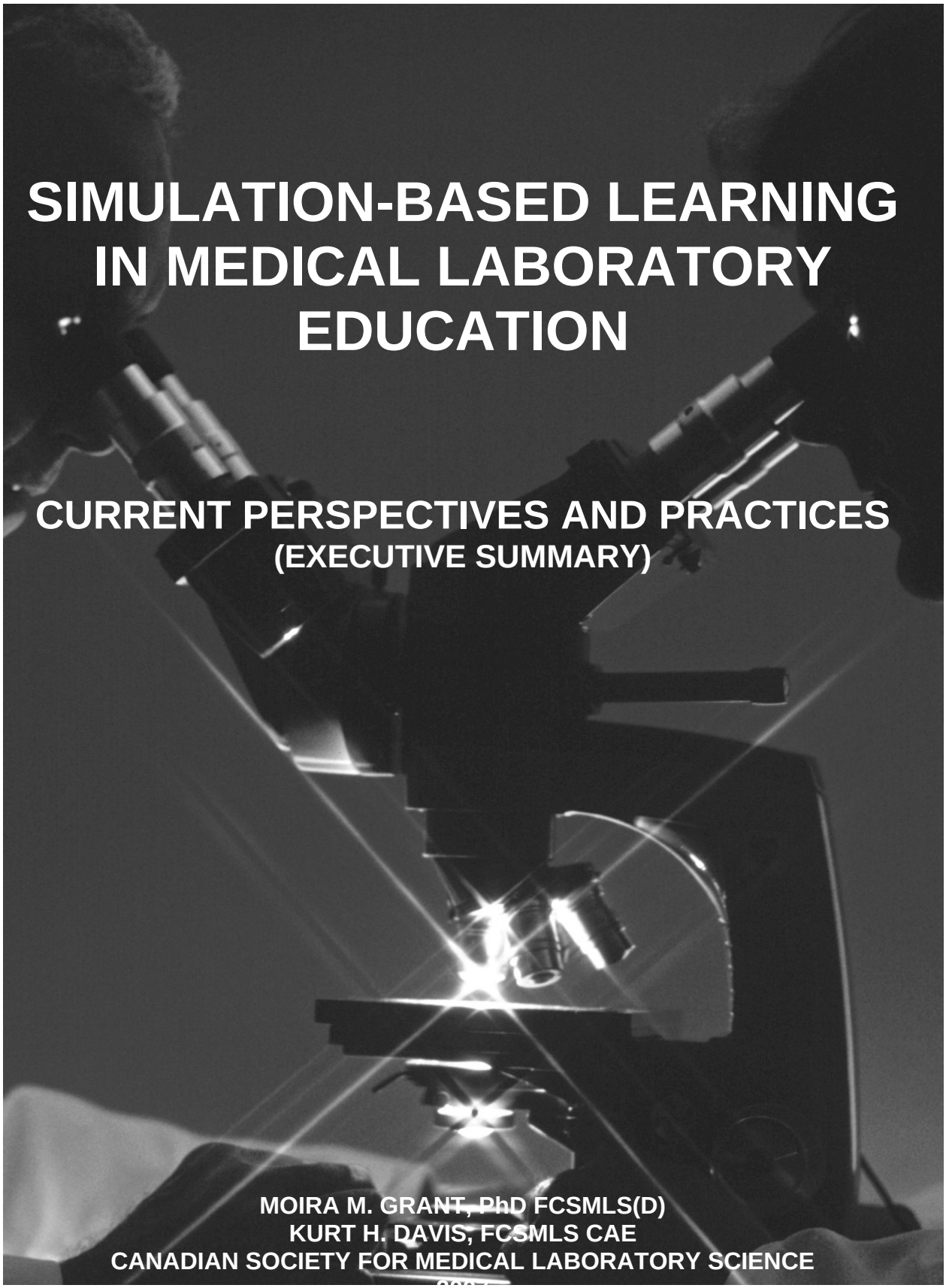

SIMULATION-BASED LEARNING IN MEDICAL LABORATORY EDUCATION

CURRENT PERSPECTIVES AND PRACTICES
(EXECUTIVE SUMMARY)

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EXECUTIVE SUMMARY

This report outlines a research project implemented by the Canadian Society for Medical Laboratory Science (CSMLS) and funded by Health Canada. The project was intended to provide the foundations for an evidence base for simulations in medical laboratory education and to identify any gaps in evidence in order to inform educational practices, policy- and decision-making processes, and potential directions for further research.

Data gathering included a written survey completed by medical laboratory program directors, site visits, and interviews with instructors, students, graduates, and clinical site personnel. An extensive review of the literature demonstrated the relative lack of published information on simulations in medical laboratory education as well as evidencing the need for further inquiry into the educational validity of simulations in health professional education in general.

The responses of contributors to this study have helped to create a detailed picture of simulation laboratories. Survey respondents and interview participants provided a number of reasons that simulated laboratories are being used in their programs. Challenges with clinical placements were mentioned most frequently as a motivating factor, even in programs that have had their simulation laboratories in place for 25 years or more. Pedagogical validity was rarely cited as contributing to the shift to simulation-based learning and most educators were not aware of any literature that would provide an evidence base for use of these activities in medical laboratory education. Patient safety also does not appear to be a motivating factor in the use of simulations for medical laboratory students.

Study participants who have been involved in simulation-based learning express, for the most part, a great deal of interest and enthusiasm for it. Those who do not have simulations in place are curious about its potential to enhance their program and to resolve challenges with clinical placements.

According to the participants in this study; simulation-based learning activities in medical laboratory programs have positive features that fall into six main categories:

- They enhance the quality of the learning environment.
- They facilitate student acquisition of crucial knowledge, skills, and attitudes.
- They provide opportunities for assessing students.
- They enhance the uniformity of the overall learning experience for all students.
- They have benefits for clinical partners.
- They may facilitate addressing health human resources shortages.

Study participants identified a number of concerns about simulation-based activities in medical laboratory programs. These can be placed in four main categories:

- They are demanding for instructional staff.
- They are resource-intensive.
- Some aspects of laboratory work are difficult or impossible to simulate.
- The quality of the learning experience is uneven.

The findings of this study suggest the following about simulations in medical laboratory education:

- They can be an effective and supportive tool to enhance student transition into the clinical environment, but can not replace clinical experience;
- They are a major draw on resources (human and otherwise) and must be adequately supported both at startup and on an ongoing basis;
- They represent a significant shift in pedagogical practices and must be grounded in educational resources and research-based evidence which are not currently available to educators;
- They are a rewarding teaching and learning experience when supported with sufficient appropriate resources;
- They offer opportunities for academic and clinical educators to foster a more seamless educational experience;
- There is little evidence to support their use in medical laboratory education;
- Their implementation in medical laboratory education appears to be declining due to a lack of resources, most notably funding, and a lack of evidence base to support their use.
- They must be complemented with effective and well-supported clinical education resources and practices.

Given the great interest in simulations as a means of addressing problems with clinical placements, there is little evidence of their potential to do so, particularly in light of the reverse momentum currently underway in Canadian programs. Furthermore, despite the attention being given to simulations and the potential health human resources benefits that are being ascribed to them, simulation-based learning is actually in decline in this profession due to lack of ongoing funding. Targeted short-term funding has left medical laboratory programs high and dry when it comes to planning and implementing sustainable simulation-based curricula.

Medical laboratory programs are caught between a rock and a hard place: unable to procure the clinical education they need for their students due to cutbacks in the clinical environment, and unable to implement the curriculum, including simulations, that they see as necessary in their educational institutions due to lack of long-term funding. This stasis is preventing their addressing health human resources issues.

Themes of sustainability and the need for an evidence base for simulations in medical laboratory education have been evident throughout this process of inquiry. They call for increased attention to accountability for health professional education through research and policy making in education and health services.