Simulation and Clinical Placement National Forum

Background

The national Forum context and content was framed through information gathered from an environmental scan of medical laboratory science program's (MLSP; representing Medical Laboratory Technologists and Medical Laboratory Assistants/Technicians programs) simulation and clinical placement models, as well as a survey conducted to identify the experience of recent graduates during clinical placement. The intent of this large scale stakeholder discussion was to verify and validate the results, contemplate program enhancement potential, and to create an opportunity for networking and idea exchange. This data prompted a precedent setting discussion. The description of the event, which follows, is intended to provide clear and specific information for the participants at the Forum as well as those who were unable to attend.

Purpose

The purpose of the National Forum was to understand current simulation and clinical placement models within MLSPs. In addition, the Forum objectives included determining how new or modified models that include simulation could be used to enhance programs, reduce clinical placement hours to increase student seats, and support clinical placement quality. All discussions and information were clearly focused on ways to improve students' experience within clinical placements and support change to increase student seats in programs.

Participants

Over eighty stakeholders participated in the Forum, representing the key voices in a discussion targeted to address the future of simulation in MLSP clinical placement models. Representatives from the majority of MLSPs across Canada were in attendance and all provinces/territories were represented. Specifically the participants included program coordinators, program instructors, deans, regulators, government, medical laboratory professionals (MLPs), simulation and curricula experts, CSMLS representatives and recent MLSP graduates.

Forum Structure and Discussion

The forum was designed to provide information sharing and interactive sessions highlighting the MLSP environmental scan, recent graduates' clinical placement perspective, relevant research, and simulation activities conducted by MLSPs. The day's agenda was organized to prompt innovative ways of thinking and to provide an opportunity for discussing the current and future states of MLSPs clinical placement and simulation usage within Canada (see Agenda).

Simulation and
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Three note takers (arms-length CSMLS staff and volunteers) were asked to circulate and capture discussion themes, comments and the perspective of audience members during each of the key discussion periods. This methodology provided an opportunity for objective interpretation and allowed for the capture of detailed information within discussions. During the small group discussion session in the afternoon (reviewed later in this report), participants were randomly divided and assigned a lead facilitator. The recorded participants' responses would underpin the summary and analysis of the day.

Forum Summary

Simulation and Clinical Placement: Analysis Survey Results

The Forum co-chair (Laura Zychla, CSMLS Researcher) provided an overview of the environmental scan and recent graduate data for the audience. The presentation was used as a mechanism to verify whether the data collected reflected the perspective of the stakeholders in attendance. The reports associated with these datasets were emailed to all participants for review prior to the meeting. After the presentation, Christine Nielsen, CSMLS CEO, provided a practical understanding of these results in relation to MLSPs. As she noted, the Survey results indicated a need for new and/or innovative education models in a time when clinical placements are hard to find/maintain and there is increased demand for the number of graduates in order to fulfill market demand. The catch-22 in the system, however, is that in order to increase student seats, each program is required to provide evidence that a suitable clinical placement is available for each student prior to enrolment. The issue of a bottleneck in the clinical settings to take on more students and the need to provide very specific competencies for students was addressed. The pivotal question being of how to handle this issue emerged as a priority for the presentations and discussions.

Initial comments by audience members indicated that the survey results were not 'surprising' and spoke to the real life scenarios of many MLSPs in regards to clinical placement difficulties as well concerns in obtaining and contracting quality placements. Regional differences were noted, as some programs can meet needs while others have a limited number of clinical placements available. Nonetheless, the preliminary conversation indicated a need for change in many programs with considerable interest in hearing how change could be initiated. These concepts were further validated throughout the day and speak highly to the data analysis integrity and interpretation in the reports tabled for the day's discussions.

Recent Graduate Panel Discussion – The MLT and MLA Student Experience

Recent MLSP graduates from different programs and disciplines (within 5 years of clinical placement experience) were convened for a panel discussion regarding their clinical placement experience and provided personal insight into the associated survey results. This student-centric approach focused the Forum's and project's philosophy of seeking and understanding all perspectives within the clinical placement experience. The student panel represented a strong and dramatic illustration of the clinical program features; its quality, standards and organization.

Four highly motivated recent graduates volunteered to speak and were provided with the panel questions prior to the event in preparation for the plenary discussion. An understanding was established with the panellists that they could provide as much or as little information they felt comfortable citing in regards to their clinical experience. Personal or program specific information was not required for this discussion. The following describes the graduates' responses to the previously prepared questions:

1. In one sentence, how would you describe your clinical placement experience?

Note Takers Perspective: As an icebreaker question, the graduates spoke to the overall experience within their clinical placements, highlighting the positive impact it had on each of them. Words such as 'essential', 'unique' and 'key' were used to describe this critical and essential component within their program. The students provided excellent feedback regarding their clinical experience, however some of the graduates indicated that they were aware of students who had challenges during clinical placement. This did not overshadow (as will be described later in their presentation), their overall pride in their program.

Facilitator Observation: The graduates provided a balanced understanding that programs and clinical placements had the ability to support students well though there were gaps in the system that could be improved.

2. Did you feel ready for your clinical placement? Did your expectations match your experience in regards to the training? What was missing and what was a comfortable fit?

Note Takers Perspective: There was a range of responses in this section as the graduates felt prepared for their clinical placements, nevertheless, the details of this readiness varied. One speaker positively described his/her relationship with the clinical placement lab, highlighting the importance of exposure to soft skills in addition to technical skills. For example, this graduate had been exposed to new technologies in the clinical setting that were not present in his/her program but felt comfortable using them given the established clinical flexible teaching structure between the program and clinical setting. Opposing experiences were described by two other speakers. In regards to hard skills, one speaker remarked on the need for greater technical preparation prior to clinical. For soft skills training, two speakers provided additional insight. One praised his/her academic/ didactic curriculum but perceived that the associated training in the clinical setting was limited. Another speaker expressed a lack of soft skill training within the content of the program on campus as well as an accompanying lack of soft skill training related to his/her clinical placement. Keeping in line with the discussion of soft skills, the fourth speaker praised his/her clinical placement as going 'above and beyond', depicting the simulation experience prior to clinical as exemplary through its allowance of a 'place to make mistakes without impact'. This speaker also noted that there was a lack of clinical placement staff with students being left unsupervised and 'fending for themselves to make sure competencies were met'. The same speaker reiterated that the educational program did prepare students for the clinical placement; however, vulnerable students undergoing the same situation were at risk of not meeting competencies.

Facilitator Observation: The graduates highlighted the variability between programs to achieve soft and technical skills prior to and within the clinical placement setting. This discussion spoke to an area where standardized, but flexible, simulation curricula may be important.

The graduates were able to recognize that vulnerable students, who are not able or are unaware of how to facilitate change in the learning environment, may be at risk. It should also be noted that the graduates who presented on this panel comprise individuals that were motivated and able to focus their learning experience and could be considered above average in this respect. The emphasis for change to the curriculum both didactic and clinical must then be for the majority of students who are not necessarily in this category.

3. From the Graduate Survey results, many of the recent graduates stated that they had safety concerns. Do you feel that these were valid concerns? Did you have similar concerns and if so, what were these?

The concept of safety within the clinical placement setting was a large theme throughout the day and was emphasized in the graduates' responses to the question. All graduates confirmed that the survey results reflected their experience or that of their classmates in regards to safety concerns within the clinical placement setting. The group qualified this response by stressing that there was a range of how often this occurred and it was likely based on each individual's experience within the clinical setting. Generally, it can be said that the laboratory safety measures were observed as would be required by laboratory accreditation. The concerns focused on 'cutting corners' and a philosophy of 'Do what I say, not what I do,'' rather than large scale infractions.

Note Takers Perspective: The graduates provided examples of MLTs without gowns and gloves when handling infectious specimens, pouring chemicals down the sink, not wearing face shields and smelling micro plates. The notion that students are to uphold the 'gold standard' of safety, while staff did not need to abide by this was generally accepted as the 'norm'. One graduate noted that this relaxed environment can subtly affect a student's mindset to make less than optimal choices in their own safety behaviour. Discussion around the cause of this double standard focused on clinical staff being overworked and the negative impact staffing shortages on workload has caused. One graduate indicated that students should not be afraid to speak up but need to learn how to address these issues effectively in settings where they are being evaluated. This example illustrated the need for more (effective) communication content in the didactic curriculum.

Facilitator Observation: It is important to underline that the discussion was not blaming the clinical staff; instead, the graduates appeared to recognize that both parties involved, had a responsibility to identify and enact change when safety concerns arose. The discussion did underscore the importance of reviewing current monitoring systems for safety and identifying communication gaps in relaying concerns. Although not specifically discussed within this question, the ability to speak up in a difficult situation (a soft skill) could be an area where using a simulation technique with students could be useful.

4. We also heard from the survey results that some graduates had an unexpected experience during their clinical placement such as negative staff culture in the lab, lack of direction or support by clinical staff, and inadequate or inappropriate workload assignment. What is your perspective on these types of occurrences?

Note Takers Perspective: There was a strong desire expressed by the speakers to ensure that clinical placements become 'student focused'. A suggestion to achieve this was to provide greater opportunity for students to voice their opinions, experiences and suggestions in an environment that is supportive, responsive and incorporates a feedback model to all parties involved. For example, a speaker described a negative experience associated with hearing an MLT tell students that they 'did not want a student with them but that there was no one else to train them in that clinical setting.' case. In such a situation, students can feel they need to 'suck it up and deal with it' and that this emphasized a critical need to provide students with options as to how to address such circumstances. It was noted that some students felt they were treated as 'manual labour and left unsupervised'. Staff and student burnout due to over working on shift was noted.

The students arrived at their own solutions and two of the speakers stated that they actively requested clinical placement changes which resulted in more positive and worthwhile experiences at another location. One speaker noted feeling 'selfish' for asking for this change and noted that this was an uncomfortable feeling that students shouldn't need to feel. Other personal strategies to cope with negative environments were discussed including actively 'attaching' oneself to the best instructor within the clinical placement to get the most out of their experience, altering his/her personal work schedule to work with a specific clinical supervisors, and ensuring setting personal learning goals within the clinical placement through self-training when other specific opportunities were not available.

Positive experiences were also portrayed. For example, a speaker depicted an occurrence when a competency was not signed off, as training was not available. The clinical staff and program created a simulation for this person to accommodate the requirement. An important note in the discussion was that the graduates recognized that students should not be afraid to speak up as change would not occur otherwise. They advocated for others and suggested that voicing their experiences openly (using the appropriate channels) was an effective strategy to follow and encouraged other students to do so as well.

Facilitator Observation: The graduates were able to verify student clinical placement experiences associated with negative culture within some laboratories and the impact this can have on a student's mental health as well as personal and profession views. Although it was understood that this was not prevalent, it can be extrapolated that as workforce shortages increase and fiscal constraints continue to impact laboratories, the negative culture experience by students is likely to increase as burnout and pressure is exerted on clinical staff. It highlights an area for consistent monitoring and provides an opportunity to develop simulation cases that would assist students in facing these situations.

5.   What can programs do more effectively to support students in their clinical placements?

Note Takers Perspective: The graduates spoke of positive change which could support students within the laboratory environment when a situation was less than ideal. One graduate expressed the importance of the preceptor evaluation process by students and employers, and increasing communication among all parties. It was highlighted that this should be made a priority as the individual did not sense policy consistency between programs or on occasion even within his/her own program. Another graduate spoke to the need for increased accountability of the clinical placement site. An example was provided where a complaint was made but the student was not provided with feedback to help rectify the situation or understand whether the program/employer was addressing it on the students behalf. Voicing a concern was noted as being 'brave'. Many students may not want to communicate with clinical coordinators about negative experiences given the sensitivity of wanting to 'pass', coupled with the inexperience of students within the workplace setting.

The discussion continued to highlight the need for increased communication strategies that support students while minimizing potential negative effects associated with voicing concerns. It was suggested and supported that a dedicated student liaison be provided for each class and that this 'safe person' could advocate on their behalf. Other strategies included ensuring preceptors were invested in their teaching roles and 'wanted to be there'. Communication strategies included compliance with regular and frequent meetings between all parties, increasing soft skill training prior to clinical, and initial and ongoing preceptor training. Recognition for staffing shortages and its impact on clinical placement sites was depicted but it was felt that it did not outweigh the importance of ensuring that student supervisors were 'up to the task'.

Facilitator Observation: The emphasis for support centered on increasing communication and feedback, and increasing the students' soft skills to support them during difficult conversations/situations. This discussion again suggested the useful role for simulated cases to provide practice for students in varied clinical situations.

6. Do you think simulation can support students in clinical placement?

Note Takers Perspective: For soft skills, the speakers stressed that simulation can support students and improve communication skills. For those that experienced simulation during their program, the graduates felt they gained greater confidence prior and within their clinical placement setting. Simulation for technical skills was also observed as important but recognition was given to the difficulty in simulating certain instruments for programs that did not have access to such technology.

The speakers recognized the ability of simulation to supplement and enhance clinical placement as well as improve competency obtainment. The clinical placement was described by one speaker as the time when they were able to, 'fine tune their technical and soft skills'. The speakers were all appreciative of the use of simulation. Equally critical was the direct clinical experience, good and bad, that they received as it did strengthen their ability to advocate and recognize inappropriate situations that would and could support their career readiness.

Facilitator Observation: The graduates verified that simulation was an important aspect in their training. From the user's experience, it is likely that an increased use of simulation techniques to support clinical placement experience would be beneficial for all programs.

Audience Comments and Questions for Recent Graduate Panel

Note Taker Perspective:

Audience Member A – The individual echoed hearing stories of technologists not wanting to accept students in the clinical placement setting. The question was posed to the graduates regarding how they have used their experience in their professional careers since graduation. Several students expressed interest in training new students and becoming clinical instructors and have started to do so in their labs. They were also focused on creating open communication with students and fostering feedback without rancour or negativity.

Audience Member B – The individual asked those panellists interested in becoming clinical instructors, what they would do with the communication feedback that is provided. A graduate speaker stated that simulation was a good time to make mistakes, receive feedback for improvement and allow for further practice. The graduate discussed communication differences between the generations and highlighted that simulation provided an opportunity to discover and understand this.

Audience Member C –   A participant stated that the program used a clinical placement survey with their recent graduates to obtain direct feedback. The individual discussed the difficulties in getting clinical sites to sign off on competencies as they were 'too busy'. It was extrapolated that the shortage of clinical sites might be the reason why programs are experiencing difficulties and that expectations of these sites may not be achievable at this time due to external factors beyond an MLSP's control.

Audience Member D – This individual was 'not surprised' by the survey results and negative indications as they described what they had been hearing for many years. It was recognized that there is a divergence between what is taught in programs and what is required in the clinical placement setting. The speaker also discussed the notion of an individual being categorized as a 'problem student' if one speaks up about an issue and the negative impact that this can have on all parties involved. The educational programs are required to follow-up with students and clinical placements to obtain feedback but it is difficult to get the truth. A panellist spoke of their professional pride and sense of community. This individual looked forward to helping students in the future and suggested greater support from schools to assist students in the clinical placement.

Audience Member E - The attendee provided the perspective of the preceptor when an unsafe occurrence happens with or around students. There may be a fear of employment reprimand and therefore, the preceptor is subjected to a vulnerable situation similar to that of the student. It was suggested that preceptors should be reinforced/trained to use best practices for reporting purposes and students need to be strong advocates for improved safety. Preceptors, like the students, should practice using simulated scenarios to better prepare them for situations to be encountered in the lab with and without students.

Facilitator Observation: Key Points from Panel

Recent graduate experiences according to survey results are representative of current clinical placement scenarios within Canada. Survey results, the graduate panel discussion, and associated recommendation should be considered relevant for both MLT and MLA programs.

- Overall, students are benefiting from clinical placement experience but can see areas for improvement.

- Communication strategies between students, education programs and clinical placement staff need to be reviewed and improved.

- Students require a safe place to discuss clinical placement concerns and require improved feedback as to how those concerns are being addressed.

- All parties should advocate for greater safety and improved support for clinical placement staff and instructors

- Training for preceptors should be advocated in order to develop a safe student centered environment.

- Recognition of staffing shortages, burnout and potential for decreased clinical placement quality should be considered in all programs as they search out effective clinical placements.

- Development of simulation curricula to improve soft and technical skills would be beneficial for all students, and preceptors.

Keynote Speakers – The Glue of Simulation and Its Impact on Future Models of Education

The Forum heard two exemplary keynote speakers who provided insight on grounding breaking simulation research and transformational ways of thinking about competency attainment – Dr. Pam Jeffries and Dr. Brian Hodges.

> **Dr. Pam Jeffries** PhD, RN, FAAN, ANEF, is Dean and Professor at George Washington University School of Nursing, the past president of the Society for Simulation in Healthcare. Throughout the academic community, she is well regarded for her expertise in experiential learning, innovative teaching strategies, new pedagogies, and the delivery of content using technology in nursing education. Dr. Jeffries has served as PI on grants with national organizations such as the National League for Nursing (NLN), has provided research leadership and mentorship on national projects with the National Council State Board of Nursing, and has served as a consultant for health care organizations, corporations, large health care organizations, and publishers providing expertise in clinical education, simulations, and other emerging technologies. Dr. Jeffries has recently edited three books examining simulation.

Dr. Jeffries' presentation provided a practical perspective of simulation and its application to health professions academic programs, including MLT and MLA programs. She loosely defined simulation as a 'clinical activity or practice that presents a situation in the most 'real' way possible'. Simulation should be used as a problem solving event where the student has an opportunity to connect theory with practice within a confined environment. It requires the pivotal component of feedback to ensure full impact on student learning. Dr. Jeffries presented a large scale multi program nursing study she co-led that demonstrated positive results in the use of simulation. This study help solidify that "simulation is an effective

modality and can replace up to 50% of a clinical practicum" (ncsbn.org/685.htm). She also pointed out that in order to conduct simulation effectively, specialized training is required and imperative. Communication is key to simulation success, and it 'takes a village' and strong leadership to implement it on a large scale.

> **Dr. Brian Hodges** MD, PhD, FRCPC, is the Executive Vice-President of Education at the Michener Institute of Education at UHN, the Richard and Elizabeth Currie Chair in Health Professions Education Research and a Professor in the Faculty of Medicine and the Faculty of Education at the University of Toronto. Acknowledged as a leader in medical education and scholarship, Dr. Hodges has worked with medical schools and licensure organizations around the world. Among his many accomplishments, he has received the 2015 Abraham Flexner Award for Distinguished Service to Medical Education, which recognizes extraordinary individual contributions to medical schools and to the medical education community as a whole.

Dr. Hodges conceptualized simulation differently from Dr. Jeffries, giving the audience a more theoretical understanding of simulation, clinical placement and competency obtainment. He provided an understanding of the current healthcare system and its dramatic changes in recent years, as well as how programs should view their clinical placements in relation to the impending future market demand. He discussed the ability of simulation to work in conjunction with the clinical placement setting, rather than focusing on time and resource issues. There is a constant cycle between goal setting, simulation and the clinical placement as the health care system changes. Examples of simulation were provided and used to highlight how we can think about simulation in less conventional ways and how to use its potential for collaboration (i.e. simulation can be adopted by other professions and refined to meet new needs). Dr. Hodges highlighted a few areas of caution in regards to simulation that can degrade the technique and these would be weak learning-feedback loops, devaluing the role of the clinical instructor, need to replicate 'hidden curriculum' in the simulation (make simulated scenarios as real as possible), confirm the validity of the simulation experts, and keep in mind that that simulation can supplement and shorten clinical placement but it cannot fully replace it, as in the quote 'clinical placement is also a form of simulation'.

Facilitated Questions:

1. Would you please comment on the coordination efforts to implement the study among multiple programs? What were the lessons learned (barriers and facilitators)?

In response to the question, Dr. Jeffries discussed the importance of a team effort in the coordination, training and facilitation of the simulation project. Without a strong communication algorithm and passion for teaching and simulation, the project would have faltered.

2. Increasing the use of simulation implies a need to determine which competencies should and should not be assessed in this format. Can you speak to the local/provincial/territorial and national variability associated with competency assessment and what the ideal format to determining this should be? For example, should there be standardization across Canada or can competency assessment allow for regional difference?

Dr. Hodges described a need to standardize and create fixed competencies but highlighted the importance of building flexibility into the teaching and assessment functions. Determining the 'happy medium' is difficult. This is the portion, he suggested, that needs to rely on supervisors ensuring the existence of clinical leaders and students who can learn together. He also noted that there is a gap between competencies the students have and what the employer is looking for. Dr. Hodges supported simulation to achieve or facilitate competency attainment and emphasized that soft skills must be included in the skill set acquisition.

Audience Comments and Questions for Keynote Speakers

The audience was provided with an opportunity to ask questions of the keynote speakers. The discussion included:

*   Consideration for the use of simulation for MLAs within long-term care facilities,

*   Focus simulation conversations with an eye to future changes in healthcare and to look at other countries and professions to examine potential change,

*   Communication and feedback within any simulation model is critical,

*   Simulation doesn't have to include an 'entire' scenario or be high fidelity as it can be just as useful if only a portion is provided or low fidelity simulation is used, and

*   Recognition for simulation research from other professions that can be modified or adapted to suit the needs of any profession.

It was noted that replicating the nursing study presented by Dr. Jeffries was not required to 'prove' simulation can replace a portion clinical placement; however, creation of standardized simulation curriculum for other professions would be valuable.

Presentation - Simulation Defined

Dr. Timothy Willett was welcomed to the Forum and noted that he was pleased to be a part of a ground breaking event. He described the Forum as the first of its kind for a national professional association to have scheduled a dedicated conversation on the topic of simulation and clinical placements.

> **Dr. Timothy Willett** MD, MMEd, is the Interim President for SIM-One, a non-for-profit organization devoted to the advancement and advocacy of simulated learning in health professions education for the benefit of patient care and safety. He has an extensive and respected background in simulation research, development of simulation curriculum, and intricate knowledge of facilitating simulation networking, collaboration and knowledge translation.

Dr. Willett provided an overview of simulation and its importance as defined by the larger simulation community. He also expanded upon the evidence justifying simulation usage within academic programs. He highlighted the importance of focusing a national conversation on simulation not as a "simulation versus clinical placement" debate, but rather on what is the best way to balance the two in order to best suit the needs of programs and employers. He reminded the audience about the facilitators and barriers to incorporating simulation and provided practical examples for overcoming them.

Presentations – Medical Laboratory Simulation in Canada- Examples in Practice

Note Takers Perspective: Representatives from three programs across Canada provided a brief overview of their simulation activities or program models (see agenda for program presenters). The audience was provided with an opportunity to present individual program simulation examples. This component of the forum was deemed 'highly' valuable as indicated on the forum evaluation survey. Of the respondents, 90% indicated a positive score of 'very high' or 'high' in reference to the value they placed on the interest and relevance of the topic. Anyone interested in the specific illustrations cited in this discussion may contact the presenters directly for further detail (see Agenda for presenters; contact information was distributed to all attendees).

Educator Panel Discussion – Moving Beyond Our Comfort Zone

The Forum was honoured to hear the perspective of educators representing four programs in Canada – New Brunswick Community College, College of the North Atlantic, The Michener Institute of Education at UHN and Red River Community College. These individuals were able to provide further insight into MLT and MLA programs. The presentations ranged from those that incorporate a heavy degree of simulation to a minimal amount; programs with long clinical placements to shorter ones and from urban programs to more rural. This diversity in perspective helped shaped a national understanding of how educators view simulation and clinical placement models, and where the future of simulation could be to support student and clinical needs.

1. For each panelist, please provide a quick summary of your simulation model as well as the structure of your clinical placements.(1-2 minutes each)

Note Takers Perspective: This opening question allowed programs to describe their current models and showcase any specific program components that would be important for the audience to understand prior to the discussion. For a detailed understanding of the programs, please contact the presenters directly.

2. From the survey results discussed this morning, we can see (for the most part) that programs are obtaining the clinical placement they require for their students. However, there were comments that indicated it was difficult to obtain clinical placements settings; while others wanted to increase the quality of these placements beyond a satisfactory level. What is your perception of this concept locally, provincially and/or nationally? Are there innovative clinical placement models that we can adopt?

Note Takers Perspective: The discussion highlighted the significant changes that have occurred within laboratories over the past several decades, whether that be technology, staffing models, practice etc.; however, these changes can make it difficult to maintain clinical placements which fulfill competencies requirements. Due to the rapid and constant change, which is driven by market place demands beyond the educational program's control, there are inherent challenges in tracking and monitoring the quality of clinical placements. The variability between clinical placements was identified across Canada. A grounding reminder though was discussed and focused considerations associated with MLSP broad content as well as the mobility of students between provinces rather than their specialization within a particular competency (i.e. competency versus proficiency). The question arose as to whether it was necessary to train students in all disciplines to the same level, noting that competency within the five med lab disciplines was still required (e.g. can clinical placements be arranged in a manner where specialization occurs if some competencies in non-specialization areas could be replaced by simulation?). Innovative consideration to sharing clinical placements slots that were unused between programs was discussed. There were also considerations for the arrangement of the disciplines and it was noted that a larger scale discussion should be had in regards to concepts such as whether histology should be a part of the MLT curriculum as a separate discipline or absorbed by cytology. The conversation was expanded by a brief discussion on the shortage of MLTs in core labs and the required clinical experience to support this group of professionals.

Facilitator Observation: The panel recognized the challenges, within and outside of programs, to obtain quality placements consistently as well as the variability of this situation across the nation. The panellists indicated the need for and ability of programs to work together in a united direction for change, albeit the change per program would be tailored to suit local needs. Nonetheless, the conversation highlighted the potential for a coordinated national agenda to support programs achieve high quality clinical placement for all students.

3. As we have heard today, simulation can be used to replace and/or enhance clinical placements. What do you envision as the ideal balance between simulation and clinical placement within programs?

Note Takers Perspective: This discussion was abbreviated due to time restrictions and the consideration that keynote speakers had sufficiently validated the use of simulation. There is now a large amount of research evidence within the simulation community to conclude it can replace, in part, and/or enhance clinical placements without negative impact on students. The study presented by Dr. Pam Jeffries' landmark research solidifies this statement. In addition, the concept of a 'simulation to clinical placement balance' had been identified in several of the presentations at other well-known conferences. It was discussed as appropriate to standardize curricula nationally; however flexibility was required to reinforce individual program needs or gaps. The panellists were asked for their level of support of these comments and all agreed positively.

Facilitator Observation: The evidence based knowledge that simulation can enhance clinical placements presented during the Forum helped to create a consistent understanding of how simulation can support MLSP programs moving forward. The need to create sharable and evidence based simulation curricula would be highly desirable at this time.

4. What do programs need in order to support the use of simulation as well as to reduce clinical placement hours?

A speaker started the conversation with one word, "Money!" This was a comedic but true statement made in relation to the question. Recognizing that simulation can be costly, the speakers teased out this concept further, recognizing the need for funding and support from their academic institutions as well as from external funding bodies (grants, corporate sponsorship etc.). It was noted that programs are primed for change and many have simulation already built into their programs to accommodate competency obtainment. As represented in the environmental scan, it was highlighted that this was one of the main barriers to moving forward to simulation.

The speakers also recognized, however, that innovation and creativity was necessary to supplement funding and showcased ideas on how to obtain or create simulation content in ways that were not fiscally burdensome. One idea was to simply reframe our understanding of simulation to recognize that low fidelity models, which can be cost effective, can be just as good as high fidelity. Another example was to increase our program relationships with industry such as actively seek donations for used equipment that may otherwise be thrown away.

This conversation was expanded with the reminder that the reduction of clinical placement time requirement is not unique to MLSPs but rather that it is a consistent issue within most applied health programs. There is a need to research further and support 'our story', engaging programs and the relevant professions to move forward with change. A panelist remarked on the need to create a space for shared simulation information and curricula as well as the importance of decreasing propriety constraints. This was reiterated by a statement on communication silos and that deep and meaningful discussion is required to build med lab simulation curricula for all of our programs. One speaker described the necessity for increasing interprofessional program content and participating in interprofessional simulation sessions on ethics, professional behavior, communication, and

patient interactions. It was clearly felt that this coming together of programs could create an opportunity to capitalize on content that can be modified for program specific needs, rather than 'reinventing the wheel'. Overall, the speakers were optimistic that MLSPs can incorporate more simulation to support their students' needs and enhance or replace part of their clinical placement.

The facilitator of the panel discussion asked the panellists to describe what they need to move simulation forward. She described the need for research to validate simulation curricula that is med lab specific and increased communication and collaboration based on personal discussion with programs. One panellist suggested that improved partnerships with clinical placement sites would be imperative as we move forward. Another panellist suggested that simulation should be focused on 'something that you want to assess which is seen infrequently, where making assessment opportunities hard to come by and the difficult situation is hard to recreate.'

Facilitator Observation: There are opportunities to shape the future of simulation within MLSPs and creative ideas are current available. The ability to collate these ideas and put them into action may require a structured national initiative to support that programs achieve this, it will be necessary to provide professional and academic awareness of the importance of investigating new models of simulation and clinical placement. Also, a further discussion with employers and clinical placement sites would be beneficial to derive content for future simulation curricula in addition to helping understand their needs within the larger conversation.

Key Points from Panel

- There is recognition by educators of the difficulties that programs have in achieving quality clinical placements within laboratories due to uncontrollable changes in the public and private sectors within laboratories.

- Many MLSPs are ready and willing to investigate new or enhanced simulation and clinical placements models. The succinct definition of simulation for MLSPs will help shape this discovery.

- High fidelity simulation is not a requirement; rather, low fidelity simulation may be more appropriate for some programs to incorporate in the short term.

- There is a need for evidence based simulation curriculum creation on a national level. Sharing it among programs should be explored.

- A meeting/conference with employers will be required to move forward with future discussions to support students within clinical placements as well as to determine targeted specific simulation curriculum activities to be shared nationally.

Small Group Discussions

During the afternoon session, the attendees were randomly assigned a group number to participate in small group discussions facilitated by CSMLS representatives. The goal of the discussion was threefold: 1) derive a medical laboratory based definition of simulation, 2) identify barriers and solutions to incorporate standardized simulation into MLSP curricula, and 3) list ways to support clinical placement settings to increase safety practices/training for students in the laboratory.

1. Using the definition of simulation by Royal College of Physicians and Surgeons, describe "simulation" as it relates to medical laboratory science programs.

Using the Royal College of Physicians and Surgeons definition of simulation, the small groups discussed how each would accept and/or change the definition to refine it for MLSPs within Canada. This national understanding of one simulation definition was highlighted as imperative to focus a potential movement given that the environmental scan showed variable understanding of what techniques should or should not be included. Based on the small and larger group discussions throughout the day, the following definition was derived:

> **"Simulation is** an educational technique used to imitate real life scenarios (in part or whole), which enables participants to demonstrate and receive feedback on knowledge, skills, abilities and/or judgement**.** This can include but is not limited to communication, problem solving, critical thinking and the ability to collaborate and work effectively within a health care team. Simulation can reflect simple to complex situations or processes and can be accomplished in any of the following examples:
>
> - through interactive written case-based scenarios,
> - computerized laboratory information system gaming,
> - inter- or intra-professional role playing,
> - standardized patients,
> - task trainers such as rubber arms for phlebotomy,
> - virtual simulation for specimen identification,
> - haptic simulation,
> - high fidelity simulation, or
> - hybrids of any of these examples.
>
> Similar to healthcare simulation, academic student simulation encompasses a range of activities with a broad common purpose of improving the effectiveness and efficiency of services and ultimately, enhancing competency acquisition by students in a safe and secure environment that reduces potential harm to patients, students, and the laboratory and general healthcare systems."

Facilitator Observation: The need for a national MLSP based definition of simulation was discovered within the environmental scan data and reiterated throughout the Forum, such as the educator's panel. The resulting definition from the small groups will help align programs in describing and creating new simulation, providing a consistent understanding of the topic moving forward. Although there may be other definitions used for simulation, it is suggested that this definition be held as the national gold standard when describing program activities.

2. We have heard today that there is evidence supporting simulation usage in the education of health science students. How can we incorporate more simulation into MLSP curricula? How can we create a level of standardization for simulation across Canada?

Small group discussion participants were asked to contemplate keynote presentations, think over the conversations held throughout the day and integrate this with their prior knowledge to compile a list of barriers and solutions for greater usage of simulation in MLSPs. The following table has been compiled from the recorded notes by each group:

Table 1: Barriers and Solution for Simulation Incorporation into MLSP Curricula

	Barriers	Solutions
1	Lack of simulation standardization	• Continue discussion, such as in Forum, for simulation curricula information exchange • Create clear guidelines of what can be simulated • A national repository of information is required and creation of MLSP specific curricula for national use
2	Inconsistent application of accreditation / regulation	• Foster discussion around and advocate for clear guidelines
3	Funding – for the creation and implementation of simulation; training; resources	• Lobby for policy change and funding • Create partnerships with other MLSP programs and other health science to identify cost saving models with or between academic institutions • Partner with employers, industry and government for creative solutions • Recognize short and long terms gains sharing simulation curricula and knowledge; decrease proprietary barrier • Capitalize on external grants for funding • Identify areas of curricula that could be simulated (enhance computerized samples curricula)
4	Culture – buy in, time allocation, lack of training support, curricula proprietary concerns	• Increase knowledge driven dialogue for various stakeholders such as clinical staff, employers, academic program administration

		etc.
		• Support culture that decreases proprietary concerns (recognize long and short term gains)
		• Create an evidence based business case for cost savings to be shared with administration
		• Narrow the gap between program and clinical site needs through increased communication and identifying mutual goals
		• Aggregate simulation and clinical placement model research and program experience for knowledge exchange
5	Lack of creativity	• Identify CAMLE / educators forum for discussion / partnerships • Utilize online simulation for rural or long distance based learning scenarios
6	Lack of space (resources, staffing)	• Share space in hospitals, with programs / creative scheduling
7	Lack of advocacy	• Increase national, provincial and program presence for advocacy efforts • Increase MLSP presence as simulation and clinical placement experts
8	Length of curricula and clinical placement	• Systematically identify redundancies between curricula and clinical placement • Identify areas where simulation can potentially decrease clinical placement hours

Facilitator Observation: Group discussions were fruitful and yielded multiple ideas with potential solutions for programs to tailor to their needs. A core theme among these ideas is increased collaboration to offset resource concerns as well as building tools required to advocate for change and use as a resource library. These ideas are the building blocks when put into action represent the starting of a national agenda that programs can use to guide their next steps.

3. How can we support our clinical placement settings to increase safety practices/training for students in the laboratory? How can we support the clinical instructors during this time of fiscal constraints, human health resource shortages, and increased stress/burnout? How can we use simulation to achieve this?

The following represents the accumulation of ideas presented by the small groups:

Table 2: Supportive and Innovative Ideas to Improve Student and Preceptor Experience in the Clinical Setting

	Ideas	Ease of Implementation	Goal Timeline
1	Improve training for obtaining clinical instructor status	Moderate - Hard (culture change; may be outside of program's control)	Medium Term (on going)
2	Increase authenticity of simulation	Hard	Long Term
3	National standard for preceptor training funded	Easy	TBD
4	Simulation videos to supplement curricula	Easy	TBD
5	On site education and support for simulationists	Easy	Short Term
6	Recognition for clinical sites (individuals and employers)	Easy	Short Term
7	Engage employers in simulation and clinical placement discussions	Somewhat Difficult	Long Term
8	Create or improve clinical site safety audit and feedback loop	Hard	Long Term
9	Standardize simulation curricula	Easy to hard (depending on subject)	Long Term

Where small group discussions did not provide details in their written notes the facilitator has added additional information based on discussion recollection to the above table.

Facilitator Observation: Group discussions focused on high level need to engage others and creating more transparent and direct communication channels. Considerations for simulation curricula training were also highlighted. It is hoped that these ideas, and more, will continue to move into action at the program level.

Forum Evaluation

A forum evaluation was conducted after the event using an online survey sent to all attendees. Overall, there was a strong positive assessment of the Forum ('excellent' or 'very good') by respondents. True value of the event can be captured in the impact questions which asked the "extent to which the Forum and package content…" affected change on the individual and their actions. Whether it was increasing understanding and awareness, changing or confirming a positive perspective on simulation's ability to enhance clinical placement experience, or prompt the individual to use the gathered information for new or enhanced initiatives or policies, all scores revealed high positive results as noted in the table below.

Table 3: Forum Evaluation Questions

Evaluation Question	% Positive Score		Total Responses	n Value
To what extent did the Forum and package content….				
…increase your understanding and awareness of simulation activities within Canadian medical laboratory science programs (MLT and MLA)?	84%	'significantly' to 'moderately'	32	38
… change or confirm your positive perspective on the ability of simulation to enhance the clinical placement experience?	87%	'significantly' to 'moderately'	34	39
…prompt you to want to use the information, discussions and summary report analysis for initiative/policy creation or enhancement in your program/organization?	85%	'significantly' to 'moderately'	33	39

Qualitative comments that highlight program action in response to the Forum include:

- *I'm going to try and start looking at more low tech ways to add SIM to my courses. I liked the message that the entire process doesn't have to be simulated just the piece you wish to assess.*

- *Program faculty expect to discuss the take away at our next faculty meeting to determine other examples we may use to enhance our current initiatives. We did learn, much of what we do, contains some aspects of simulation.*

- *We are planning to introduce simulation in the affective realm. We had always rather thought of simulation as "technical" work, but the interaction made us aware that affective domain is a good thing to look at and also that you don't have to have evaluate everything, you can pick and choose parts of the experience to evaluate.*

- *We have already had an initial meeting to talk about what we do already, how students receive feedback and how we can improve on that piece. Next we are looking for some initiatives that can be implemented into the upcoming year, identifying other initiatives that we can collaborate on with the other health programs at our campus.*

Comments provided by participants showcased their enjoyment of the day and the idea exchange. There were further requests for additional reference resources, more examples of simulation activities and a place to house conversations and information. Participants demonstrated that they are now primed for continuing the conversation with employers and have a vested interest in the subject. They also indicated a need for the next level of information gathering that is more detailed in nature for implementation of activities or guidance (e.g. the alignment of simulated activities with certification competencies).

Example comments include:

- *Great job CSMLS!!! UNITED CANADA for Laboratory Science, just in time for Laboratory Professionals Week. Thank you for giving me the opportunity to attend this important event.*

- *I thought it was a good idea to try and create a means for national exchange on the subject. In other words share our knowledge and practices on some form of web based program.*

Conclusion

The Simulation and Clinical Placement Forum can be considered a great success, having achieved the goals set for the day. Attendees were able to come to a consistent national understanding of the positive impact simulation can have on enhancing MLSPs through quality improvement and decreasing clinical placement hours. The following are key conclusions and recommendations from the day's event:

- Simulation can now be understood as an evidence-based technique that is capable of reducing clinical hours in a positive and meaningful way for students.

- A new model of communication between MLSPs and simulation curricula sharing is required to support program change moving forward.

- MLSPs are engaged and invested in looking towards future changes in curricula to support students achieve competency through the highest quality clinical placement and simulation experience possible.

- The MLSP specific simulation definition, derived by Forum participants, and information contained in this report can be used to support a national understanding of simulation and be communicated to administration for business case models.

In order to continue the simulation and clinical placement movement, there are specific recommendations to maintain momentum and support programs in achieving change. These initiatives include, but are not limited to:

- Create a discussion platform for simulation and clinical placement evidence and knowledge sharing (e.g. information repository, conference, teleconference).

- The employers of clinical sites should be brought into the conversation in the next project phase as major change in programs will be dependent on their participation.

- Through further information gathering from other professionals and profession specific research for MLSPs, determine how standardized simulation for programs can be created.
    - A national study to prove simulation is effective in reducing clinical placement hours is not required; however, the creation of medical laboratory specific national curricula should be validated through published quality assurance and research initiatives.
    - The components of curricula best suited for simulation need to be defined and a collaborative movement to create this is necessary.

- Gathering support from professional associations, increasing publication of evidence by MLSPs, and increasing advocacy efforts by all will help leverage MLSP's abilities to create business cases for change.

As MLSPs look towards the future, it is clear that there is a collective interest in supporting students achieve the means of becoming competent professionals. With continued discussion, in an open and transparent manner, this group will set a higher standard for all MLSPs in the future.