

**MEDICAL LABORATORY TECHNOLOGISTS  
NATIONAL HUMAN RESOURCES REVIEW**

**– A CALL FOR ACTION**

**Prepared by the Canadian Society for Medical Laboratory Science**

**April 26, 2001**

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# MEDICAL LABORATORY TECHNOLOGISTS NATIONAL HUMAN RESOURCES REVIEW – A Call for Action

## Section 1: National Overview

A nation-wide shortage of general medical laboratory technologists is predicted within the next five to 15 years resulting in a serious health risk to all Canadians. This report, prepared by the Canadian Society for Medical Laboratory Science (CSMLS), examines human resource issues in each province and makes specific recommendations to avert this impending health care crisis.

### Background

Medical laboratory technologists are Canada's third largest group of health care professionals. They conduct sophisticated medical tests on blood, body fluids and tissue. Test results are used by physicians to evaluate and make informed decisions about their patients' health and possible treatment and to further advances in medical research. Medical laboratory technologists are graduates of accredited training programs at the college level, although many also have university degrees. Most of them complete the national certification examination administered by the Canadian Society for Medical Laboratory Science. Certification is offered in three disciplines: General Medical Laboratory Technology, Diagnostic Cytology and Clinical Genetics. **This report deals exclusively with human resource issues affecting general medical laboratory technology.**

Health care restructuring resulted in significant downsizing of the medical laboratory technology work force in Canada during the 1990s. As a result, accredited training programs in medical laboratory technology were cut back or eliminated altogether. In 1997, an alarming trend was discovered while preparing a CSMLS membership report. A significant percentage of CSMLS members were eligible to retire within the next 20 years. This discovery, coupled with the dramatic reduction in the number of training positions, prompted CSMLS to ask the federal government to review human resource requirements for medical laboratory technologists.

At the urging of CSMLS, the Advisory Committee on Health Human Resources (ACHHR), an interprovincial committee comprised of deputy ministers of health or their designates, conducted an environmental scan on the human resource issues affecting medical laboratory technology. The results were published in May, 1999 in a report entitled, "*An environmental scan of the human resource issues affecting medical laboratory technologists and medical radiation technologists.*"

The report concluded that "the anticipated rate of retirement in the baby boom technologists work force in the next five to 10 years is expected to create a significant shortage, which is already being felt." It recommended that a national strategy be developed to address this impending human resource crisis.

To date, no action has been taken on the recommendations contained within the Environmental Scan. Meanwhile, the shortage of medical laboratory technologists is growing. Reports emanating from other countries, such as Britain and the United States, indicate that this is a global problem. **This report is a call to action to provincial and federal governments to take immediate steps to ensure that there is a sufficient number of medical laboratory technologists to meet the future health care needs of Canadians.**

## Limitations of existing work force data

One of the major difficulties of addressing the human resources issue for medical laboratory technologists is the lack of accurate data on the current work force. In fact, the Environmental Scan acknowledged the limitations of existing data and recommended the establishment of a national data base to develop accurate projections of future human resource requirements for medical laboratory technologists. Unfortunately, this recommendation has not yet been implemented.

This report is a compilation of information from a variety of sources, including CSMLS, provincial societies and regulatory bodies for medical laboratory technologists and accredited training programs. The data presented in this report present a reasonably accurate picture of human resource trends in general medical laboratory technology across the country. However, CSMLS recognizes the need for more accurate data and supports the recommendation contained within the Environmental Scan for the establishment of a national human resource data base for general medical laboratory technology.

## A Looming Crisis

According to recently published data, the total number of medical laboratory technologists was reduced by at least 29 per cent over the last ten years of health reform (CIHI – Review of Health Human Resources 1986-1997). Medical laboratory technology sustained more cuts than any of the other health care professions. The current work force has been downsized to such an extent that it is extremely vulnerable to a shortage.

Table 1 shows the number of medical laboratory technologists who will be eligible to retire over the next 15 years. As you can see, 12 per cent of the total work force will be eligible to retire in five years; 15.8 per cent in ten years and another 16.6 per cent in 15 years. **By the year 2015, 44.4 per cent of the medical laboratory work force will either have retired or will be eligible to retire.**

**Table 1**

<b>Time frame</b>	<b>Total number of eligible retirements *</b>	<b>Number per year</b>	<b>% of total work force</b>
Now -2005	2551	510	12.0
2006-2010	3357	671	15.8
2011-2015	3513	705	16.6

**Estimate of current medical laboratory work force in Canada: 21,185**

\* Estimated on certification at age 20 and early retirement at age 55

## The Impact of Cuts to Training Programs

Drastic cutbacks to training programs for general medical laboratory technologists have reduced the pool of new graduates who will be available to replace those who will retire over the next 15 years. Table 2 shows the number of training programs and positions available in each province.

**Table 2. Training Program Positions Currently Available (November 2000)**

Province	Number of Training Programs	Training Positions Available per year	Number of students enrolled
NF	1	27	22
NB	1	20	21
NS	0	–	–
PEI	0	–	–
QC – E – F *	1 9	40 350+	33 350 +
ON	3	93	82
MB	0	–	–
SK	1	16	16
AB	3	51	47
BC	1	40	40
<b>National – English</b>	<b>11</b>	<b>287</b>	<b>261</b>
<b>National – French</b>	<b>9</b>	<b>350 +</b>	<b>350+</b>

*\* Information not provided by one program, another also operating but not currently accredited*

Table 3 provides an estimate of the number of English training positions that will be required to produce a sufficient number of graduates to replace those technologists who will retire over the next 15 years. As you can see, the number of training positions must be increased significantly to avert a shortage of medical laboratory technologists.

**Table 3. National Training Positions – English \***

Time frame	Positions Currently Available per year *	Number of new graduates needed per year	Difference per year	Additional training positions needed over 5 years
Now - 2005	287	406	- 119	595
2006-2010	287	511	- 224	1120
2011-2015	287	553	- 266	1330

*\* Includes one English language instruction program in Quebec*

**Table 4. National Training Positions – French (Quebec Only)**

<b>Time frame</b>	<b>Positions currently available per year</b>	<b>Number of new graduates needed per year</b>
Now - 2005	350 +	104
2006-2010	350 +	160
2011-2015	350 +	150

Table 4 indicates an oversupply of French-language training positions in Quebec.

### **Other Considerations**

Several other factors must be taken into consideration when developing a human resource plan for medical laboratory technology.

- An aging population with exponential increases in demands on the health care system. There has been no consideration given to the increases in workload as the baby boomer generation ages and their declining health impacts the system.
- New technologies and instrumentation have been introduced in the medical laboratory at an exponential rate in the last few decades. Y2K also resulted in a significant equipment replacement cycle. No other area of healthcare has seen as much an increase in the use of technology – the success of these changes has been the highly trained professionals operating these systems. Reports from the USA clearly evidence the negative impact on quality where lesser trained personnel are employed in this highly sophisticated workplace.<sup>1</sup>
- Increasing government regulations, quality assurance initiatives, along with more detailed record-keeping requirements, will require additional human resources.
- The impact of further health reform.
- Burnout and fatigue are already taking a toll on the current medical laboratory work force. Across Canada, there are already many reports of worker fatigue, with many current workers seeking reduced hours in the twilight of their careers. The fatigue factor has the potential to accelerate worker plans for retirement, possibly even before the predicted early exit time lines in this report. Shortages due to illness will result in higher overtime costs, as well as increased sick time benefit expenses.
- The increased use of technology and laboratory assistants has been suggested in the environmental scan as a possible solution to the human resource crisis in general medical laboratory technology. Unfortunately the authors of this report failed to take into consideration the demographics of the current laboratory assistant work force in Canada, and HRDC data would suggest that they share a similar age profile to medical technologists. At the current time, there is not a human resource plan

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<sup>1</sup>The Physicians Office Laboratory Study, State of California. 1997.

in place for laboratory assistants. As such, the supply of properly trained and qualified laboratory assistants is uncertain.

- There have been pressures in some sectors to use university degree science graduates for work in clinical laboratories. The experiences of the '90s clearly demonstrated the failure of subject-specific certification in the face of the ever changing needs of the clinical laboratory of the new millennium. A move in this direction will be a disservice to the workers for future career opportunities, as well as putting patient care at risk with workers who do not have the comprehensive understanding provided in the training of a general medical laboratory technologist.
- There have already been reports of concerns about turnaround times for cytology testing in some provinces. This study has only examined the HR issues related to the training of general medical laboratory technologists. HR issues in the area of clinical genetics require attention as well.

# CSMLS Medical Laboratory Human Resources Profile

## Section 2: Provincial Subsections

### Newfoundland Subsection

Estimated current medical laboratory technologist work force in Newfoundland: 430 \*

Retirement Predictions (based on average age of certification at 20 – retirement at 55)

Time frame	Total Number of eligible retirements*	Eligible Retirements per year	% of total work force	Number of Training Positions per year
Now -2005	75	15	17.4	27
2006-2010	79	16	18.3	27
2011-2015	120	25	27.9	27

At the current time, it appears that Newfoundland is producing a sufficient number of graduates from their training program (approximately 20 per year) for the next ten years; however, this assumption is based on the total retention of graduates within the province. Clearly there is an extremely high-risk situation evolving in the province if previous trends of moving elsewhere to find work continues. This is driven by the lack of full time work opportunities as well as the less than competitive salaries currently being offered. Newfoundland graduates have regularly moved west to find work in provinces such as Saskatchewan and Alberta where salaries are 25 to 30 per cent higher. With the rapidly emerging shortages in the west, this trend should be expected to continue.

The time frame of 2011 to 2015 presents an area of concern, and should be addressed with increased enrollments by 2009 to ensure an adequate supply of graduates by 2011. The educational programs must also monitor student retention rates carefully to ensure an adequate number of graduates compared to the initial enrollment. Medical laboratory technology is a very intense program with a high risk of drop-out. It must also be noted that medical laboratory technology will be competing with many other health professions for potential students due to the general HR crisis in health care, and special efforts will be required to ensure that all possible training positions are filled.

### Recommendations

The following key points are presented for consideration of the future medical laboratory technologist HR needs in Newfoundland.

- Careful monitoring of student retention, with a focus on meeting the expected number of graduates during the next ten years. Special effort may be required by the training program to recruit a suitable number of students in view of the competition with many other professions affected by the exodus of the baby boomers from the work force.



- Careful monitoring of graduate employment, especially with a view to watching interprovincial mobility. Many other provinces will be facing serious HR shortages, and will be recruiting aggressively across Canada. Newfoundland must offer competitive salaries if it is to avoid a “brain drain” to the rest of Canada. Medical laboratory technologist salaries must also be competitive with other health professions in order to attract the calibre of personnel required to operate the highly complex laboratory of the next millennium.
- Increasing enrollment in 2009 to meet the impending surge of retirements during 2011-2015, with careful monitoring of student success and graduate mobility.

### **Other concerns**

- Metropolitan areas may need to resort to the use of lesser qualified personnel to alleviate the shortage of available medical laboratory technologist grads. There will be increasing pressures for laboratory assistants to work beyond their scope of training. These individuals are currently not certified at either the provincial or national levels, and therefore do not possess the professional ethos which would discourage them from working beyond their scope of training. This poses a serious threat to public safety in the absence of professional regulation in Newfoundland.
- Problems will become more extreme in rural areas of Newfoundland where there is a smaller HR pool, and there are reports already of recruiting difficulties. Special incentives may be required to attract students from these areas, or for graduates from metropolitan centres to move to work in the centres.

\* data assumptions based on NLSLT 1999 survey results combined with CSMLS in-house data.

## Nova Scotia Subsection

Estimated current medical laboratory technologist work force in Nova Scotia: 837

Retirement Predictions (based on average age of certification at 20 – retirement at 55)

Time frame	Total number of eligible retirements *	Eligible retirements per year	% of total work force	Number of training positions available per year
Now -2005	107	21	12.8	0
2006-2010	180	36	21.5	0
2011-2015	180	36	21.5	0

Nova Scotia is in the most precarious position of all the provinces. It does not have a training program and yet has the largest percentage of its work force eligible for retirement over the next fifteen years.

**Urgent action** is required to avert a serious shortage in the province.

## Recommendations

The following key points are presented for consideration of the future medical laboratory technologist HR needs in Nova Scotia:

- Opening the medical laboratory technology program (4-year BSc in MLS currently being proposed ) in the fall of 2001 would require a minimum of 48 graduates per year to return human resource levels for the profession back to current levels by the year 2010. This is assuming 100 per cent retention in the program and the province. Realistically this is not possible, and the intake for the program would need to be at least 60 students per year for the first five years. Following a careful assessment of current needs and program output, it might be possible to reduce enrollment to produce approximately 40 graduates per year beginning in the 2006 intake year. A slightly lower enrollment figure (42 per year) might be considered if a three-year college program were activated as an alternate, however serious consideration should be given to linking this into an articulated learning path similar to the New Brunswick program to better serve the long term learning needs of Nova Scotia students.
- Careful consideration will need to be given to the clinical training requirements for medical laboratory technology students. Nova Scotia previously had simulated clinical training as an alternate approach; however, it is strongly recommended that consideration be given to actual clinical placement of students. Appropriate resources and education will be required to ensure the success of this activity.
- It is essential that there be careful monitoring of student retention, with a focus on meeting the expected number of graduates during the next ten years. Special effort may be required by the training program to recruit a suitable number of students in view of the competition with many other professions affected by the exodus of the baby boomers from the work force.

- There is a need for careful monitoring of graduate employment, especially with a view to watching interprovincial mobility. Many other provinces will be facing serious HR shortages, and will be recruiting aggressively across Canada. Nova Scotia must offer competitive salaries if it is to avoid a “brain drain” to the rest of Canada. Medical laboratory technologist salaries must also be competitive with other health professions in order to attract the calibre of personnel required to operate the highly complex laboratory of the next millennium.

### **Other concerns**

- Problems will become more extreme in rural areas of Nova Scotia, especially in Cape Breton, where there is a smaller HR pool. Special incentives may be required to attract students from these areas, or for graduates from metropolitan centres to move to work in the centres.

## New Brunswick Subsection

Estimated current medical laboratory technologist work force in New Brunswick: 607

Retirement Predictions (based on average age of certification at 20 – retirement at 55)

<b>Time frame</b>	<b>Total number of eligible retirements *</b>	<b>Eligible retirements per year</b>	<b>% of total work force</b>	<b>Number of training positions available per year</b>
Now -2005	105	21	17.2	20
2006-2010	96	20	15.8	20
2011-2015	119	23	19.6	20

## Recommendations

The following key points are presented for consideration of the future medical laboratory technologist HR needs in New Brunswick:

- Based on the current planned program enrollment, New Brunswick is one of the best placed provinces for future medical laboratory technologist HR needs. It is essential that there be careful monitoring of student retention, with a focus on meeting the expected number of graduates during the next ten years. Special effort may be required by the training program to recruit a suitable number of students in view of the competition with many other professions affected by the exodus of the baby boomers from the work force.
- There is a need for careful monitoring of graduate employment, especially with a view to watching interprovincial mobility. Many other provinces will be facing serious HR shortages, and will be recruiting aggressively across Canada. New Brunswick must offer competitive salaries if it is to avoid a “brain drain” to the rest of Canada. Medical laboratory technologist salaries must also be competitive with other health professions in order to attract the calibre of personnel required to operate the highly complex laboratory of the next millennium.

## Prince Edward Island Subsection

Estimated current medical laboratory technologist work force in PEI: 125

Retirement Predictions (based on average age of certification at 20 – retirement at 55)

Time frame	Total number of eligible retirements*	Eligible retirements per year	% of total work force	Number of training positions available per year
Now - 2005	25	5	20.0	0
2006-2010	15	3	12.0	0
2011-2015	18	4	14.0	0

Prince Edward Island is in a difficult position as it does not have sufficient demand to justify a training program and is therefore reliant on the resources of neighbouring Atlantic provinces. With a pending shortage in neighbouring provinces, PEI will likely have difficulty replacing empty positions. Problems will become more extreme in rural areas of PEI where there is virtually no HR pool. Special incentives may be required to attract students from these areas, or for graduates from metropolitan centres to move to work in the rural locations. The lack of diagnostic services could threaten the viability of rural health care services.

## Recommendations

Several issues are provided for consideration in addressing future training enrollment in PEI:

- Negotiating with New Brunswick for five additional seats to be added to their program to accommodate students from PEI. Some type of special admissions program through the PEI government may be indicated, along with possible tuition assistance for prospective PEI students.
- The development of a clinical phase training site at the Queen Elizabeth Hospital in Charlottetown to enhance student retention in PEI. Additional staffing resources will likely be required to fulfill this task.
- Possible negotiation with other training programs (especially Nova Scotia if they are able to start their program in the near future) to provide clinical training in PEI to prospective future employees.
- Aggressive promotion to PEI students to consider medical laboratory technology as a future career. Health professions will be competing amongst themselves for a limited pool of students, many of whom will be considering “dot com” careers.

## Other Concerns

- PEI will need to offer attractive salaries to keep technologists from migrating to “greener fields” elsewhere.
- New graduates will need full-time jobs to be retained in PEI, or else they will migrate elsewhere for full-time employment.

## Quebec Subsection

Estimated current medical laboratory technologist work force 5000

Retirement Predictions (based on average age of certification at 20 – retirement at 55)

<b>Time frame</b>	<b>Total number of eligible retirements *</b>	<b>Eligible retirements per year</b>	<b>% of total work force</b>	<b>Number of training positions available per year</b>
Now -2005	520	104	10.4	350
2006-2010	800	160	16.0	350
2011-2015	750	150	15.0	350

At the current time, it appears that Quebec is adequately supplied with medical laboratory technology graduates, with an estimated 350+ students currently enrolled in medical laboratory technology training programs.

## Other Concerns

Several key issues need to be monitored:

- English-speaking Quebec graduates will have many opportunities for mobility across the rest of Canada due to the HR shortages in most provinces. The needs of English-speaking institutions in Quebec should be monitored closely to ensure that these institutions are adequately supplied with qualified medical laboratory technologists.
- Careful monitoring of graduate employment, especially with a view to watching interprovincial mobility. Many other provinces will be facing serious HR shortages, and will be recruiting aggressively across Canada. Quebec must offer competitive salaries if it is to avoid a “brain drain” to the rest of Canada. Medical laboratory technologist salaries must also be competitive with other health professions in order to attract the calibre of personnel required to operate the highly complex laboratory of the next millennium.
- As the many other health professions seek to attract students into their programs of study, problems may arise in recruiting students for programs of study in medical laboratory technology. Data should be collected and monitored carefully in this area, tracking the number of applicants for medical laboratory technology. If applications drop significantly it may be necessary to introduce awareness programs to attract a sufficient number of appropriate applicants.

## Ontario Subsection

Estimated active work force in Ontario based on CMLTO data: 6614

**Retirement Predictions** (based on average age of certification at 20- retirement at 55)

Time Frame	Total Number of eligible retirements	Number per year	% of total work force	Number of training positions available per year
Now - 2005	742	158	11.2 %	93
2006-2010	1062	212	16.0 %	93
2011-2015	1085	219	16.5 %	93

The projected rate of exit from the profession as indicated above is extremely concerning in view of the fact that at the current time Ontario has not made any significant changes in training program enrollments since the cutbacks which occurred in the mid '90s.

At the current time, there are three accredited medical laboratory technologist training programs in Ontario, with an approved potential enrollment of approximately 120 students. Despite the number of positions available, current enrollment only saw 52 students seeking professional certification in 2000 (55 in 1999). This is far below the actual needs for replacement of current positions.

## Recommendations

### To meet the current needs through to 2005:

- immediate action to increase the current enrollments to approved capacity
- immediate establishment (intake by fall of 2001) of a training program in Northern Ontario to meet this region's special needs
- immediate addition of suitable number of training positions to achieve 175 nationally certified grads per year

### To meet future needs 2006 - 2015

- careful monitoring and, if appropriate, establishment of additional training program positions to meet the expected attrition
- development of articulated college university program for medical laboratory science

## Other Concerns

Several key issues need to be considered when examining the response to the HR concerns in Ontario:

- Currently accredited training programs are **not at full quota** according to their approved accreditation capacities. This may be because there is not funding for all the positions in the didactic phase, or perhaps because of a lack of placement opportunities due to the impact of health reform on affiliated clinical phase teaching hospitals. Whichever the case, this should be the first course of action as these

programs are already in existence and it is more practical to boost their enrollment as a first response to this challenge. Funding for clinical training must also be included in these actions.

- There is a serious lack of training programs in Northern Ontario. Where there were previously four programs (Canadore, Cambrian, Thunder Bay and Lakehead University), there are now none. Recruitment to the north has been an ongoing problem for the health professions, and best success will result from reestablishing at least one training centre in the north.
- Consideration should be given to opening at least one other new medical laboratory technology training program in Ontario. The current programs serve specific geographic zones, and consideration should be given to establishing clinical positions in regions not currently involved with student MLT training.
- Recruitment into the health professions must include a concerted effort towards attracting students into medical laboratory technology programs. With the pending HR crisis in all the health professions, many new recruits will need to be attracted to health careers, and a cooperative effort amongst the professions should be considered. Funding for these activities must be provided from government sources as the voluntary not-for-profit health professional groups are unable to provide the level of resource that will be required for an effective campaign.
- The uncertainty of the health reform of the '90s, along with the reductions and cutbacks, has had a significant impact on the Ontario medical laboratory industry. Recent reports from the Laboratory Proficiency Testing Program (LPTP) provide statistical evidence of a decline in the quality of laboratory work in the province of Ontario.<sup>2</sup> Similar concerns about quality have been expressed by members of the CMLTO as well. Clearly, reducing costs in the medical laboratory has been at the price of quality of Ontario health care. Not responding to this HR issue will see a further decline in quality of Ontario health care.
- The HR supply for MLT's in Northern Ontario will reach the crisis level much before the metropolitan areas of southern Ontario. In fact there are already reports of concerns about the ability to recruit to rural and northern areas of the province. If priority is not given to this issue the HR situation in the north will clearly compromise the quality of patient care.
- Laboratory reform is a work in progress in Ontario, and the long term impact on HR needs is unknown. It would be clearly prudent to coordinate the future training of medical laboratory technologists in the regional HR plans, including funding for both didactic (possibly shared between regions) and clinical training positions.

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<sup>2</sup> Laboratory Medicine in Ontario: its downsizing and the consequences on quality. *Clinica Chimica Acta* (1999) 57-72.



## Manitoba Subsection

Estimated current work force in Manitoba: 1180

Retirement Predictions (based on average age of certification at 20 – retirement at 55)

Time frame	Total number of eligible retirements	Eligible retirements per year	% of total work force	Number of training positions available per year
Now -2005	208	42	17.6	0
2006-2010	182	36	15.4	0
2011-2015	187	37	15.8	0

Clearly there is an extremely high risk situation evolving in the province of Manitoba. The failure to re-open the training program in Manitoba by 2000 has created a situation which will endanger the ability to provide quality medical laboratory services in Manitoba much in advance of the rest of Canada. Problems will become more extreme in rural areas of Manitoba where there is a smaller HR pool, which is consequently more seriously affected with the level of attrition predicted. There are already reports of recruiting difficulties in rural areas of other provinces.

## Recommendations

Several options are provided for consideration in addressing future training enrollment:

- Opening the medical laboratory technology program (2-year community college program currently being proposed) in the fall of 2001 would require 50 graduates per year to return human resource levels for the profession back to current levels by the year 2010. This is assuming 100 per cent retention in the program and the province. Realistically this is not possible, and the intake for the program would need to be at least 70 students per year for five years. The program then could reduce enrollment to 60 per year beginning in the 2006 intake year to respond to subsequent year's predicted loss.
- Strong consideration must be given to linking the college program with a degree completion process to serve to the long-term learning needs of Manitoba students. Otherwise, they will be significantly out of step with the rest of the country, limiting opportunities for future career development.
- The above numbers would suggest that there might be room in Manitoba for two training programs with an enrollment of 35 to 40 students each for a time period of at least the next ten to fifteen (15) years. In view of the population distribution of the province, it would be wise to consider a second program outside of the major centre of Winnipeg, with Brandon being the next likely location for such a program. Shared learning resources could make this a very economical and practical solution.

## Saskatchewan Subsection

Estimated current medical laboratory technologist work force in Saskatchewan: 1092

Retirement Predictions (based on average age of certification at 20 – retirement at 55)

<b>Time frame</b>	<b>Total number of eligible retirements *</b>	<b>Eligible retirements per year</b>	<b>% of total work force</b>	<b>Number of training positions available</b>
Now - 2005	134	27	12.3	16
2006-2010	172	35	15.7	16
2011-2015	224	45	20.5	16

## Recommendations

The following key points are presented for consideration of the future medical laboratory technologist HR needs in Saskatchewan:

- Student enrollment has recently been increased to an intake every year at the SIAST Kelsey program; however, the above numbers indicate that class size must be almost doubled from the current 16 per year if the demands of the next five to 10 years are to be addressed.
- Serious study must be given to the time period 2011 to 2015. If the expected attrition of the next ten years materializes, there is sufficient time now to increase enrollment to address the increased attrition of this time period.
- Careful consideration will need to be given to the clinical training requirements for medical laboratory technology students. The pressures and stresses of today's workplace require special support for the training of clinical phase students. Kelsey's move to supply clinical support for students helps ensure the success of this phase of the training, and will likely reduce attrition.
- It is essential that there be careful monitoring of student retention, with a focus on meeting the expected number of graduates during the next ten years. Special effort may be required by the training program to recruit a suitable number of students in view of the competition with many other professions affected by the exodus of the baby boomers from the work force.
- There is a need for careful monitoring of graduate employment, especially with a view to watching interprovincial mobility. Many other provinces will be facing serious HR shortages, and will be recruiting aggressively across Canada. Saskatchewan must offer competitive salaries if it is to avoid a "brain drain" to the rest of Canada. Medical laboratory technologist salaries must also be competitive with other health professions in order to attract the calibre of personnel required to operate the highly complex laboratory of the next millennium.

## Other Concerns

- There will be increasing pressures to use laboratory assistants and it is critical to ensure that they do not work beyond their scope of training. These individuals are currently not certified at either the provincial or national levels, and therefore do not possess the professional ethos which would discourage them from working beyond their scope of training. This will be an issue which will need to be monitored by the SSMLT , the professional regulatory body for medical laboratory technologists in Saskatchewan.
- Problems will become more extreme in rural areas of Saskatchewan where there is a smaller HR pool. There are reports already of recruiting difficulties in rural areas in the western provinces. Special incentives may be required to attract students from these areas, or for graduates from metropolitan centres to move to work in the centres.

## Alberta Subsection

Estimated current medical laboratory technologist work force in Alberta: 1760

Retirement Predictions (based on average age of certification at 20 – retirement at 55)

Time frame	Total number of eligible retirements *	Eligible retirements per year	% of total work force	Number of training positions available
Now - 2005	190	38	10.8	51
2006-2010	252	50	14.3	51
2011-2015	298	60	16.9	51

## Recommendations

The following key points are presented for consideration of the future medical laboratory technologist HR needs in Alberta:

- Student enrollment has recently been increased with the reactivation of the SAIT program in Calgary. This puts the total potential enrollment in Alberta to 51 students per year; however, the SAIT program will not have any graduates available to the marketplace until 2002, and there is already a shortage of qualified medical laboratory technologists in Alberta. Careful monitoring of student attrition is recommended to ensure that sufficient numbers of students are completing the program to meet the needs of the workplace.
- Serious study must be given to the time period 2011 to 2015. If the expected attrition of the next ten years materializes, there is sufficient time now to increase enrollment to address the increased attrition of this time period.
- Careful consideration will need to be given to the clinical training requirements for medical laboratory technology students. The pressures and stresses of today's workplace require special support for the training of clinical phase students. The health reform in Alberta has had a significant impact on the workplace resource to support students in the clinical phase of their training, and needs to be monitored carefully, with possible additional resource to be considered.
- It is essential that there be careful monitoring of student recruitment. Special effort may be required by the training program to recruit a suitable number of students in view of the competition with many other professions affected by the exodus of the baby boomers from the work force.
- There is a need for careful monitoring of graduate employment, especially with a view to watching interprovincial mobility. Many other provinces will be facing serious HR shortages, and will be recruiting aggressively across Canada. Alberta must offer competitive salaries if it is to avoid a "brain drain" to the rest of Canada. Medical laboratory technologist salaries must also be competitive with other health professions in order to attract the calibre of personnel required to operate the highly complex laboratory of the next millennium.

## Other Concerns

- The metropolitan areas of Alberta already have a high utilization of laboratory assistants, and it is critical to ensure that they do not work beyond their scope of training. The ASMLT monitors the training of laboratory assistants in Alberta; however, laboratory assistants are currently not evaluated through certification exams at either the provincial or national levels. Concern exists that they may not possess the professional ethos which would discourage them from working beyond their scope of training. This will be an issue which will need to be monitored by the professional regulatory body for medical laboratory technologists in Alberta.
- Problems already exist in rural areas of Alberta where there is a smaller HR pool. Special incentives may be required to attract students from these areas, or for graduates from metropolitan centres to move to work in the centres.

## British Columbia Subsection

Estimated current medical laboratory technologist work force in British Columbia: 3540

Retirement Predictions (based on average age of certification at 20 – retirement at 55)

Time frame	Total number of eligible retirements *	Eligible retirements per year	% of total work force	Number of training positions available per year
Now -2005	579	116	16.3	40
2006-2010	519	104	14.6	40
2011-2015	532	106	15.0	40

British Columbia has one of the most serious HR situations in the supply of qualified graduates. The program at BCIT only reopened in the fall of 1999, and with an enrollment of 40 students has the potential to meet only less than half of the ongoing needs of BC for qualified medical laboratory technologists. Strong consideration should be given to the addition of a second training program in British Columbia as they will not be able to rely on importing technologists from other parts of the country as has been past practice in view of the overall national aspect of the HR crisis in medical laboratory technology.

## Recommendations

The following key points are presented for consideration of the future medical laboratory technologist HR needs in British Columbia:

- The shortage in BC will be an ongoing problem for the next 15 years and student enrollment must be addressed urgently. While BCIT recently offered a special one-time fast-track program for foreign trained technologists, there are strong indicators that the HR problem will be international in scope and BC will not be able to rely on this source of personnel in the long term. The addition of a second program for training BC students is strongly recommended. **Note: BC fast track program no longer available**
- Careful consideration will need to be given to the clinical training requirements for medical laboratory technology students. The pressures and stresses of today's workplace require special support for the training of clinical phase students. The health reform in British Columbia has had an impact on the workplace resource to support students in the clinical phase of training and needs to be monitored carefully, with possible additional resource to be considered.
- It is essential that there be careful monitoring of student recruitment. Special effort may be required by the training program to recruit a suitable number of students in view of the competition with many other professions affected by the exodus of the baby boomers from the work force.
- There is a need for careful monitoring of graduate employment, especially with a view to watching interprovincial mobility. Many other provinces will be facing serious HR shortages and will be recruiting aggressively across Canada. British Columbia must offer competitive salaries if it is to avoid a "brain drain" to other parts of Canada. Medical laboratory technologist salaries must also be competitive with other health professions in order to attract the calibre of personnel required to operate the highly complex laboratory of the next millennium.

## **Other Concerns**

- The metropolitan areas of British Columbia already have a high utilization of lab assistants and it is critical to ensure that they work within their scope of training. This will be an issue which will need to be carefully monitored by the new professional regulatory body which may include laboratory assistants.
- Problems already exist in rural areas of British Columbia where there is a smaller HR pool. Special incentives may be required to attract students from these areas, or for graduates from metropolitan centres to move to work in the centres.

## Section 3: Recommendations

The data provided in Sections 1 and 2 of this report clearly indicate the need to rebuild the education system for general medical laboratory technologists across Canada. Urgent action is required in Manitoba and Nova Scotia as neither of these provinces currently has training programs for general medical laboratory technologists. Priority must also be assigned to new program development in Ontario and British Columbia. British Columbia and Saskatchewan must at least double their current program outputs if serious situations are to be averted. Newfoundland and PEI will likely be seriously impacted by action in neighbouring provinces, and must take positive steps to secure their future human resource supply.

Quebec, New Brunswick and Alberta appear to be producing a sufficient number of graduates to replace those who will exit the work force over the next 15 years. However, this does not take into account the increased demand for medical laboratory services created by Canada's aging population. Care must also be taken to ensure that the supply is not affected by "magnet institutions" that attract away well qualified workers with attractive salaries and job opportunities.

The Canadian Society for Medical Laboratory Science is urging the Advisory Committee on Health Human Resources to take immediate action on three of the report recommendations contained within the Environmental Scan.

- establishment of a national data base to identify the scope of the problem and define the short and long-term needs
- coordination and sharing of labour market information to help determine accurate projections at least three to five years in advance
- coordination and sharing of educational program information to ensure that a sufficient number of positions are available to train future medical laboratory technologists

### Call for a national health human resource plan

Additional training program positions will only be of use if there are students to fill the slots. It is a concern that not all programs are currently full; priority must be assigned to future career recruitment for all the health professions including medical laboratory technology. We need to ensure that we have the right students in the right programs – it is in the best interest of all the health professions to work cooperatively in this regard. ***This is a call for a joint national health professions recruitment initiative*** – the future of Canadian Health Care depends on it. CSMLS supports the Canadian Healthcare Association's recommendation that the federal government establish a \$250 million fund to educate, train, recruit and retain health care professionals of all disciplines.

Graduates must also be assured of finding full-time employment upon graduation. The casualisation of the work force in the health reform action of the '90s must be undone if employers expect to be able to recruit for their future needs – there will be too many other attractive opportunities to continue the part-time and casual employment route for entry into the work force. Special incentives may be required to attract graduates to rural areas which will be seriously impacted by the shortages. Salaries will need to remain balanced across the country to avoid "raiding" medical laboratory technologists from one province to another.