

# CLIMATE CHANGE

## Drivers of higher medical laboratory professional standards in Canada

This article is the first in a four-part series examining the possible drivers setting the standards higher for both the current workforce and the students representing our future.



## Part 1: Changes in the Profession

Ask any seasoned medical laboratory professional (MLP) and you will not be in short supply of information on how their knowledge, skills, abilities and judgment have changed and adapted to fit patient health care needs, local work environment requirements and health care system demands over time. You will likely hear a consistent theme: as time has changed, so too has the profession and with it, bringing higher and more complex standards to uphold. The good news is that the MLP metamorphosis has not been a gruesome experience, but, rather a positive multidimensional challenge that the profession has lived up to admirably.

What changes have been encountered by the profession? First and foremost, the rise and fall of human health resources (HHR) has benefited and plagued the allied health professions in Canada<sup>1</sup>. This is not a new story. We are currently in a time of drought, rising retirements and an insufficient supply of future MLPs<sup>2</sup>, so it is not surprising that academic programs, health organizations and policy-makers have been trying to find solutions to this issue<sup>3,4</sup>. What is different in today's world is that the MLP impact is compounded by comorbidities that have not been as influential in the past, such as rapid technological changes, increased complexity of patient care pathways (i.e. precision medicine and point of care), a better-informed and inquisitive patient population, and shifts in skills mix within and between professions. There are other challenges experienced by educational programs, employers and the individuals within the workforce that this series of articles will continue to address.

We all know the story of our parents walking three miles to school in five feet of snow with only paper thin boots on. Could this exaggeration be the case for the MLPs experience? I would argue that the answer is a resounding “No”. There is concrete evidence in addition to personal reflections which demonstrate that the struggles of today are setting a higher standard and MLPs are walking through more snow than ever.

### Workload Drivers

About half of all MLTs will be eligible to retire in the next 10 years, with Canada's rural and remote communities hit the hardest<sup>5,6,7</sup>. Recently released data shows that the greatest loss within the MLP workforce (2010–2014) were those 21 to 30 years post-graduation. There was not a corresponding increase in the number of MLTs obtaining certification in any age category<sup>2</sup>. It is worthwhile to understand the push toward greater efficiency and the parallel increase in demand of total workload required per individual.

As the majority of developed health care economies are “seeking a much sounder evidence base for clinical practice”<sup>8</sup>, Lean and Six Sigma have been hot ticket process improvements strategies over the last decade<sup>9</sup>. While these strategies may have cut excess processes and identified time wasted, they have also allowed for new process models and improved technology that increased workload substantially. Workload measures continue to show an upward trend for MLPs<sup>10,11</sup>. For example, Ontario had projected a 1.8% per year increase for lab tests between 2005 and 2010, however, an actual increase of almost 4% per year was experienced resulting in the number of tests going up faster than the workforce capacity<sup>12</sup>.

### Patient Drivers

Health care leaders and government<sup>13</sup> are more actively discussing and incorporating the importance of patient engagement and experience within policy, with 85% considering the patient-as-consumer trend to be an opportunity<sup>14</sup>. It is argued that sharing information and engaging patients can demonstrate lab efficiency and effectiveness such as reducing redundancy<sup>15</sup> and decreasing the chance for diagnostic errors<sup>16</sup>.

Over a decade ago, it was predicted that the “increased access by health professionals, and the prospect of allowing patients to have direct access to diagnostic services (already a reality in

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some countries) will inevitably increase the workload of those staff who are trained and qualified to provide advice on the selection of tests and the interpretation of results”<sup>8</sup>. This trend has come true. For instance, patients who reported feeling less involved and less informed about their care were more uncomfortable asking their provider questions (33%) compared to those who felt informed (67%)<sup>17</sup>. With the rise of patient portal usage and transparency of decision-making through the health care team (moving beyond physician dominance), patients are shopping for services and have easy access to quality information with the support of the system around them<sup>18,9,19,20</sup>. With increased transparency and active engagement of patient, comes greater responsibility of MLPs to be involved in and lead knowledge translation activities.

### Skill Mix Drivers

With the decline in available MLPs, medical laboratory employers are replacing these individuals by either repositioning skill mix models within the profession (between MLTs and MLAs) or between different professions (e.g., pathology assistants)<sup>21</sup>. For example, automation in the laboratories has dramatically impacted MLTs as the new testing systems can be operated by MLAs, reducing the need for MLTs (a more expensive workforce in a time of fiscal constraints). Also, standardization allowed by such changes in technology in conjunction with process improvement strategies have facilitated testing standardization and allowed more tasks to be considered “routine”. This is not a downloading of

services to other professions, but rather, a natural endeavour to fill gaps aimed to create a laboratory workforce that is multi-skilled and interdisciplinary which increases attention to expertise areas rather than practicing diffusely. Laboratory medicine has adjusted its mix to meet the needs of the service it provides, gaining greater control as information managers.

### Changes in Knowledge Acquisition

The National Institutes of Health Genetic Test Registry has more than 7,000 orderable tests for approximately 3,000 conditions and 6,300 genes, which represents a doubling of genetic tests over two years<sup>22</sup>. Keeping up with the latest advances in testing, precision medicine, point of care devices and diagnostic technology is not a small task<sup>2</sup>. This means that MLPs must continually acquire large quantities of new knowledge to effectively deal with more complex

equipment and situations. There is also a growing trend for increased complexity of patient treatments that require sophisticated laboratory work to monitor and alter care when required. Recently constructed programs such as Choosing Wisely ([www.choosingwiselycanada.org](http://www.choosingwiselycanada.org)) recognize these trends and help support health care professionals in decreasing unnecessary tests and treatment to ultimately provide high-quality care.

### Conclusions

MLPs are being propelled to the forefront of change and with this come the drivers that push them forward and set a higher standard.

- As shortages in the MLP continue, we continue to see an increase in workload measurement tools reporting a disproportionate increased demand for tests. The trend to utilize efficiency models

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has supported this ability but demand for current workload standards exceeds it.

- Transparency of information results in higher standard expectations by patients and health care organizations for the professionals, increasing the bar for those who provide laboratory tests and diagnostic data.
- Shifts in the skill mix for MLPs have resulted in a specialization within the practice and a movement of routine or automated tasks from MLTs to MLAs, increasing the minimal competency requirements of the workforce.
- Knowledge acquisition for MLPs is constant and increasing in complexity from the patient pathways and technological perspectives. ■



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#### Other Resources

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