revisions/updates to the document;
2. by inquiring with educational programs about their use of the curriculum resources in the document: this can be accomplished with a telephone call to directors of bridging programs 12 months after project completion;
3. by monitoring the nature and frequency of inquiries that CSMLS staff receive on the document and related subject matter; this data will inform future revisions/updates to the document;
4. by tracking the frequency with which the document is accessed and downloaded from the CSMLS website; these data are collected by the CSMLS website specialists.

Tracking mechanism

As mentioned in the previous section, there are specific numeric indicators and survey outcomes that will allow tracking of the project outcomes. We recommend collecting data as outlined in the table on the next page.

Table 1
ADDRESSING THE COMPETENCY GAPS
OF INTERNATIONALLY EDUCATED MEDICAL LABORATORY TECHNOLOGISTS
TRACKING PROJECT OUTCOMES

1. PLA CLIENT SURVEY RESPONSES

Sample questions	October 2010	March 2011
Are you aware of the resources document?		
Have you read the resources document?		
Have you used any of the resources in the document? Please tell us more.		
Is there anything you would like to see added? Please tell us more.		

2. EDUCATORS' USE OF RESOURCES DOCUMENT

Question: Have any instructors in your program made use of the resources in the CSMLS document "Resources for Internationally Educated Medical Laboratory Technologists"? If so, how have they used it?"

Educational Institution/Individual	March 2011

3. INQUIRIES TO CSMLS RELATED TO RESOURCES DOCUMENT

Month	Estimate: Number/nature of queries about document or document-related topics
April 2010	
May 2010	
June 2010	
July 2010	
August 2010	
September 2010	
October 2010	
November 2010	
December 2010	
January 2010	
February 2010	
March 2010	

4. CSMLS WEBSITE TRACKING DATA

	April-October 2010	November 2010 -March 2011
Number of times the document page is accessed		
Number of downloads of document		

Appendix

Resources for Internationally Educated Medical Laboratory Technologists