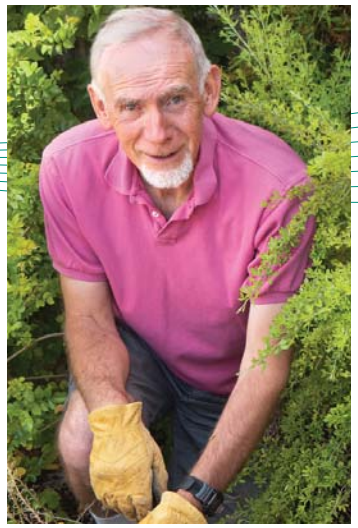




Medical Laboratory Technologists in Canada, 2010

Spending and Health Workforce

Canadian Institute for Health Information
Institut canadien d'information sur la santé

Who We Are

Established in 1994, CIHI is an independent, not-for-profit corporation that provides essential information on Canada's health system and the health of Canadians. Funded by federal, provincial and territorial governments, we are guided by a Board of Directors made up of health leaders across the country.

Our Vision

To help improve Canada's health system and the well-being of Canadians by being a leading source of unbiased, credible and comparable information that will enable health leaders to make better-informed decisions.

Table of Contents

About the Canadian Institute for Health Information

The Canadian Institute for Health Information (CIHI) collects and analyzes information on health and health care in Canada and makes it publicly available. Canada's federal, provincial and territorial governments created CIHI as a not-for-profit, independent organization dedicated to forging a common approach to Canadian health information. CIHI's goal is to provide timely, accurate and comparable information. CIHI's data and reports inform health policies, support the effective delivery of health services and raise awareness among Canadians of the factors that contribute to good health.

For more information, visit our website at www.cihi.ca.

As of November 1, 2011, the following individuals were members of CIHI's Board of Directors:

- Dr. Brian Postl, Chair of the Board, CIHI; Dean of Medicine, University of Manitoba
- Mr. John Wright (ex officio), President and Chief Executive Officer, CIHI
- Dr. Luc Boileau, President and Director General, Institut national de santé publique du Québec
- Dr. Marshall Dahl, Consultant Endocrinologist, Vancouver Hospital and Health Sciences Centre and Burnaby Hospital
- Ms. Janet Davidson, President and Chief Executive Officer, Trillium Health Centre
- Dr. Chris Eagle, President and Chief Executive Officer, Alberta Health Services
- Mr. Donald Ferguson, Deputy Minister, Department of Health, New Brunswick
- Dr. Vivek Goel, President and Chief Executive Officer, Public Health Ontario
- Mr. Denis Lalumière, Assistant Deputy Minister, Strategic Planning, Evaluation and Quality, ministère de la Santé et des Services sociaux du Québec
- Mr. John McGarry, Private Health Administration Consultant
- Dr. Cordell Neudorf, Chair, CPHI Council; Chief Medical Health Officer, Saskatoon Health Region
- Mr. Saäd Rafi, Deputy Minister, Ministry of Health and Long-Term Care, Ontario
- Ms. Anne-Marie Robinson, Associate Deputy Minister, Health Canada
- Dr. Marlene Smadu, Associate Dean of Nursing, University of Saskatchewan
- Mr. Wayne Smith, Chief Statistician, Statistics Canada
- Mr. Howard Waldner, President and Chief Executive Officer, Vancouver Island Health Authority
- Mr. Graham Whitmarsh, Deputy Minister, Ministry of Health Services, British Columbia

Our Neutral, Independent Role

CIHI's mandate is to remain neutral and objective, and to deliver quality, unbiased information. We are not policy-makers. Yet we play an integral role in providing relevant and reliable data and analyses to those who do formulate the policies that shape Canada's health system.

Acknowledgements

The Canadian Institute for Health Information (CIHI) would like to thank the following provincial regulatory bodies, provincial professional societies and national professional society for their efforts, commitment and collaboration in developing and providing data to the database:

- Canadian Society for Medical Laboratory Science
- Newfoundland and Labrador Society for Laboratory Science
- Prince Edward Island Society of Medical Technologists
- Nova Scotia College of Medical Laboratory Technologists
- New Brunswick Society of Medical Laboratory Technologists
- Ordre professionnel des technologistes médicaux du Québec
- College of Medical Laboratory Technologists of Ontario
- College of Medical Laboratory Technologists of Manitoba
- Saskatchewan Society of Medical Laboratory Technologists
- Alberta College of Medical Laboratory Technologists
- British Columbia Society of Laboratory Science

CIHI also wishes to acknowledge and thank members of the Health Human Resources team for their contribution to the production of this publication:

- Michael Hunt, Director
- Carol Brulé, Manager

(Alphabetically, by first name)

- Jingbo Zhang, Program Lead
- Muhammad Furqan Tariq, Co-op Student
- Rahme Daoud, Senior Analyst
- Susan Strawson, Analyst
- Suzanne McAllister, Program Consultant
- Wendy Chong, Senior Analyst
- Xiao Qian (Maureen) Li, Senior Analyst

Please note that the analyses and conclusions in the present document do not necessarily reflect those of the individuals or organizations mentioned above.

Production of this material has been made possible through a financial contribution from Health Canada. The views expressed herein do not necessarily represent the views of Health Canada.

We wish to extend our thanks and gratitude to all medical laboratory technologists who work with Canadians to improve their quality of life.

Executive Summary

Medical laboratory technologists are health care professionals who perform laboratory analyses and investigations and interpret laboratory results to assist clinicians with the diagnosis, treatment, monitoring and prevention of disease.

As of 2010, the profession of medical laboratory technology is regulated in seven Canadian provinces: Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan and Alberta. Data collected for the Medical Laboratory Technologist Database (MLTDB) includes all registrations with the provincial regulatory bodies for these regulated provinces, as well as voluntary registrations with the Canadian Society for Medical Laboratory Science (CSMLS) for the unregulated jurisdictions: Newfoundland and Labrador, Prince Edward Island, British Columbia, Yukon, the Northwest Territories and Nunavut.[i]

All statistics in this section refer to 2010 data, unless otherwise specified.

Workforce Supply

From 2008 to 2010, the number of active registered medical laboratory technologists (MLTs), after removing interjurisdictional duplicates, grew by 1.7% in Canada, reaching a total of 20,087. During the same period of time, Canada's population grew by 2.4%.[1]

Per CIHI's definition,[ii] the MLT workforce in 2010 totalled 19,634. For the seven regulated provinces combined, the number of MLTs per 100,000 population was 58, ranging from 52 in Ontario to 99 in Nova Scotia.

The seven regulated provinces completed regulation in different years:

Quebec: 1973

New Brunswick: 1992

Ontario: 1994

Saskatchewan: 1996

Alberta: 2002

Nova Scotia: 2004

Manitoba: 2007

Demographics

Females dominated the MLT workforce. Of working MLTs in the seven regulated provinces, 85.4% were women. The gender split varied by province; Ontario had the lowest percentage of females (82.1%) and Saskatchewan had the highest (92.8%).

i. The quality of the data for the unregulated provinces and territories is generally low and, as such, most data elements (including age and gender) cannot be reported. As a result, only initial certification information is included in this report for the unregulated provinces and territories.

ii. The MLT workforce includes active registered MLTs who work in medical laboratory technology and are identified as primary registrations according to CIHI's methodology. See details in the Methodological Notes of this report.

Compared with six other groups of health professionals (physicians, medical radiation technologists, occupational therapists, pharmacists, physiotherapists and regulated nurses), MLTs (in the seven regulated provinces) had the third-highest proportion (85.4%) of women in the workforce, after regulated nurses (93.3%) and occupational therapists (91.8%) in Canada.

In the seven regulated provinces, 21.2% of MLTs were younger than 35; this was the second-lowest percentage across the above-mentioned groups of health professionals, after physicians (10.8%). Additionally, 22.4% of MLTs were 55 and older; this was the third-highest percentage, after physicians (35.9%) and regulated nurses (23.5%) in Canada. The average age for all MLTs in the seven regulated provinces was 45.1.

The demographic distribution of MLTs can be further stratified by their positions at their place of primary employment. In five regulated provinces (Nova Scotia, New Brunswick, Quebec, Manitoba and Alberta) the staff MLTs, who accounted for 78.3% of the MLT workforce, were almost evenly distributed among all 10-year age groups, with the exception of those age 60 and older. By contrast, close to half (48.0%) of the MLTs who worked in managerial positions were in their 50s.

MLTs who are 55 and older and/or those who have worked for a longer period of time (such as 30 years) may consider retiring. In this report, MLTs who met the following criteria were categorized into a potential retirement group: 1) those who were at least age 55 and had worked more than 30 years in the profession; 2) those who were at least 60 and had worked more than 25 years in the profession; and 3) those who were 65 and older and were still working in the profession. For the selected provinces of Nova Scotia, New Brunswick, Quebec and Manitoba, the percentage of MLTs who may intend to retire—given their age and number of years worked—was estimated as 17.2% of the combined workforce, ranging from 9.4% in Quebec to 27.2% in Manitoba.

Education and Certification

To become an MLT, post-secondary education in medical laboratory technology from a program accredited by the Canadian Medical Association is required. In 2010, the majority of MLTs in the seven regulated provinces (Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan and Alberta) held a diploma (90.6%) as their basic level of education for entry to practice. This was similar to medical radiation technologists (94.7%). By comparison, the majority of pharmacists, occupational therapists and physiotherapists held baccalaureate or higher-level degrees. The differences reflect the various educational requirements for entry to practice in different health professions.

New graduates are the main source of supply for the MLT workforce. The percentage of recently graduated MLTs was 3.1% in Nova Scotia and New Brunswick, 3.8% in Saskatchewan, 4.4% in Manitoba and 9.2% in Quebec (the provinces where data was available). The average age of new graduates in these five provinces was between 26 and 29.

Graduates are eligible to write a national certification examination offered by the CSMLS. Graduates who plan to work in Quebec must participate in a certification process specific to that province and meet all of its requirements; some may also choose to take the CSMLS national exam. Since the 1990s, MLTs can become certified by the CSMLS in one of three areas: general medical laboratory technology, clinical genetics or diagnostic cytology. Most MLTs obtained their initial certification in general medical laboratory technology (85.3%), while a small proportion of the MLT workforce obtained diagnostic cytology (3.2%) or clinical genetics (1.3%).

Primary Employment

MLTs can practise in the discipline(s) in which they are certified. The top three disciplines/areas in which MLTs practised were clinical chemistry (18.9%), hematology (16.6%) and transfusion medicine/science (14.1%), for the five regulated provinces of Nova Scotia, New Brunswick, Quebec, Manitoba and Alberta.

The majority of MLTs provided diagnostic and therapeutic laboratory services directly to patients. This was observed in the provinces of Nova Scotia, New Brunswick, Ontario and Manitoba, where 80.9% of MLTs engaged in diagnostic and therapeutic laboratory services.

The percentage of MLTs who worked in a hospital setting ranged from 49.6% in Alberta to 91.6% in New Brunswick, reflecting different organizational structures and unique ways of delivering laboratory services across the provinces (Nova Scotia, New Brunswick, Quebec, Manitoba and Alberta). Comparing selected groups of health professionals, MLTs (75.8%) and medical radiation technologists (76.6%) topped the percentage of the workforce working in a hospital setting, followed by regulated nurses (56.3%), occupational therapists (45.3%), physiotherapists (38.0%) and pharmacists (18.3%). A small number of MLTs worked in other settings, such as centralized diagnostic laboratories (6.2%), free-standing diagnostic laboratories (3.6%), public health laboratories/departments/units (2.6%), blood transfusion centres (1.9%) and post-secondary educational institutions (1.6%).

For five selected provinces (Nova Scotia, New Brunswick, Ontario, Alberta and B.C.), laboratory compensation expenses in the hospital sector[iii] remained consistent across four fiscal years (2006–2007 to 2009–2010), making up 66% of total laboratory expenses in hospital laboratories.[iv] For the latest two fiscal years (2008–2009 and 2009–2010), the in-house laboratory services provided to hospital inpatients accounted for approximately 31% of the total workload in hospital laboratories.[v]

iii. The hospital portion of regionalized expenses is included, with the exception of Alberta in 2009–2010.

iv. Since the focus of this analysis is hospital-based laboratory expenses, laboratory expenses in non-hospital settings, which could be a significant amount in some provinces, are not included. For example, approximately 29% of Alberta's total reported laboratory expenses occurred in non-hospital settings in 2009–2010.

v. Data was obtained from the Canadian MIS Database, Canadian Institute for Health Information. The data is not limited to primary employment.

About This Report

Medical Laboratory Technologists in Canada, 2010 is the third release from the MLTDB. It provides the most recent statistics on the MLT workforce, including information on the distribution of the workforce, demographics, and geographic, education, certification and employment dimensions of the MLT workforce in 2010. Data tables and charts are supplemented with detailed information about the data collection process, pertinent limitations of the current data and an explanation of the analytical methods.

This report is intended for use by all levels of government, as well as researchers, advocacy groups, private and public organizations, educational institutions, media and MLTs as a source of data on the MLT workforce in Canada. The information contained in this report is one of the key requirements for effective human resources planning in the health care sector.

In this report, CIHI presents information on MLTs as a distinct health provider group.

Medical Laboratory Technologists in Canada, 2010 includes

- A data analysis section for 2010 MLTDB information;
- A section on provincial/territorial highlights and profiles;
- A comprehensive Methodological Notes section; and
- Separate supporting data tables in MS Excel.

Certain acronyms that are frequently used in this report are explained below:

- CIHI—Canadian Institute for Health Information
- MLT(s)—medical laboratory technologist(s)
- MLTDB—Medical Laboratory Technologist Database
- CSMLS—Canadian Society for Medical Laboratory Science
- CMDB—Canadian MIS Database
- MRT(s)—medical radiation technologist(s)
- OT(s)—occupational therapist(s)
- PT(s)—physiotherapist(s)

Want to Know More?

The full text of *Medical Laboratory Technologists in Canada, 2010* is available, free of charge, in both English and French on CIHI's website at www.cihi.ca.

Other related MLTDB reports/documents that may be of interest are also available on CIHI's website:

- *Medical Laboratory Technologists and Their Work Environment*
- *Medical Laboratory Technologist Database Reference Guide, Version 1.0*
- Privacy Impact Assessment Policy

For more information, please contact

MLTDB Program Lead, Health Human Resources
Canadian Institute for Health Information
495 Richmond Road, Suite 600
Ottawa, Ontario K2A 4H6

Phone: 613-241-7860
Fax: 613-241-8120
Email: mltdb@cihi.ca
Website: www.cihi.ca

About CIHI's Medical Laboratory Technologist Database

To determine the demand for MLTs in any jurisdiction, it is important to understand the present supply and the ways in which that supply is changing.

In consultation with provincial regulatory bodies, provincial professional societies, the CSMLS and other stakeholders, CIHI developed a standardized set of data elements to capture information on the MLT workforce in Canada. These data elements cover demographic, geographic, education, certification and employment dimensions and have been compiled in the *MLTDB Reference Guide*. Since 2008, the MLTDB has collected information on supply and distribution, geography, education, certification and employment of MLTs in Canada.

MLTDB Data Providers

The primary data collectors for the MLTDB are the provincial regulatory bodies and the CSMLS for the unregulated jurisdictions (Newfoundland and Labrador, P.E.I., B.C., Yukon, the Northwest Territories and Nunavut) through voluntary registration with the CSMLS. All the data providers have participated in data submission activities since 2008.

Province or Territory	MLT Data Provider
Newfoundland and Labrador	Canadian Society for Medical Laboratory Science
Prince Edward Island	
Nova Scotia	Nova Scotia College of Medical Laboratory Technologists
New Brunswick	New Brunswick Society of Medical Laboratory Technologists
Quebec	Ordre professionnel des technologistes médicaux du Québec
Ontario	College of Medical Laboratory Technologists of Ontario
Manitoba	College of Medical Laboratory Technologists of Manitoba
Saskatchewan	Saskatchewan Society of Medical Laboratory Technologists
Alberta	Alberta College of Medical Laboratory Technologists
British Columbia	Canadian Society for Medical Laboratory Science
Yukon	
Northwest Territories	
Nunavut	

To be registered or licensed, MLTs are required to complete an electronic or paper registration form from their provincial regulatory body or the CSMLS. The form may collect registrants' employment, education, certification and demographic information. The provincial registrars or the CSMLS capture the information needed for administrative purposes and prepare a subset of the data for CIHI. Sometimes data collectors survey their members to collect additional information to meet the database's requirement. A compiled data file is then submitted to the database according to the specifications in the *MLTDB Reference Guide*. Collecting this data provides a unique opportunity to examine aggregate information about MLTs in Canada, which is essential to identifying supply-based issues for future health human resources planning.

The *MLTDB Reference Guide* is available free of charge on CIHI's website at www.cihi.ca.

Notes

CIHI's figures on MLTs will not be the same as figures published by provincial regulatory bodies or by the CSMLS for the following reasons:

a. **Collection period**—The statistics released by provincial regulatory authorities or the CSMLS typically include all registrations received during the 12-month registration period. In contrast, CIHI collects data as of August 1 of the data collection year. In consultation with provincial regulatory authorities and the CSMLS, this point-in-time data collection was established to ensure timely and comprehensive information in spite of the different registration periods. This method of data collection provides a snapshot of the MLT workforce across jurisdictions on a specific day. Using the same approach consistently will enable comparability over time, which is necessary to accurately determine a trend. Refer to Appendix A for details on registration start and end periods for the different jurisdictions.

b. **Reference population**—For the MLTDB, the population of reference includes all MLTs who register with a Canadian provincial regulatory body or the CSMLS, given that these organizations have submitted data to CIHI.

c. **Exclusions from CIHI data**—The MLTDB does not have data on MLTs who reside and work in an unregulated province or territory and do not voluntarily register with the CSMLS. Also, data for MLTs who registered with their provincial regulatory body or the CSMLS after July 31 of each given year is not collected until the next data collection cycle.

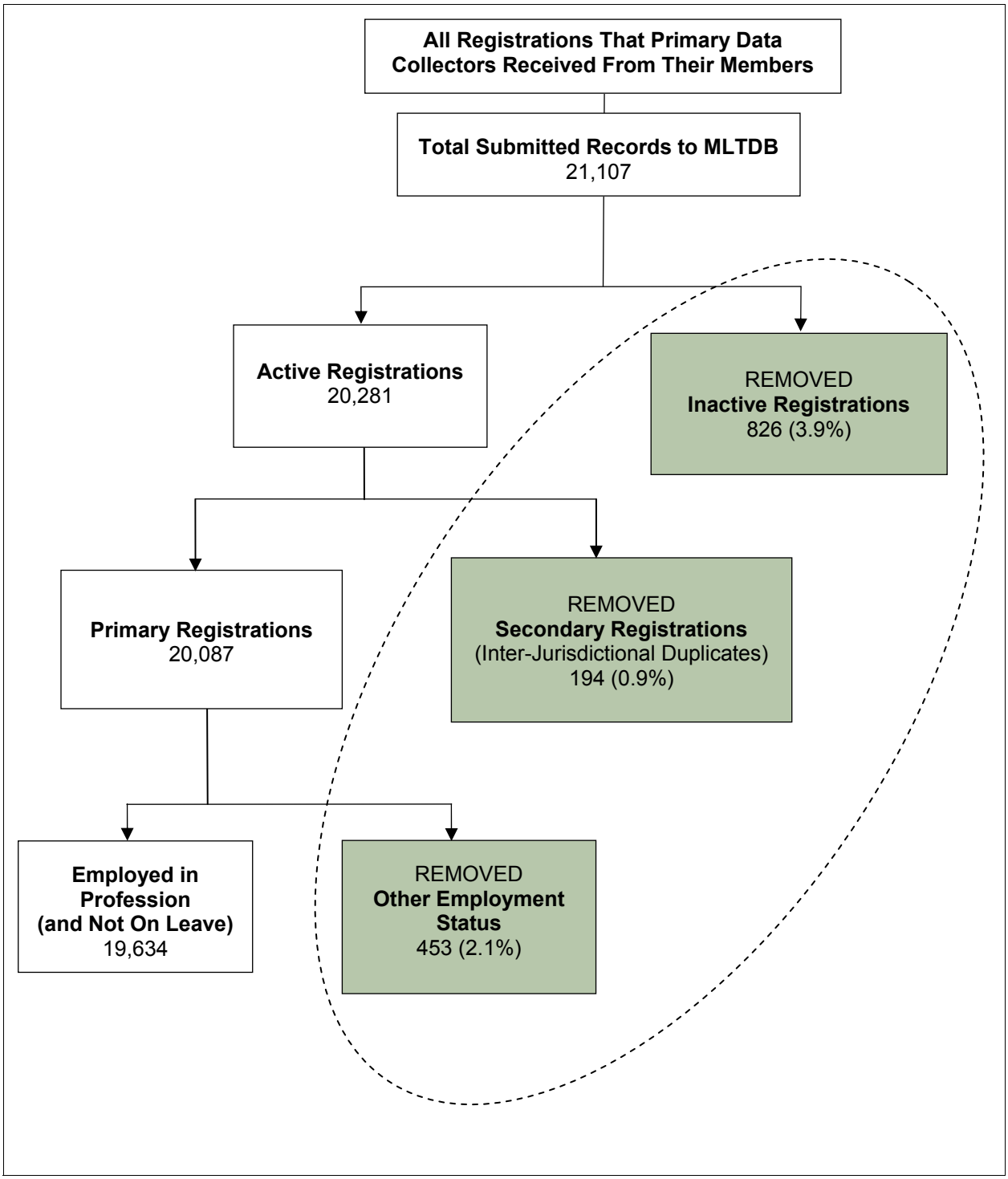
d. **CIHI editing and processing**—Once the data providers send the data files to CIHI, all records undergo processing before they are included in the national database. The MLTDB system checks whether the records are in the proper format and whether they can pass specific validity and logic tests. If the submitted data fails to meet CIHI's standards, or if a logical relationship between specific fields does not make sense (for example, the initial year of employment for a record is before the year of birth), an exception or anomaly report will be generated and sent back to the data provider. These reports assist the data providers in making corrections to the records and resubmitting the data file to CIHI, where it is reviewed again. In cases where the data provider is not able to make the necessary corrections, CIHI may make them with the explicit consent of the provider. CIHI and the data providers work collectively to ensure that high data quality is achieved.

CIHI's Definition of the MLT Workforce in Canada

In this publication, the "MLT workforce" is defined as the total number of MLTs holding active registrations or membership with a provincial regulatory body or the CSMLS who are employed in medical laboratory technology (and not on leave) in Canada, with the exception of interjurisdictional duplicates (that is, those identified as secondary registrations based on CIHI's methodology). For further detail, please see the Methodological Notes of this report.

The following registrations that were submitted by the provincial regulatory bodies and the CSMLS were excluded from the 2010 workforce counts: 826 (3.9%) inactive registrations, 194 (0.9%) secondary registrations and 453 (2.1%) registrations that were identified as individuals who did not work in medical laboratory technology. The total exclusion accounted for 7.0% of the total registrations. The breakdown of the 2010 data is shown in Figure 1.

Figure 1: Defining CIHI's MLTDB Medical Laboratory Technologist Workforce, 2010



Note

The percentages for exclusions are calculated based on the total number of records submitted to the MLTDB. See detailed explanation in the section Data Flow From Primary Data Collector to MLTDB of the Methodological Notes.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Chapter 1—Regulation Status and Supply

Regulation Status

The profession of medical laboratory technology is not regulated in all Canadian provinces and territories. As of 2010, the profession is regulated in seven Canadian provinces: Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan and Alberta. Consequently, the 2008, 2009 and 2010 statistics for these provinces in this report represent the MLT workforce as of August 1 of each year. The profession is not regulated in the remaining jurisdictions: Newfoundland and Labrador, P.E.I., B.C., Yukon, the Northwest Territories and Nunavut. Statistics for MLTs in these unregulated provinces and territories may not represent the entire population but, instead, the majority of those who voluntarily registered with the CSMLS, which provided data to the MLTDB on behalf of these jurisdictions. For this reason, it is important to note that statistics presented in this report for all provinces and territories may not represent the entire population of MLTs or of the MLT workforce in Canada.

Supply of Registered MLTs

Table 1 demonstrates the total number of all registrations, active registrations, primary registrations and workforce for three years from 2008 to 2010. See the Methodological Notes for definitions of each category in detail.

The total number of registered MLTs in Canada was 20,771 in 2008, 20,687 in 2009 and 21,107 in 2010. The majority of the registrations represented active registered MLTs. The total number of active registrations in Canada was 20,281 in 2010. After removing the interjurisdictional duplicates, the total number of primary registrations was 20,087 in 2010. This represented an overall increase of 1.7% between 2008 and 2010. In the regulated provinces, Manitoba showed the largest change, with a growth rate of 4.2% within this three-year period.

The MLT workforce supply was further calculated by narrowing the data down to MLTs who worked in medical laboratory technology, which resulted in 19,634 MLTs in Canada in 2010 (16,744 MLTs for the regulated provinces and 2,890 MLTs for the unregulated jurisdictions).

Table 2 shows an overall total of 58 MLTs per 100,000 population when combining the regulated provinces (Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan and Alberta) in 2010. Due to the unregulated nature of the other jurisdictions (Newfoundland and Labrador, P.E.I., B.C., Yukon, the Northwest Territories and Nunavut), per population estimates may not be an accurate representation of the workforce and so have not been included in Table 2.

Table 1: Supply of Medical Laboratory Technologists, 2008 to 2010

		Regulated Provinces							
	Year	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	Subtotal
Total Registrations Submitted to MLTDB	**2008**	978	670	4,231	7,468	1,075	987	2,300	**17,709**
	2009	965	670	4,207	7,577	1,063	951	2,397	**17,830**
	2010	1,001	681	4,241	7,587	1,113	947	2,398	**17,968**
Total Active Registrations Submitted to MLTDB	**2008**	939	656	4,231	6,941	1,033	928	2,300	**17,028**
	2009	930	653	4,207	7,090	1,021	896	2,397	**17,194**
	2010	946	663	4,241	7,106	1,076	898	2,397	**17,327**
Primary Registrations§	**2008**	939	652	4,223	6,882	1,024	913	2,291	**16,924**
	2009	930	646	4,197	7,018	1,013	884	2,388	**17,076**
	2010	946	654	4,217	7,005	1,067	879	2,375	**17,143**
	% Change (2008 to 2010)	0.7%	0.3%	-0.1%	1.8%	4.2%	-3.7%	3.7%	**1.3%**
MLT Workforce	**2008**	939	641	4,223	6,552	1,006	913	2,215	**16,489**
	2009	921	638	4,197	6,765	1,001	864	2,223	**16,609**
	2010	936	642	4,213	6,819	1,009	874	2,251	**16,744**

		Unregulated Provinces/Territories‡							
	Year	N.L.	P.E.I.	B.C.	Y.T.	N.W.T.	Nun.	Subtotal	Overall
Total Registrations Submitted to MLTDB	**2008**	415	112	2,484	20	24	7	**3,062**	**20,771**
	2009	365	116	2,321	21	26	8	**2,857**	**20,687**
	2010	510	122	2,449	21	28	9	**3,139**	**21,107**
Total Active Registrations Submitted to MLTDB	**2008**	400	107	2,278	17	23	6	**2,831**	**19,859**
	2009	354	111	2,176	18	25	7	**2,691**	**19,885**
	2010	491	116	2,294	19	26	8	**2,954**	**20,281**
Primary Registrations§	**2008**	399	107	2,271	17	23	6	**2,823**	**19,747**
	2009	353	111	2,168	18	25	7	**2,682**	**19,758**
	2010	490	116	2,285	19	26	8	**2,944**	**20,087**
	% Change (2008 to 2010)	22.8%	8.4%	0.6%	11.8%	13.0%	33.3%	**4.3%**	**1.7%**
MLT Workforce	**2008**	393	103	2,271	17	21	6	**2,811**	**19,300**
	2009	347	107	2,126	18	24	7	**2,629**	**19,238**
	2010	482	112	2,245	19	24	8	**2,890**	**19,634**

Notes

‡ Data for unregulated provinces or territories represents voluntary registrations with the CSMLS.

§ Primary registrations included in this row: *employed in medical laboratory technology*; *employed in medical laboratory technology but on leave*; *employed outside of medical laboratory technology*; *retired*; *unemployed*; and *unknown*. Interjurisdictional duplicates are excluded.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Table 2: Medical Laboratory Technologist Workforce per 100,000 Population for Regulated Provinces, 2010

	Regulated Provinces							
Year	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	Overall
2010	99	85	53	52	82	84	60	**58**

Note
Population estimates were obtained from Statistics Canada, *Quarterly Demographic Estimates* (April to June 2011), <http://www.statcan.gc.ca/pub/91-002-x/2011002/t002-eng.htm>, catalogue no. 91-002-X.

Sources
Medical Laboratory Technologist Database, Canadian Institute for Health Information; Statistics Canada.

Information on Full-Time Equivalent Estimates

A single head count does not necessarily equal one full-time MLT. A full-time equivalent (FTE) MLT is calculated by dividing the total usual weekly hours worked (for all MLTs that have valid hours worked information in the database) by the number of MLTs multiplied by 37.5 hours (the assumed standard full-time weekly hours for most MLTs):

$$\text{Daily Average FTE} = \frac{\Sigma \text{Total Usual Weekly Hours}}{\text{Number of MLTs} \times 37.5 \text{ Hours}}$$

From the MLTDB, the daily average FTE was 0.92 for New Brunswick and 0.89 for Manitoba.

Multiplying the actual head counts by the daily average FTE, the total estimated number of FTE MLTs in 2010 was as follows:

New Brunswick: $642 \times 0.92 = 591$

Manitoba: $1{,}009 \times 0.89 = 898$

Compared with the actual head counts, the FTEs were smaller in the two example provinces in 2010.

Source
Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Chapter 2—Demographics

Potential Retirement of MLTs

Based on available data, an analysis was conducted to examine several groups of MLTs who may potentially plan to retire, based on their age and number of years working in medical laboratory technology. The term "potentially retiring MLTs" is defined as those MLTs who 1) were at least 55 and had worked more than 30 years in the profession; 2) were at least 60 and had worked more than 25 years in the profession; and 3) were 65 and older and still working in the profession.[1] The term "peer MLTs," used in Figure 2, is defined as MLTs who did not meet the above-noted criteria.

In Table 3, the data for the potentially retiring MLTs is highlighted in the dark cells. Data was available only for the selected provinces of Nova Scotia, New Brunswick, Quebec and Manitoba.

Table 3: Potentially Retiring MLTs by Age and Years Since Initial Canadian Employment in Medical Laboratory Technology, 2010

		Potentially Retiring MLTs										
		Age Category										
		<55		55–59		60–64		65+		Unknown Age		
		Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Total
Years Since Initial Employment	**<25**	4,197	61.7%	84	1.2%	32	0.5%	6	0.1%	0	0.0%	**4,319**
	25–29	719	10.6%	47	0.7%	18	0.3%	5	0.1%	0	0.0%	**789**
	30+	709	10.4%	640	9.4%	226	3.3%	53	0.8%	1	0.0%	**1,629**
	Unknown	49	0.7%	6	0.1%	6	0.1%	1	0.0%	1	0.0%	**63**
	Total	**5,674**	**83.4%**	**777**	**11.4%**	**282**	**4.1%**	**65**	**1.0%**	**2**	**0.0%**	**6,800**

Notes

Data reflects information for age and years since initial Canadian employment in medical laboratory technology for Nova Scotia, New Brunswick, Quebec and Manitoba.

Data for other jurisdictions (Newfoundland and Labrador, P.E.I., Ontario, Saskatchewan, Alberta, B.C., Yukon, the Northwest Territories and Nunavut) was not included due to a high percentage of *unknown* values for years since initial Canadian employment.

Source

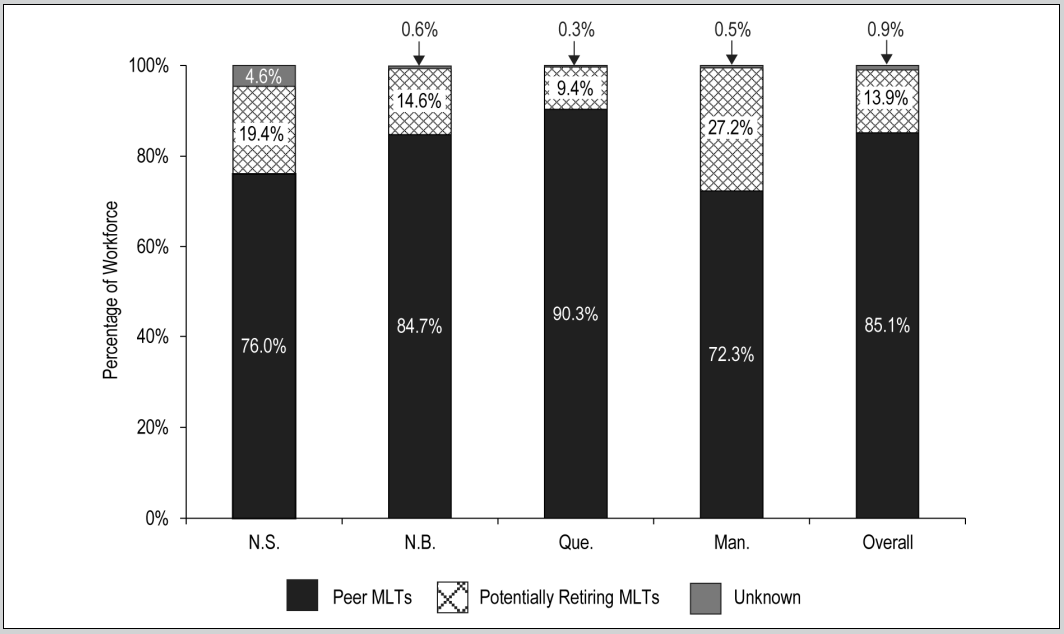
Medical Laboratory Technologist Database, Canadian Institute for Health Information.

(continued on next page)

Potential Retirement of MLTs (cont'd)

The figure below shows potentially retiring MLTs as a percentage of the total provincial MLT workforce, ranging from 9.4% in Quebec to 27.2% in Manitoba.

Figure 2: Potentially Retiring MLTs by Selected Provinces of Registration, 2010



Note

Data for other jurisdictions (Newfoundland and Labrador, P.E.I., Ontario, Saskatchewan, Alberta, B.C., Yukon, the Northwest Territories and Nunavut) was not included due to a high percentage of *unknown* values for years since initial Canadian employment.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

From 1997 to 2007, the Labour Force Survey revealed that the median retirement age for the general Canadian population was approximately 61,[2] this assisted with determining the criteria for defining the potentially retiring MLT workforce in the current analysis. With a predominantly female workforce in the MLT profession, the age of retirement may be younger, as women are more likely to retire at a younger age than men.[2]

Women retire earlier than men do, which could have a significant impact on female-dominated professions. The average age of women who retire is 60.6, while for men it is 61.4.

Employees in the public sector retire earlier on average—at 58.8, versus the average age of 62.4 in the private sector.

Source

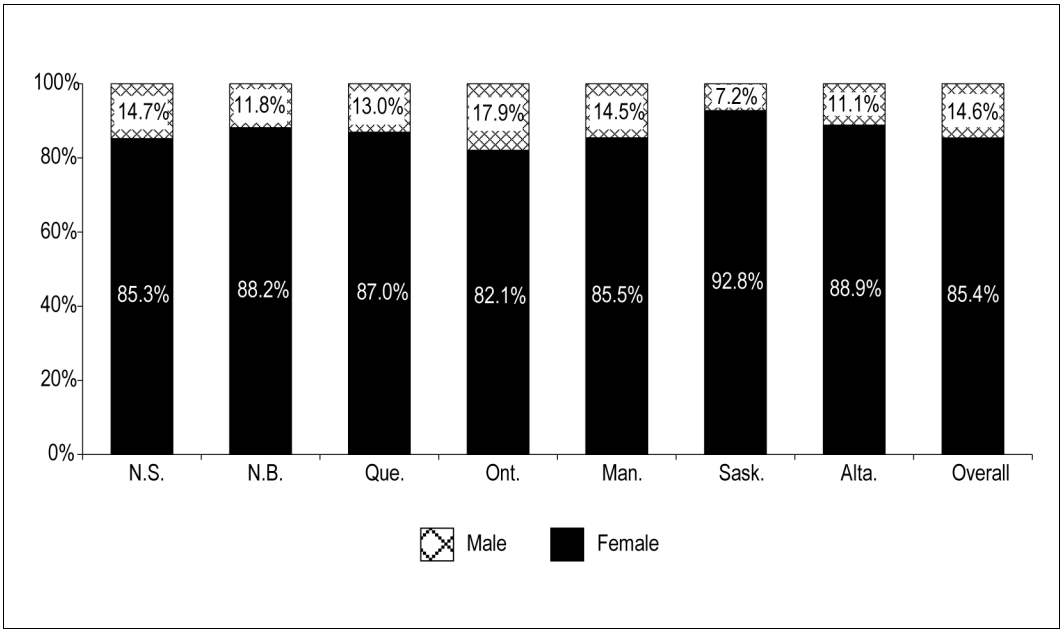
Statistics Canada, *The Canadian Labour Market at a Glance* (Ottawa, Ont.: Statistics Canada, 2008).

The youngest MLTs in the potentially retiring group (who are currently age 55 to 59) will be at least 65 in 10 years. Table 3 shows that those currently 60 and older represent only 1.7% of the 2010 working population. MLTs may decide to retire when they reach 65. If their intention to retire remains unchanged, it is possible that most MLTs who will be 65 in 10 years will then retire or already be retired. Whether the MLT workforce is adequate to meet Canadian population demands depends on whether the profession continues to recruit an adequate supply of new entrants, primarily new graduates in medical laboratory technology. The balance between potentially retiring and new MLTs entering the profession will continue to be an important issue that requires further information and analysis.

Gender

In 2010, the majority of MLTs were female, representing 85.4% of the workforce in the seven regulated provinces (Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan and Alberta). Ontario had the lowest percentage of female MLTs (82.1%) while Saskatchewan had the highest (92.8%).

Figure 3: Medical Laboratory Technologist Workforce by Gender, Selected Provinces of Registration, 2010



Note

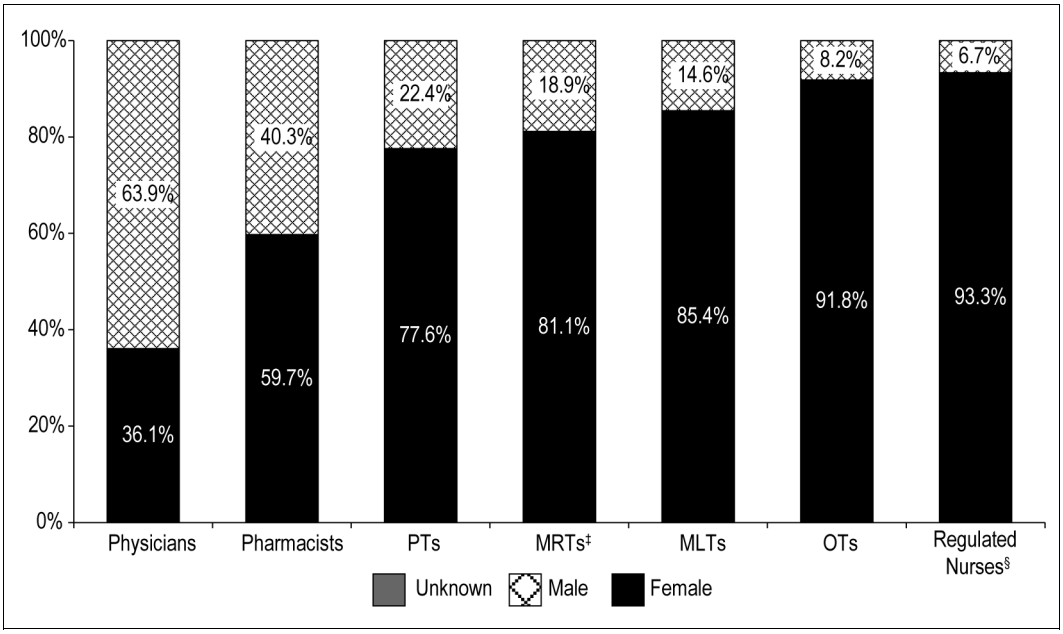
Data for other jurisdictions (Newfoundland and Labrador, P.E.I., B.C., Yukon, the Northwest Territories and Nunavut) was not included due to a high percentage of *unknown* values.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Females also dominated several other selected groups of professionals (see Figure 4), from 59.7% of pharmacists to 93.3% of regulated nurses. Physicians were the only selected group of professionals that was dominated by men. Female doctors comprised approximately one-third of the physician workforce in 2010.

Figure 4: Health Professionals by Gender, 2010



Notes

‡ Statistics for MRTs are preliminary, pending the release of CIHI's 2010 MRT annual report.

§ Statistics for regulated nurses were based on 2009 data.

Information for MLTs includes data from Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan and Alberta. Data for other jurisdictions (Newfoundland and Labrador, P.E.I., B.C., Yukon, the Northwest Territories and Nunavut) was not included due to a high percentage of *unknown* values.

For the other professions listed, please see the Methodological Notes in their respective annual reports for comprehensive information regarding collection and comparability of CIHI data, at www.cihi.ca.

Sources

Medical Laboratory Technologist Database, Medical Radiation Technologist Database, Occupational Therapist Database, Physiotherapist Database, Pharmacist Database, Nursing Database and Scott's Medical Database, Canadian Institute for Health Information.

Age

The five-year age group with the largest percentage of MLTs was the 50-to-54 age category, which represented 17.4% of the total MLT workforce for the regulated provinces in 2010. Across the regulated provinces, Quebec had the highest percentage of MLTs who were younger than 25 (9.1%), while Manitoba had the highest percentage of MLTs who were older than 60 (13.5%).

In 2010, Quebec had the youngest workforce (average age of 39.7), while Ontario had the oldest (average age of 47.7).

Table 4: Medical Laboratory Technologist Workforce by Five-Year Age Groups and Average Age, Selected Provinces of Registration, 2010

Five-Year Age Groups	N.S.		N.B.		Que.		Ont.		Man.		Sask.		Alta.		Overall	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
<25	15	1.6%	18	2.8%	382	9.1%	59	0.9%	21	2.1%	14	1.6%	39	1.7%	**548**	**3.3%**
25–29	77	8.2%	59	9.2%	681	16.2%	329	4.8%	64	6.3%	54	6.2%	198	8.8%	**1,462**	**8.7%**
30–34	61	6.5%	69	10.7%	667	15.8%	432	6.3%	65	6.4%	51	5.8%	187	8.3%	**1,532**	**9.1%**
35–39	91	9.7%	62	9.7%	396	9.4%	637	9.3%	87	8.6%	63	7.2%	250	11.1%	**1,586**	**9.5%**
40–44	111	11.9%	103	16.0%	490	11.6%	868	12.7%	123	12.2%	99	11.3%	313	13.9%	**2,107**	**12.6%**
45–49	190	20.3%	117	18.2%	517	12.3%	1,265	18.6%	157	15.6%	178	20.4%	394	17.5%	**2,818**	**16.8%**
50–54	181	19.3%	114	17.8%	555	13.2%	1,310	19.2%	201	19.9%	182	20.8%	370	16.4%	**2,913**	**17.4%**
55–59	151	16.1%	77	12.0%	394	9.4%	1,183	17.3%	155	15.4%	140	16.0%	323	14.3%	**2,423**	**14.5%**
60–64	51	5.4%	14	2.2%	106	2.5%	566	8.3%	111	11.0%	57	6.5%	154	6.8%	**1,059**	**6.3%**
65+	8	0.9%	7	1.1%	25	0.6%	170	2.5%	25	2.5%	12	1.4%	22	1.0%	**269**	**1.6%**
Unknown	0	0.0%	2	0.3%	0	0.0%	0	0.0%	0	0.0%	24	2.7%	1	0.0%	**27**	**0.2%**
Total	**936**		**642**		**4,213**		**6,819**		**1,009**		**874**		**2,251**		**16,744**	
Average Age		**46.0**		**43.7**		**39.7**		**47.7**		**47.5**		**47.1**		**45.2**		**45.1**

Note

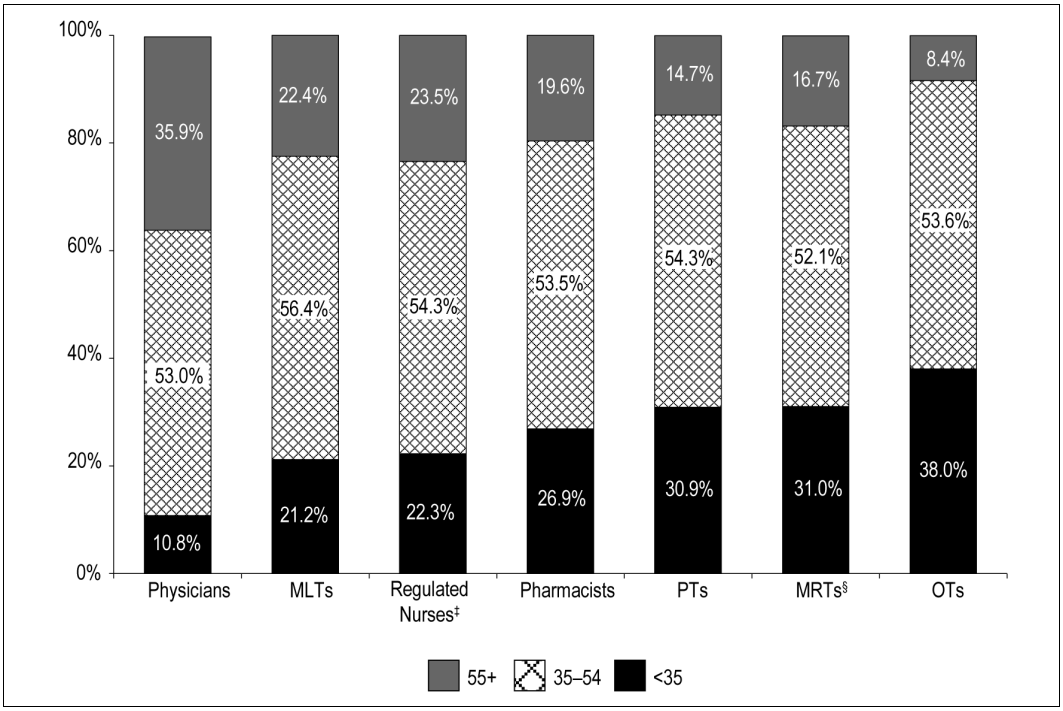
Data for other jurisdictions (Newfoundland and Labrador, P.E.I., B.C., Yukon, the Northwest Territories and Nunavut) was not included due to a high percentage of *unknown* values.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Compared with six other selected groups of health professionals, MLTs had the second-lowest proportion (21.2%) of members who were younger than 35, higher only than the physician workforce in 2010. The MLT workforce also had the third-highest proportion of members who were 55 and older, after physicians and regulated nurses.

Figure 5: Health Professionals by Age Group, 2010



Notes

‡ Statistics for regulated nurses were based on 2009 data.

§ Statistics for MRTs are preliminary, pending the release of CIHI's 2010 MRT annual report.

Information for MLTs includes data from Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan and Alberta.

Data for other jurisdictions (Newfoundland and Labrador, P.E.I., B.C., Yukon, the Northwest Territories and Nunavut) was not included due to a high percentage of *unknown* values.

For the other professions listed, please see the Methodological Notes in their respective annual reports for comprehensive information regarding collection and comparability of CIHI data, at www.cihi.ca.

Sources

Medical Laboratory Technologist Database, Medical Radiation Technologist Database, Occupational Therapist Database, Physiotherapist Database, Pharmacist Database, Nursing Database, Scott's Medical Database and Health Personnel Database, Canadian Institute for Health Information.

Chapter 3—Education and Certification

New Graduates

Educational programs for medical laboratory technology are accredited by the Conjoint Accreditation Services of the Canadian Medical Association.[3] Since the 1990s, the program areas have included the subjects of general medical laboratory technology, diagnostic cytology and clinical genetics.[4] Some programs also require a period of supervised training or clinical education in a workplace setting.[4]

Data for 2008 and 2009 shows that, each year, more than 600 students graduated from more than 20 schools with medical laboratory technology programs. More schools have recently begun offering medical laboratory technology programs. For example, in 2008, the University of Ontario Institute of Technology was accredited for medical laboratory technology programs. Table 5 shows the number of students that graduated from accredited medical laboratory technology programs in 2008 and 2009 by province.

Table 5: Number of Graduates of Medical Laboratory Technology Programs by Province, 2008 and 2009

Province of Graduation	2008	2009
Newfoundland and Labrador	22	22
Nova Scotia	20	19
New Brunswick	29	42
Quebec	244	250
Ontario	156	161
Manitoba	29	40
Saskatchewan	14	14
Alberta	75	71
British Columbia	53	55
Total	**642**	**674**

Note

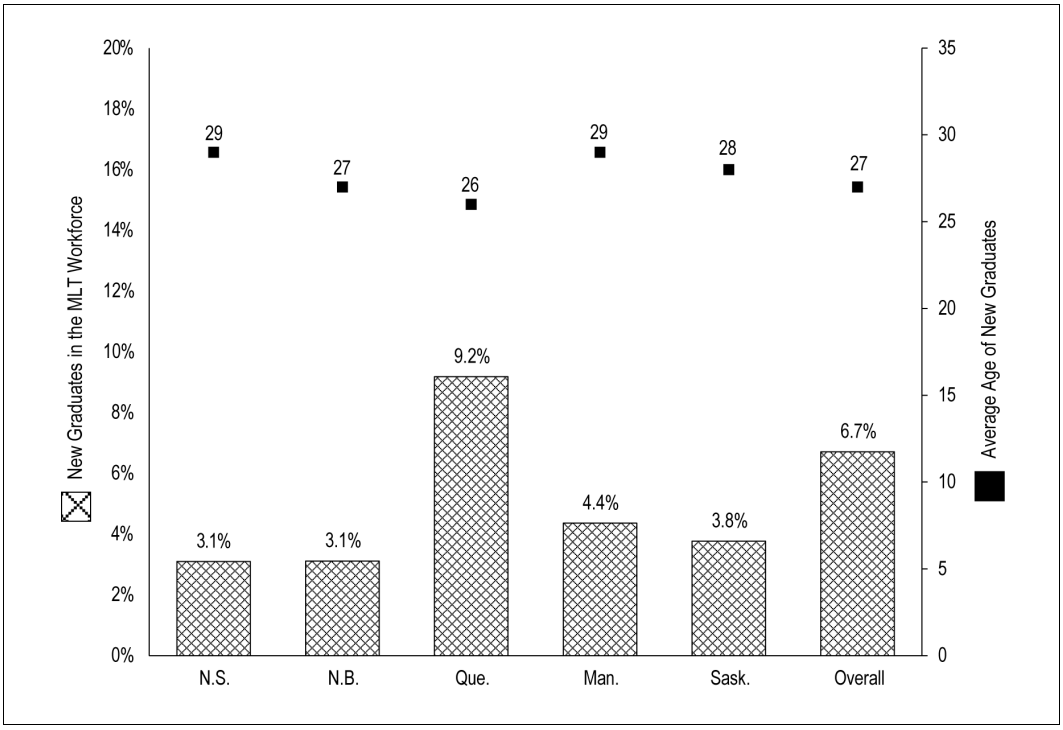
Totals do not include schools for which data was unavailable.

Sources

Canadian Society for Medical Laboratory Science; Health Personnel Database, Canadian Institute for Health Information.

Graduate information is included in the MLTDB when new graduates register with a regulatory body or the CSMLS. Figure 6 shows that new graduates accounted for a small percentage of the workforce in each province in 2010. Figure 6 also shows the average age of new graduates who completed a medical laboratory technology program and entered the workforce within the past two years. Combining data for selected provinces, new graduates were on average 27 years old in 2010.

Figure 6: New Graduates in the MLT Workforce by Selected Province of Registration and Average Age, 2010



Notes

New graduates were defined as those registrants who graduated within the past two years from an institution offering a medical laboratory technology program.

Data for other jurisdictions (Newfoundland and Labrador, P.E.I., Ontario, Alberta, B.C., Yukon, the Northwest Territories and Nunavut) was not included due to a high percentage of *unknown* values.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Basic Education for Entry to the Workforce

Students who wish to become an MLT may apply for enrolment in a four-year degree program, either in science or specialized medical laboratory science, or they may choose to enrol in a two- or three-year diploma program in medical laboratory technology.[5] Although these accredited programs across Canada offer different levels of education, a diploma was reported as the most common level of education (versus baccalaureate, master's and doctorate) to prepare students to enter the MLT workforce.

Across the seven regulated provinces, 90.6% of MLTs had a diploma for their basic level of education. Ontario and Saskatchewan had the highest percentages of members with baccalaureate and higher degrees, at 14.0% and 7.8%, respectively. These results can be explained in part by the fact that some institutions offer joint degree/diploma programs, as well as by the fact that some MLTs in these provinces obtained degrees outside of Canada.

Table 6: MLT Workforce by Level of Basic Education and Province of Registration, 2010

Province of Registration	Diploma		Baccalaureate and Higher-Level Degrees		Unknown Level of Basic Education		Total
	Count	Percentage	Count	Percentage	Count	Percentage	
N.S.	927	99.0%	6	0.6%	3	0.3%	**936**
N.B.	642	100.0%	0	0.0%	0	0.0%	**642**
Que.	4,036	95.8%	0	0.0%	177	4.2%	**4,213**
Ont.	5,673	83.2%	950	14.0%	196	2.9%	**6,819**
Man.	935	92.7%	70	6.9%	4	0.4%	**1,009**
Sask.	733	92.1%	62	7.8%	1	0.1%	**796**
Alta.	2,147	95.4%	0	0.0%	104	4.6%	**2,251**
Overall	**15,093**	**90.6%**	**1,088**	**6.5%**	**485**	**2.9%**	**16,666**

Notes

Data for other jurisdictions (Newfoundland and Labrador, P.E.I., B.C., Yukon, the Northwest Territories and Nunavut) was not included due to a high percentage of *unknown* values.

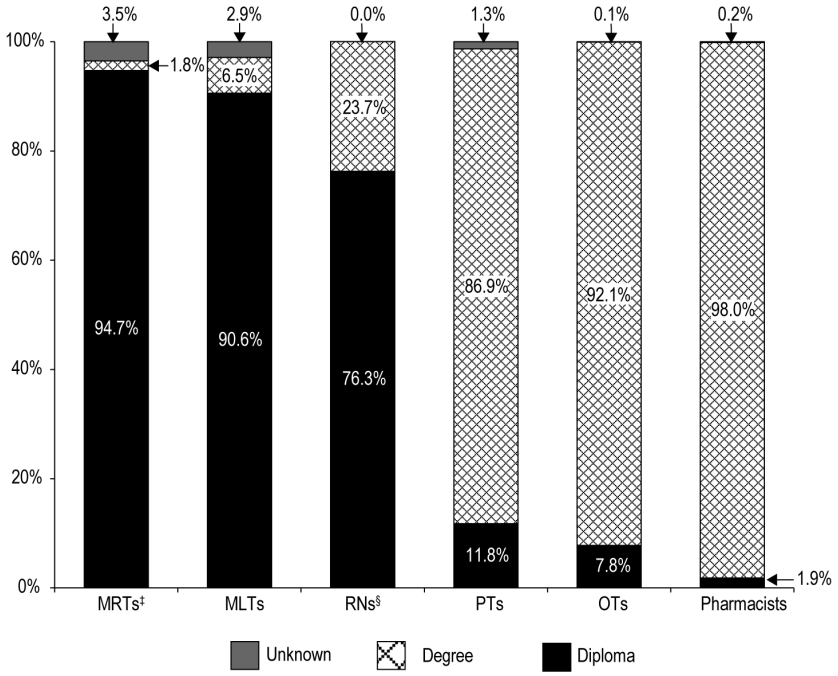
For Saskatchewan, the total education count does not match the overall workforce counts due to data adjustments. See the Methodological Notes for further details.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Differences in educational requirements for entry to practice are shown for selected health care professionals. As of 2010, physiotherapists require a master's degree to work in the profession. The educational requirement for occupational therapists is transitioning to the master's level. The required entry-level education for pharmacists is baccalaureate, although many of them appear to be seeking higher degrees. For registered nurses (RNs), most provinces require a baccalaureate degree for entry to practice, and provinces that have not mandated this requirement are moving in this direction.

Figure 7: Level of Basic Education, Selected Health Care Professionals, 2010



Notes

‡ Statistics for MRTs are preliminary, pending the release of CIHI's 2010 MRT annual report.

§ Statistics for registered nurses (RNs) were based on 2009 data.

Information for MLTs includes data from Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan and Alberta. Data for other jurisdictions (Newfoundland and Labrador, P.E.I., B.C., Yukon, the Northwest Territories and Nunavut) was not included due to a high percentage of *unknown* values.

For the other professions listed, please see the Methodological Notes in their respective annual reports for comprehensive information regarding collection and comparability of CIHI data, at www.cihi.ca.

Sources

Medical Laboratory Technologist Database, Medical Radiation Technologist Database, Occupational Therapist Database, Physiotherapist Database, Pharmacist Database and Nursing Database, Canadian Institute for Health Information.

Clinical Education Programs

Clinical experience may be offered as part of the educational requirements of medical laboratory technology programs. Students enrolled in medical laboratory programs have the opportunity to work in a discipline of laboratory technology, which will allow them to gain professional competency.[6]

All graduates included in Table 5 completed clinical education as part of their curriculum. Students can be assigned to a rotation in specific disciplines in medical laboratory technology and be supervised within a hospital, clinic or laboratory setting.

Some MLTs may provide clinical education and/or preceptor (CEP) activities to students in their workplace. In 2010, 34.9% of the MLTs in Manitoba and 46.7% of the MLTs in Alberta were involved in CEP activities.

Certification

Certification Examinations

After graduating from an accredited medical laboratory technology educational program, students are eligible to write a national certification examination offered by the CSMLS. The CSMLS certification is required in all of the regulated provinces except Quebec for MLTs to practise in the discipline for which they are certified; it is also required by many employers as a condition of employment in the unregulated jurisdictions. Working as an MLT in Quebec does not require CSMLS certification,[7] although some graduates in that province decide to take the CSMLS examination. Generally, in Quebec, to obtain a permit to practise in medical laboratory technology, applicants must hold a diploma in technologie d'analyses biomédicales from an institution that is recognized by the Ministry of Education of Quebec. Also, in accordance with the *Professional Code of Quebec* and the *Charter of the French Language*, the candidate must have knowledge of French to practise in the profession.[8]

Since 2005, more than 3,000 MLT candidates have passed the CSMLS exam for certification in general medical laboratory technology.

The overall number of candidates who passed the general certification exam is as follows:

- 460 in 2005
- 531 in 2006
- 586 in 2007
- 557 in 2008
- 554 in 2009
- 607 in 2010

Source
Canadian Society for Medical Laboratory Science.

Table 7 shows the number of candidates who obtained the CSMLS general certification by jurisdiction of residence, with an additional small number of candidates who were foreign-trained students deemed eligible to write the CSMLS certification exam or who lived outside of Canada. Most of the candidates were certified in the general area for medical laboratory technology; this pattern was consistent across years. Certification in general medical laboratory technology has been most popular for candidates taking the CSMLS examination.

Table 7: Number of CSMLS Certified Medical Laboratory Technologists by Discipline, 2010

Jurisdiction	General Medical Laboratory Technology	Diagnostic Cytology	Clinical Genetics
N.L.	19	2	2
P.E.I.	7	0	0
N.S.	22	8	1
N.B.	14	1	0
Que.	63	5	0
Ont.	218	13	9
Man.	49	1	1
Sask.	19	2	0
Alta.	78	5	3
B.C.	113	3	4
Territories‡	1	0	0
Outside of Canada	4	0	0
Total	**607**	**40**	**20**

Note

‡ Territories include Yukon, the Northwest Territories and Nunavut.

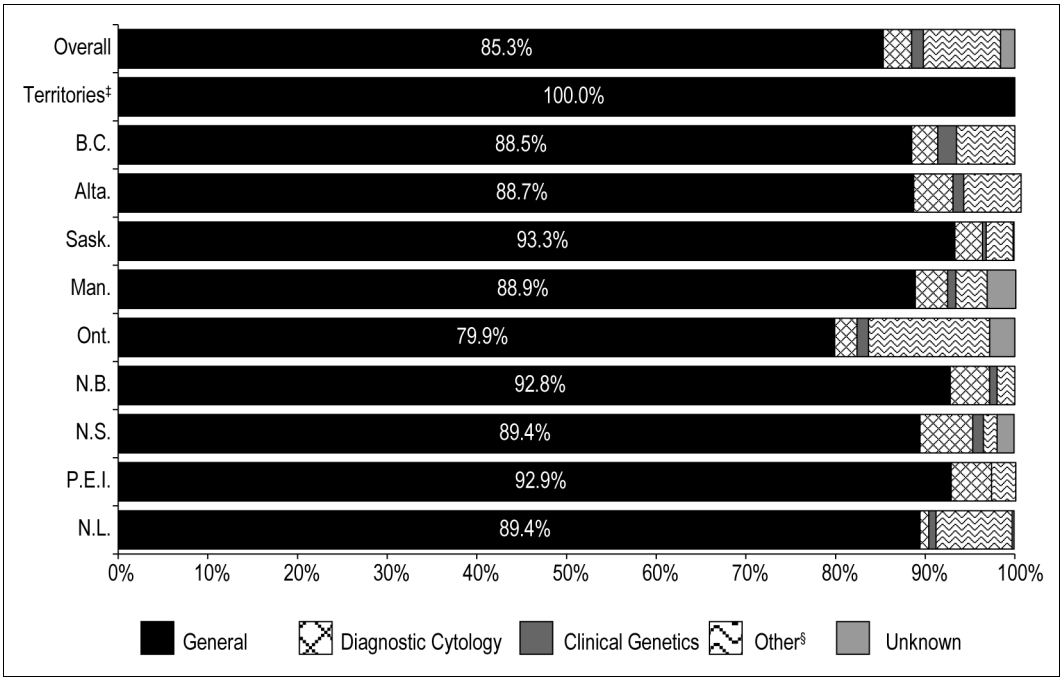
Source

Canadian Society for Medical Laboratory Science.

Distribution of Certification Disciplines for MLTs

Currently, the most common disciplines for MLT certification are general medical laboratory technology, clinical genetics and diagnostic cytology. Since the 1990s, the CSMLS has offered exams in these three disciplines only. Changes in examination requirements contribute to the distribution of certifications, as do upgrades that MLTs may make to their educational background. Data from the MLTDB confirms that general certification is the most common certification discipline, ranging from 79.9% in Ontario to 100% in the territories.

Figure 8: Initial Certification Disciplines for Selected Jurisdictions, 2010



Notes

‡ Territories include Yukon, the Northwest Territories and Nunavut.

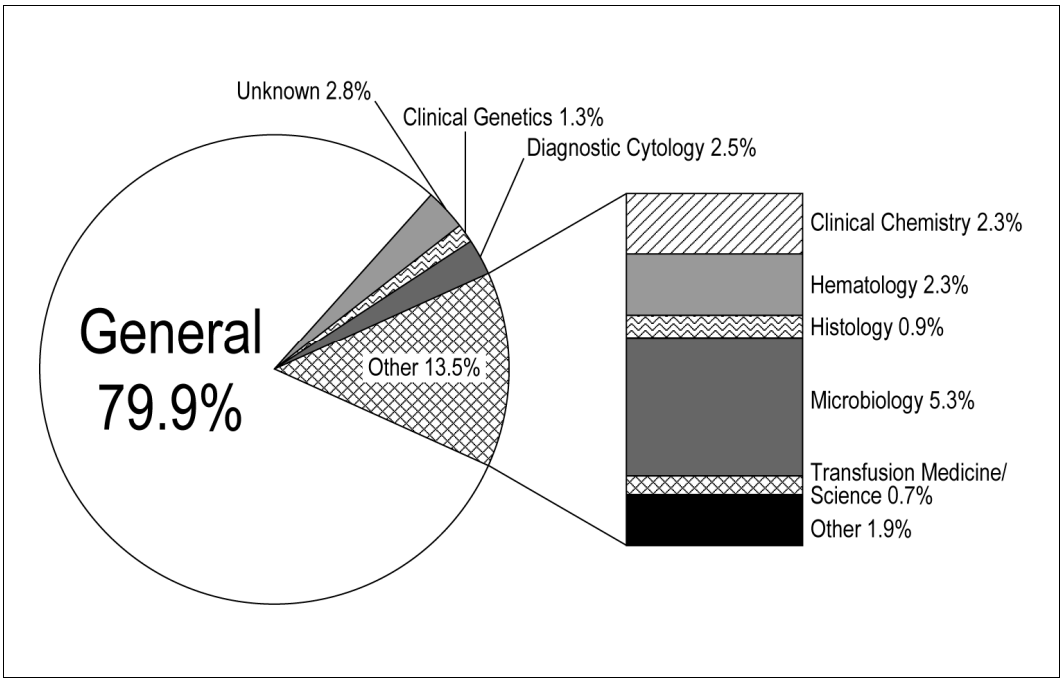
§ The *other* category includes clinical chemistry, hematology, histology, microbiology, transfusion medicine/ science and other.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Ontario had a unique distribution of initial certification disciplines that had a significant impact on the distribution pattern for all selected jurisdictions combined. In Ontario, many MLTs hold certifications in older disciplines that were obtained prior to the 1990s, when the CSMLS began to offer examinations in only general medical laboratory technology, clinical genetics and diagnostic cytology. These older disciplines were categorized as “other disciplines” (13.5%) in Figure 8. To illustrate the breakdown of this category for Ontario, see Figure 9.

Figure 9: Initial Certification Disciplines for MLTs in Ontario, 2010



Source
Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Advanced Certification

MLTs can obtain certification directly in medical laboratory technology but also as advanced registered technologists (ARTs). This is a separate program offered by the CSMLS for members wishing to obtain advanced certification. Since January 1, 2011, the CSMLS has begun phasing out this program due to low enrolment. ART candidates must complete the program by December 31, 2014. Since 2007, only seven members have obtained ART certification.[9]

Data from the MLTDB supports evidence of low enrolment in the ART program. MLTs with ART certification represent a small percentage of the MLT workforce and are generally older than those without ART certification.

Advanced Registered Technologists

Combining available 2010 data from Nova Scotia, Manitoba and Saskatchewan

- 2.7% of the workforce held ART certification;
- The average age for members with ART certification was 55, compared with the average age for all MLTs (47); and
- The youngest ART was 44, whereas the youngest MLT was 20.

Source
Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Grandfathered MLTs

Members may be grandfathered into the profession of medical laboratory technology. Grandfathering occurs in two situations: when individuals did not receive formal education but obtained equivalent training at the workplace to practise as an MLT; and when individuals who were internationally educated were not required to be certified in Canada because their MLT certification from abroad was considered an equivalent qualification. This was more common in the early years, when many jurisdictions had not yet regulated the profession. Based on data from the MLTDB, in 2010 there were 30 registered MLTs across all jurisdictions who reported having been grandfathered into the profession.

Internationally Educated MLTs

For MLTs who obtained their education outside of Canada, the CSMLS has established a prior learning assessment process that determines a member's eligibility to write the CSMLS national certification examination. The prior learning assessment process evaluates academic credentials, experiential learning, professional development and work history to determine the person's equivalency to the national competency profile for working in Canada.[10]

In 2010 in Ontario, 14% of the MLT workforce obtained their level of basic education in medical laboratory technology outside of Canada:

- Philippines: 5.4%
- India: 2.2%
- United Kingdom: 0.9%
- Hong Kong: 0.8%
- United States: 0.8%
- Other countries: 3.9%

Source
Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Following the prior learning assessment, candidates may be offered the opportunity to write the CSMLS examination. Candidates assessed as having non-equivalent training are required to follow a learning plan to complete coursework to address these gaps prior to writing the certification exam.

Bridging Education

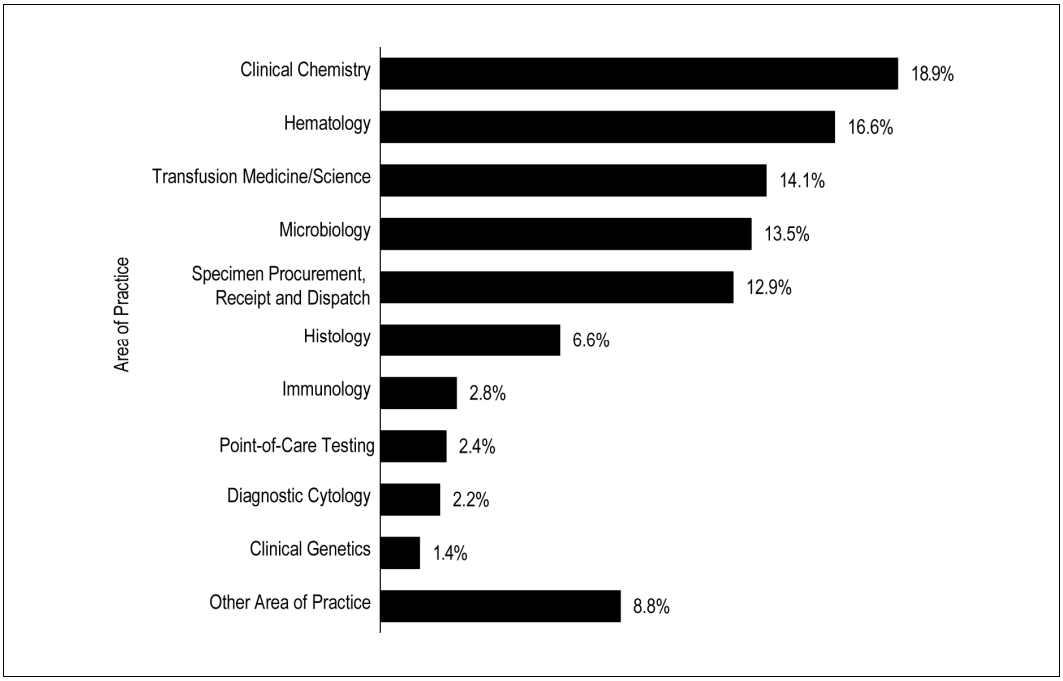
One way for internationally educated MLTs to meet the requirements for their prior learning assessment is to complete a bridging program. Bridging programs are specifically designed to help MLTs educated in other countries meet the educational needs required in Canada.[10] Bridging programs offer internationally educated MLTs exposure to the Canadian health care system and, in most cases, an opportunity to gain supervised work experience in Canada through a clinical placement at a medical laboratory site.[11] This experience is highly valued by employers and can sometimes be the deciding factor for an employer who is considering hiring an internationally educated MLT.[12] According to the MLTDB, in 2010, 18 MLTs in Manitoba, or 1.8% of the provincial MLT workforce, reported completing a bridging program in medical laboratory technology.

Chapter 4—Employment

Area of Practice

As indicated in Chapter 3, MLTs can practise in the discipline in which they are certified. In 2010, more than three-quarters of MLTs practised at their primary employment in the areas of clinical chemistry (18.9%), hematology (16.6%), transfusion medicine/science (14.1%), microbiology (13.5%) and specimen procurement, receipt and dispatch (12.9%).

Figure 10: MLT Workforce by Area of Practice for Primary Employment, Selected Provinces of Registration, 2010



Notes
Includes data from Nova Scotia, New Brunswick, Quebec, Ontario and Alberta.
Data for other jurisdictions (Newfoundland and Labrador, P.E.I., Saskatchewan, Manitoba, B.C. and the territories) was not included due to a high percentage of *unknown* values.
Source
Medical Laboratory Technologist Database, Canadian Institute for Health Information.

In 2010, for four selected provinces, the majority (80.9%) of MLTs provided diagnostic and therapeutic laboratory services directly to patients at their primary employment. Others worked in the areas of administration, quality management, medical laboratory–related teaching, research and other areas.

- Nova Scotia: 90.5%
- New Brunswick: 77.7%
- Ontario: 79.2%
- Manitoba: 85.9%

Source
Medical Laboratory Technologist Database, Canadian Institute for Health Information.

The distribution pattern of the MLT workforce across areas of practice may be different from one province or territory to another. Nevertheless, across all selected provinces, the most common area of practice and the area in which the highest percentage of MLTs worked was clinical chemistry.

Table 8: Area of Practice in Primary Employment for MLT Workforce, by Selected Provinces of Registration, 2010

	N.S.		N.B.		Que.§		Ont.		Alta.**	
Area of Practice‡	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
Clinical Chemistry	430	19.1%	253	37.9%	1,841	20.8%	1,890	16.5%	766	18.2%
Clinical Genetics	1†	†	*	*	22	0.2%	298	2.6%	51	1.2%
Diagnostic Cytology	50	2.2%	31	4.6%	113	1.3%	300	2.6%	100	2.4%
Hematology	424	18.8%	107	16.0%	1,681	19.0%	1,614	14.1%	721	17.2%
Histology	93	4.1%	42	6.3%	583	6.6%	870	7.6%	210	5.0%
Immunology	11†	†	*	*	–	–	520	4.5%	121	2.9%
Microbiology	209	9.3%	99	14.8%	1,300	14.7%	1,635	14.3%	468	11.1%
Specimen Procurement, Receipt and Dispatch	326	14.5%	8	1.2%	1,715	19.4%	1,085	9.5%	397	9.4%
Transfusion Medicine/Science	371	16.5%	62	9.3%	1,606	18.1%	1,318	11.5%	505	12.0%
Point-of-Care Testing	11†	†	*	*	–	–	335	2.9%	207	4.9%
Other Area of Practice	100	4.4%	58	8.7%	–	–	1,588	13.9%	656	15.6%
Total Number of Area of Practice	**2,253**		**667**		**8,861**		**11,453**		**4,202**	

Notes

* Value suppressed in accordance with CIHI's Privacy Policy; cell value is from 1 to 4.

† Value suppressed to ensure confidentiality.

‡ The sum of values for Area of Practice does not equal the provincial workforce total, as a registrant can have more than one Area of Practice or not have an Area of Practice for direct patient care. Refer to Area of Practice in the Key Concepts and Definitions section of the Methodological Notes for further details.

§ MLTs in Quebec who perform clinical chemistry, a part of medical biology, did not have to register with the Ordre professionnel des technologistes médicaux du Québec, which provided data to CIHI. As a result, the number of clinical chemistry–area MLTs might be under-reported for Quebec. Refer to the Under-Coverage section of the Methodological Notes for further details.

** In Alberta, 60 registrants (2.7%) were excluded from the 2010 statistics for the employment data elements due to non-response. Refer to the Data Adjustment Section of the Methodological Notes for further details.

– Data was not applicable, not collected or does not meet data selection criteria.

Newfoundland and Labrador, P.E.I., Manitoba, Saskatchewan, B.C. and the territories were not included due to a high percentage of *unknown* values.

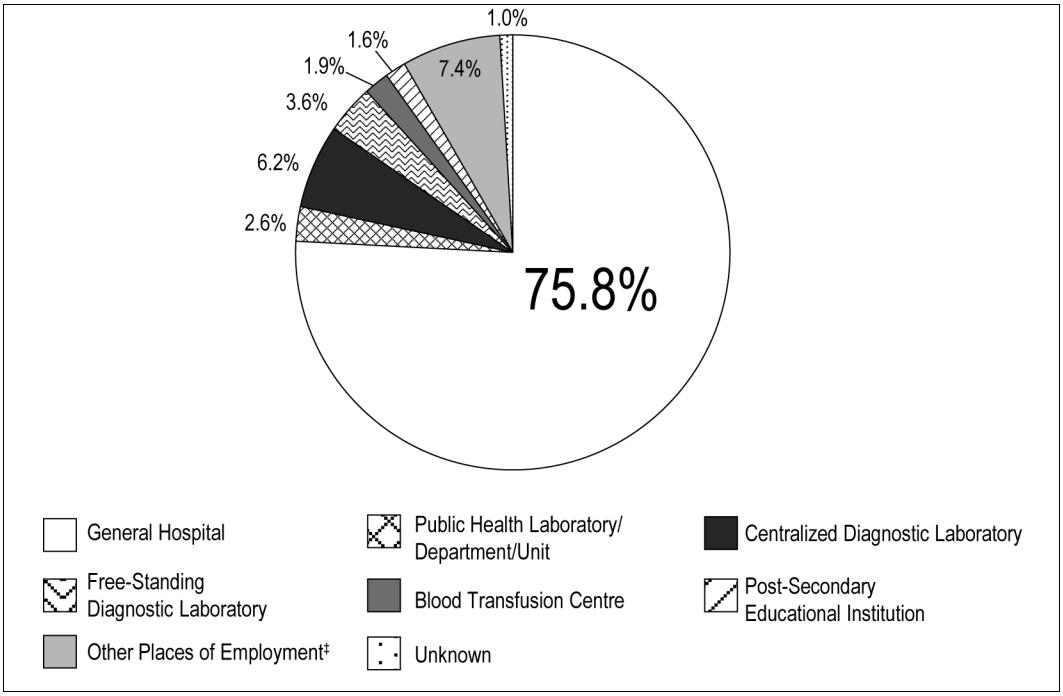
Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Place of Employment

Approximately three-quarters (75.8%) of MLTs worked in hospital-based laboratories, as shown in Figure 11. Others worked in centralized or free-standing diagnostic laboratories, public health laboratories, educational facilities, blood transfusion centres, specimen collection centres, residential care facilities or other work settings.

Figure 11: Place of Primary Employment of MLT Workforce, Selected Provinces of Registration, 2010



Notes

‡ *Other places of employment* includes residential care facility, physician's office/other professional practice office, community health centre, specimen collection centre, other laboratory facility, association/government/para-governmental, industry, manufacturing and commercial, and other.

Includes data from Nova Scotia, New Brunswick, Quebec, Manitoba and Alberta.

Data for other jurisdictions (Newfoundland and Labrador, P.E.I., Ontario, Saskatchewan, B.C. and the territories) was not included due to a high percentage of *unknown* values.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

In 2010, the majority of MLTs worked at a single employment site for their primary employment, except for those in Alberta.

- Nova Scotia: 94.3%
- Ontario: 81.1%
- Manitoba: 91.5%
- Alberta: 29.0%

The difference between Alberta and the other three provinces might be due to the different health care infrastructures in these provinces. Alberta has a more decentralized setting than Nova Scotia, Ontario and Manitoba.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

At the provincial level, each province has its own unique distribution pattern. The proportion of MLTs working in general hospitals in Nova Scotia, New Brunswick and Quebec was approximately 90%, while it was 60.3% in Manitoba and 49.6% in Alberta. These differences may be explained by different organizational structures and unique ways of delivering laboratory services from one province to another.

Table 9: Number and Percentage of MLT Workforce, Place of Primary Employment, by Selected Provinces of Registration, 2010

Place of Primary Employment	N.S.		N.B.		Que.		Man.		Alta.‡		Overall	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
General Hospital	816	87.2%	588	91.6%	3,718	88.3%	608	60.3%	1,087	49.6%	**6,817**	**75.8%**
Public Health Laboratory/ Department/Unit	0	0.0%	0	0.0%	20	0.5%	79	7.8%	132	6.0%	**231**	**2.6%**
Centralized Diagnostic Laboratory	0	0.0%	0	0.0%	0	0.0%	100	9.9%	460	21.0%	**560**	**6.2%**
Free-Standing Diagnostic Laboratory	0	0.0%	0	0.0%	203	4.8%	38	3.8%	87	4.0%	**328**	**3.6%**
Blood Transfusion Centre	38	4.1%	0	0.0%	0	0.0%	64	6.3%	66	3.0%	**168**	**1.9%**
Post-Secondary Educational Institution	12	1.3%	12	1.9%	47	1.1%	14	1.4%	55	2.5%	**140**	**1.6%**
Other Places of Employment§	70	7.5%	42	6.5%	216	5.1%	104	10.3%	229	10.5%	**661**	**7.4%**
Unknown	0	0.0%	0	0.0%	9	0.2%	2	0.2%	75	3.4%	**86**	**1.0%**
Total	**936**		**642**		**4,213**		**1,009**		**2,191**		**8,991**	

Notes

‡ In Alberta, 60 registrants (2.7%) were excluded from the 2010 statistics for the employment data elements due to non-response. Refer to the Data Adjustment Section of the Methodological Notes for further details.

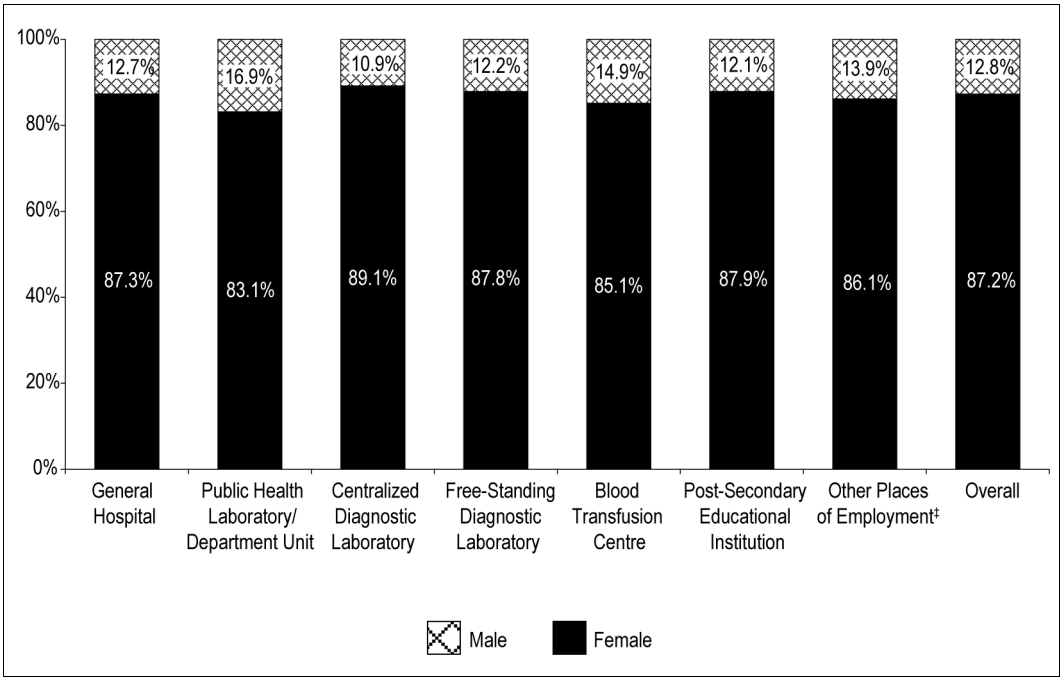
§ *Other places of employment* includes residential care facility, physician's office/other professional practice office, community health centre, specimen collection centre, other laboratory facility, association/government/para-governmental, industry, manufacturing and commercial, and other.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Females dominated the MLT workforce in all types of work settings. Nevertheless, gender distribution differed slightly from one setting to another. Female MLTs accounted for 89.1% in centralized diagnostic laboratories, the highest proportion across all MLT workplace settings. In general hospitals, 87.3% of MLTs were female, while 83.1% were female in organizations associated with public health (the lowest proportion of female MLTs).

Figure 12: MLT Workforce by Place of Primary Employment, by Gender, Selected Provinces of Registration, 2010



Notes

‡ *Other places of employment* includes residential care facility, physician's office/other professional practice office, community health centre, specimen collection centre, other laboratory facility, association/government/para-governmental, industry, manufacturing and commercial, and other.

Includes data from Nova Scotia, New Brunswick, Quebec, Manitoba and Alberta.

Data for other jurisdictions (Newfoundland and Labrador, P.E.I., Ontario, Saskatchewan, B.C. and the territories) was not included due to a high percentage of *unknown* values.

Registrants with *unknown* place of primary employment were excluded (86, 1.0%).

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Overall, in 2010, more than half (55.7%) of the MLT workforce was age 40 to 59. Among the identified work settings, general hospitals (19.3%) and free-standing diagnostic laboratories (15.5%) had more MLTs who were younger than 30 than in other work settings.

Table 10: MLT Workforce by Place of Primary Employment by Ten-Year Age Groups, Selected Provinces of Registration, 2010

Place of Primary Employment	General Hospital		Public Health Laboratory/ Department/Unit		Centralized Diagnostic Laboratory		Free-Standing Diagnostic Laboratory		Blood Transfusion Centre		Post-Secondary Educational Institution		Other Places of Employment‡		Unknown Place of Employment		Overall	
10-Year Age Groups	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
20–29	1,314	19.3%	27	11.7%	32	5.7%	51	15.5%	11	6.5%	8	5.7%	72	10.9%	21	24.4%	1,536	17.1%
30–39	1,447	21.2%	45	19.5%	109	19.5%	95	29.0%	41	24.4%	29	20.7%	132	20.0%	23	26.7%	1,921	21.4%
40–49	1,864	27.3%	61	26.4%	155	27.7%	86	26.2%	65	38.7%	51	36.4%	194	29.3%	25	29.1%	2,501	27.8%
50–59	1,879	27.6%	77	33.3%	201	35.9%	65	19.8%	43	25.6%	38	27.1%	194	29.3%	12	14.0%	2,509	27.9%
60+	311	4.6%	21	9.1%	63	11.3%	31	9.5%	8	4.8%	14	10.0%	68	10.3%	5	5.8%	521	5.8%
Unknown Age	2	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.2%	0	0.0%	3	0.0%
Total	**6,817**		**231**		**560**		**328**		**168**		**140**		**661**		**86**		**8,991**	

Notes

‡ *Other places of employment* includes residential care facility, physician's office/other professional practice office, community health centre, specimen collection centre, other laboratory facility, association/government/para-governmental, industry, manufacturing and commercial, and other.

Includes data from Nova Scotia, New Brunswick, Quebec, Manitoba and Alberta.

Data for other jurisdictions (Newfoundland and Labrador, P.E.I., Ontario, Saskatchewan, B.C. and the territories) was not included due to a high percentage of *unknown* values.

Source

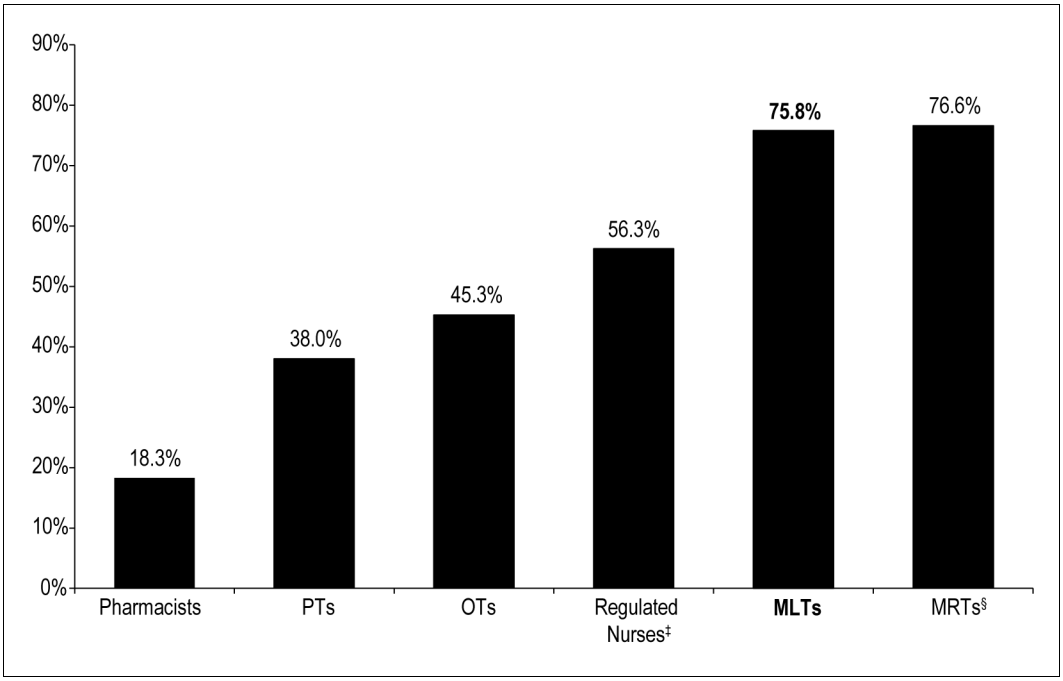
Medical Laboratory Technologist Database, Canadian Institute for Health Information.

In Hospital

Cross-Profession Comparison

Compared with other groups of health professionals, such as pharmacists, physiotherapists, occupational therapists and nurses, a much higher proportion of both the MLT and MRT workforces was employed in hospitals (approximately three-quarters of the total workforce).

Figure 13: Selected Health Professionals Working in Hospitals at Primary Employment, 2010



Notes

‡ Statistics for regulated nurses were based on 2009 data.

§ Statistics for MRTs are preliminary, pending the release of CIHI's 2010 MRT annual report.

Information for MLTs includes data from Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan and Alberta. Registrants with unknown place of primary employment were excluded (86, 1.0%). Data for other jurisdictions (Newfoundland and Labrador, P.E.I., B.C., Yukon, the Northwest Territories and Nunavut) was not included due to a high percentage of unknown values.

For the other professions listed, please see the Methodological Notes in their respective annual reports for comprehensive information regarding collection and comparability of CIHI data, at www.cihi.ca.

Sources

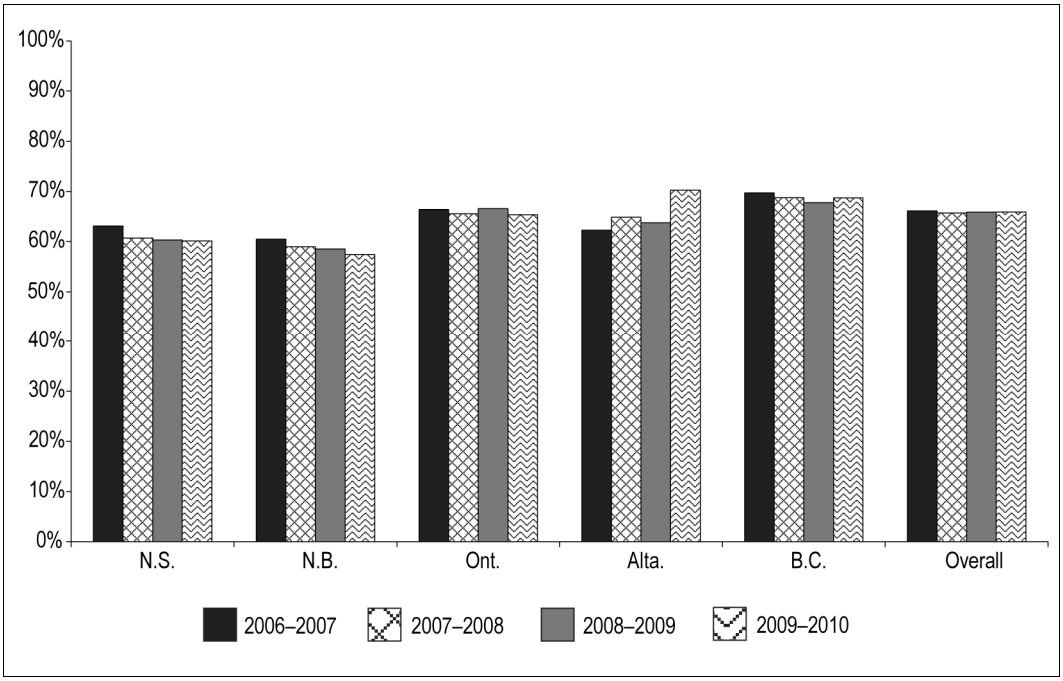
Medical Laboratory Technologist Database, Nursing Database, Occupational Therapist Database, Pharmacist Database, Physiotherapist Database and Medical Radiation Technologist Database, Canadian Institute for Health Information.

Laboratory Compensation Expense in Hospital

Laboratory services can include hospital-based clinical laboratories, community-based clinical laboratories, public health laboratories and other laboratory services.[13] This section provides only statistics related to services delivered in hospital-based clinical laboratories. In hospitals, total clinical laboratory expenses consist of compensation (such as salaries), supplies (such as reagents), sundries (such as continuing education fees and materials), equipment (such as the amortization of the cost of analyzers) and contracted-out services (such as the cost of testing performed at a reference laboratory).[13] Staff compensation is a very important component of total laboratory expenses in hospitals. Figure 14 illustrates compensation paid to MLTs and other staff (excluding medical personnel in laboratory departments) as a percentage of total laboratory expenses in hospital settings. Since the focus of the analysis is hospital-based laboratory expenses, laboratory expenses for non-hospital settings, which could be a significant amount in some provinces, are not included. For example, approximately 29% of Alberta's total reported laboratory expenses occurred in non-hospital settings in 2009–2010.

In each particular fiscal year from 2006–2007 to 2009–2010, compensation as a percentage of clinical laboratory expenses showed different levels among the selected provinces of Nova Scotia, New Brunswick, Ontario, Alberta and B.C. Figure 14 shows four-year trends for each of these provinces. For Alberta in 2009–2010, there was an increase in compensation expenses but a decrease in total laboratory expenses, leading to a significant increase in the ratio of compensation to total clinical laboratory expenses for that year.

Figure 14: Laboratory Compensation Expense as a Percentage of Total Laboratory Expenses for Selected Provinces, 2006–2007 to 2009–2010



Notes

The hospital portion of regionalized expenses is included, with the exception of Alberta for 2009–2010.
Includes compensation for management and operational support personnel and unit-producing personnel working in the clinical laboratory, excluding medical personnel.
Please see notes in related CMDB reports for comprehensive information regarding collection and comparability, at www.cihi.ca.

Source

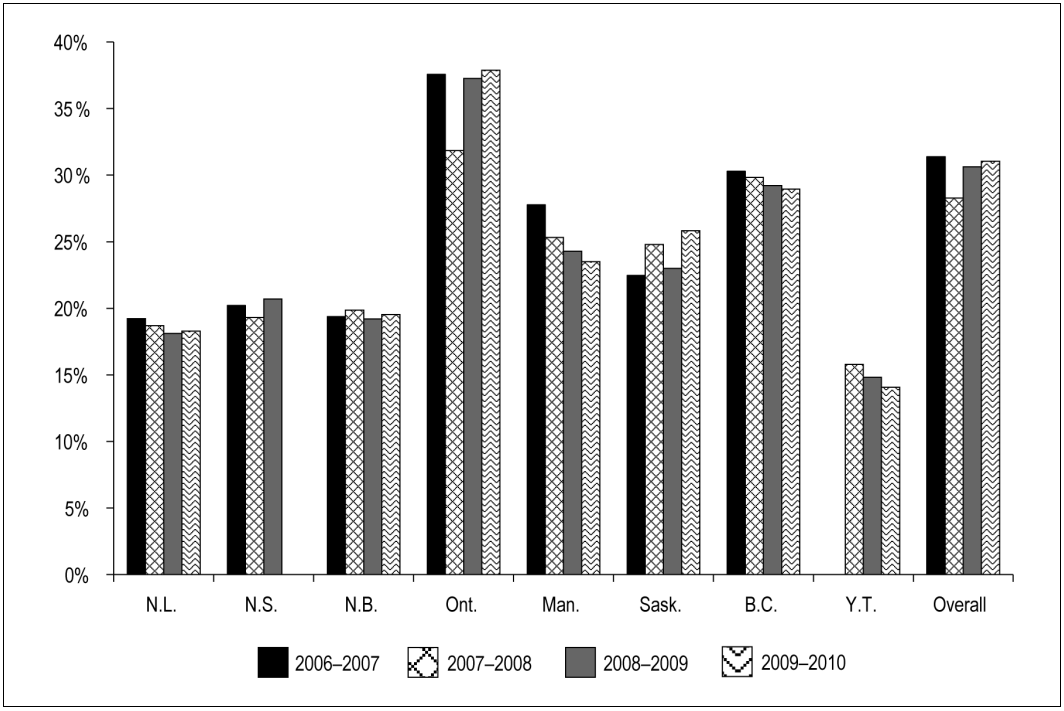
Canadian MIS Database, Canadian Institute for Health Information.

Laboratory Service-Recipient Inpatient Workload in Hospital

Workload is measured in clinical laboratories using a national workload measurement system (WMS). In the WMS, one workload unit represents one minute of time required to perform an activity.[13] Clinical laboratory workload is divided into two major categories: service-recipient and non–service recipient activity. Service recipients are further divided into inpatients and outpatient service clients (such as those in emergency, day surgery or clinics, or patients being referred to the laboratory by the physician).[13] This section focuses on the hospital-based laboratory services that are delivered to inpatients.

In Figure 15, the overall proportion of total clinical laboratory workload attributed to inpatient service recipients remained constant at approximately 31% across all years, with exception of 2007–2008. There was a drop to 28.3% for the overall service-recipient inpatient workload in that year, which may be due to under-reporting. At the jurisdictional level, although every province or territory showed a different trending pattern across these four years, in most cases, the ranking of service-recipient inpatient workload among jurisdictions remained unchanged.

Figure 15: Service-Recipient Inpatient Workload as a Percentage of Total Service-Recipient Workload in Hospital Laboratories for Selected Jurisdictions, 2006–2007 to 2009–2010



Notes

For Nova Scotia, values for 2009–2010 for service-recipient inpatient workload were not included, as data was unavailable due to reporting changes at the primary laboratory site in the province.

Please see the Methodological Notes in related reports for comprehensive information regarding collection and comparability of CMDB data, at www.cihi.ca.

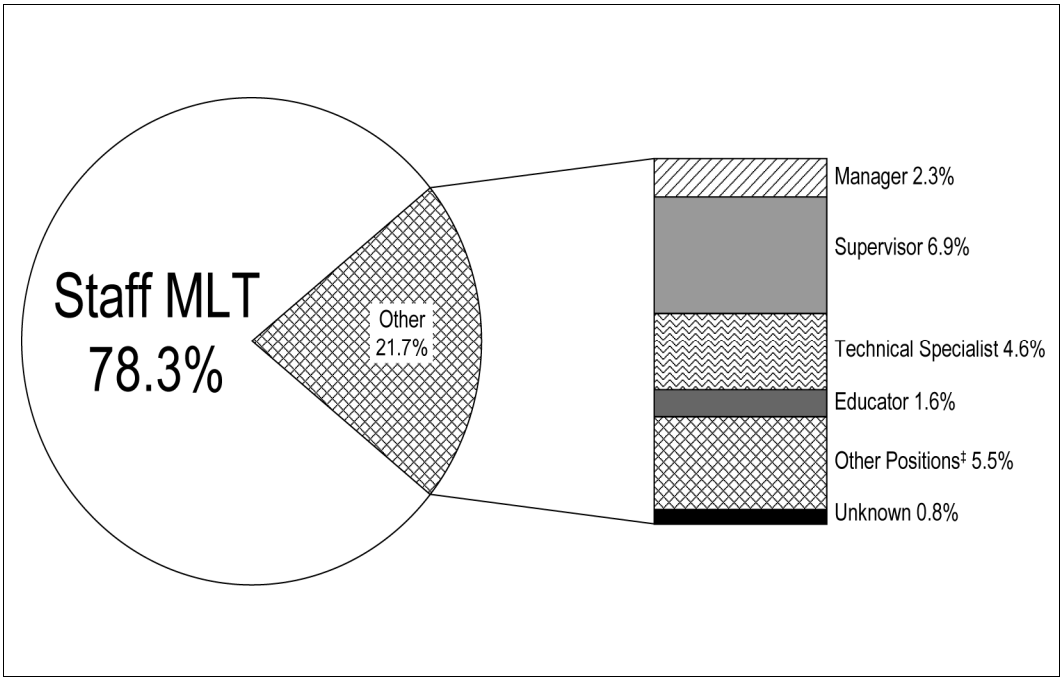
Source

Canadian MIS Database, Canadian Institute for Health Information.

Position

In general, the majority (78.3%) of MLTs worked as staff MLTs at their place of primary employment. Other roles of practising MLTs included manager, supervisor, technical specialist, educator, laboratory information specialist, consultant, researcher, sales and other (Figure 16).

Figure 16: Position for Primary Employment of MLT Workforce, Selected Provinces of Registration, 2010



Notes

‡ *Other positions* includes laboratory information specialist, consultant, researcher, sales and other.
Includes data from Nova Scotia, New Brunswick, Quebec, Manitoba and Alberta.
Data for other jurisdictions (Newfoundland and Labrador, P.E.I., Ontario, Saskatchewan, B.C. and the territories) was not included due to a high percentage of *unknown* values.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

In 2010, at their place of primary employment

1. The majority of MLTs were permanent employees:
   - New Brunswick: 89.4%
   - Ontario: 92.2%
   - Manitoba: 90.4%
   - Alberta: 89.1%
2. Full-time MLTs also accounted for a significant portion of the workforce:
   - New Brunswick: 77.9%
   - Quebec: 62.2%
   - Manitoba: 74.6%

Source
Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Table 11 shows the distribution of MLTs for position for primary employment by province. Across all five selected provinces, Nova Scotia had the highest proportion of staff MLTs (88.0%). Quebec had the highest rate of MLTs who worked as technical specialists (7.9%). There was a higher percentage of MLTs (16.2%) in the role of manager or supervisor in New Brunswick than in other provinces. Differing definitions of roles and responsibilities in managerial, supervisory or technical specialist positions may contribute to the unique distribution for each province.

Table 11: Number and Percentage of MLT Workforce, Position for Primary Employment, by Selected Provinces of Registration, 2010

Position for Primary Employment	N.S.		N.B.		Que.		Man.		Alta.§	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
Manager	41	4.4%	28	4.4%	41	1.0%	24	2.4%	70	3.2%
Supervisor	18	1.9%	76	11.8%	191	4.5%	129	12.8%	208	9.5%
Staff MLT	824	88.0%	499	77.7%	3,338	79.2%	761	75.4%	1,618	73.8%
Technical Specialist	†	†	*	*	331	7.9%	34	3.4%	41	1.9%
Educator	12	1.3%	13	2.0%	50	1.2%	20	2.0%	48	2.2%
Other Positions‡	3†	†	2†	†	262	6.2%	40	4.0%	131	6.0%
Unknown	0	0.0%	0	0.0%	0	0.0%	1	0.1%	75	3.4%
Total	**936**		**642**		**4,213**		**1,009**		**2,191**	

Notes

* Value suppressed in accordance with CIHI's Privacy Policy; cell value is from 1 to 4.

† Value suppressed to ensure confidentiality.

‡ *Other positions* includes laboratory information specialist, consultant, researcher, sales and other.

§ In Alberta, 60 registrants (2.7%) were excluded from the 2010 statistics for the employment data elements due to non-response. Refer to the Data Adjustment Section of the Methodological Notes for further details.

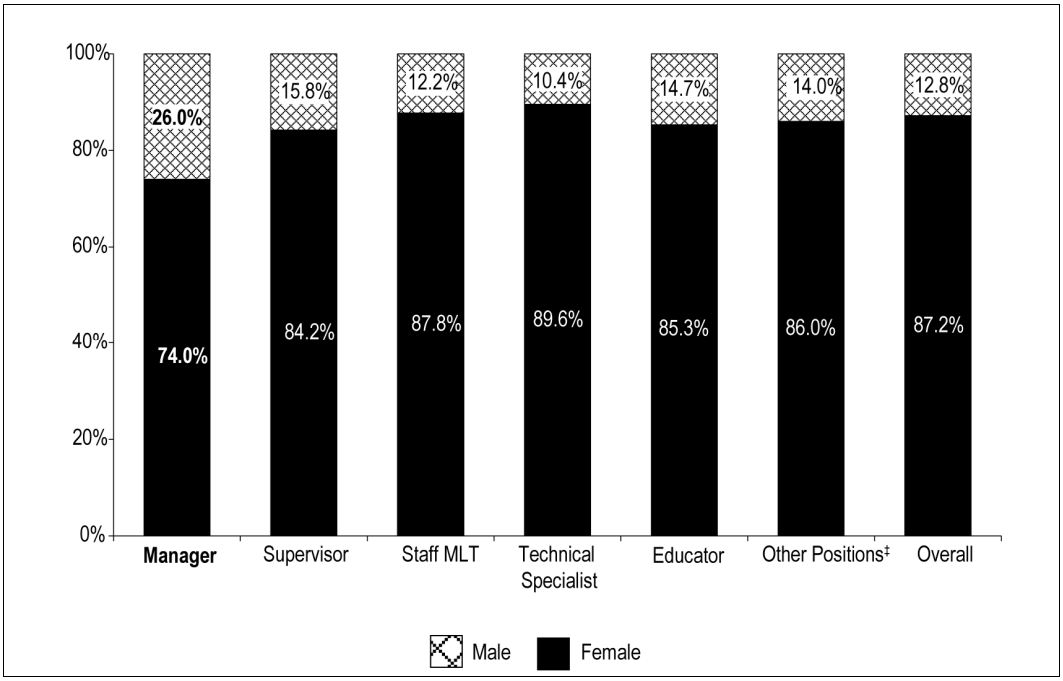
Data for other jurisdictions (Newfoundland and Labrador, P.E.I., Ontario, Saskatchewan, B.C. and the territories) was not included due to a high percentage of *unknown* values.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

A pattern emerged when gender information was examined by position. While female MLTs accounted for more than 80% of the workforce in most positions, the percentage of female managers was 74%, at least 10 percentage points lower than other positions.

Figure 17: MLT Workforce by Position of Primary Employment, by Gender, Selected Provinces of Registration, 2010



Notes

‡ *Other positions* includes laboratory information specialist, consultant, researcher, sales and other.
Includes data from Nova Scotia, New Brunswick, Quebec, Manitoba and Alberta.
Data for other jurisdictions (Newfoundland and Labrador, P.E.I., Ontario, Saskatchewan, B.C. and the territories) was not included due to a high percentage of *unknown* values.
Registrants with *unknown* position of primary employment were excluded (76, 0.8%).

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Among females, MLT managers accounted for only 1.9%, less than the percentage of 4.6% of male managers among all males. In other words, 19 out of 1,000 female MLTs and 46 out of 1,000 male MLTs were managers. A similar observation was found for selected provinces (that is, differing female-to-male ratios for managerial positions).

Table 12: Number and Percentage of MLT Workforce With Managerial Position for Primary Employment, by Gender, Selected Provinces of Registration, 2010

Province of Registration	Number of Managers		Total Workforce		Percentage of Managers in Each Gender Category	
	Female (A)	Male (B)	Female (C)	Male (D)	Female (E) = (A) / (C)	Male (F) = (B) / (D)
N.S.	29	12	798	138	3.6%	8.7%
N.B.	21	7	566	76	3.7%	9.2%
Que.	27	14	3,664	549	0.7%	2.6%
Man.	17	7	863	146	2.0%	4.8%
Alta.	57	13	1,950	241	2.9%	5.4%
Overall	**151**	**53**	**7,841**	**1,150**	**1.9%**	**4.6%**

Notes

Data for other jurisdictions (Newfoundland and Labrador, P.E.I., Ontario, Saskatchewan, B.C. and the territories) was not included due to a high percentage of *unknown* values.

In Alberta, 60 registrants (2.7%) were excluded from the 2010 statistics for the employment data elements due to non-response. Refer to the Data Adjustment Section of the Methodological Notes for further details.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

The 10-year age group distribution of MLTs within each type of positions also showed varying patterns. For example, nearly half of the MLTs who worked at managerial positions were between 50 and 59 years old. In the staff MLT category, however, the distribution of the MLT workforce was quite even across all 10-year age groups (20.1% to 26.6%), except for MLTs who were 60 and older.

Table 13: MLT Workforce by Position for Primary Employment, by Ten-Year Age Groups, Selected Provinces of Registration, 2010

Position for Primary Employment	Manager		Supervisor		Staff MLT		Technical Specialist		Educator		Other Positions‡		Unknown Position		Overall	
10-Year Age Groups	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
20–29	0	0.0%	*	*	1,416	20.1%	17	4.1%	14	9.8%	64	13.0%	2†	†	1,536	17.1%
30–39	19	9.3%	62	10.0%	1,627	23.1%	72	17.5%	25	17.5%	98	19.8%	18	23.7%	1,921	21.4%
40–49	64	31.4%	219	35.2%	1,876	26.6%	138	33.5%	53	37.1%	128	25.9%	23	30.3%	2,501	27.8%
50–59	98	48.0%	296	47.6%	1,735	24.6%	173	42.0%	40	28.0%	157	31.8%	10	13.2%	2,509	27.9%
60+	23	11.3%	3†	†	385	5.5%	12	2.9%	11	7.7%	47	9.5%	*	*	521	5.8%
Unknown Age	0	0.0%	2	0.3%	1	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	0.0%
Total	**204**		**622**		**7,040**		**412**		**143**		**494**		**76**		**8,991**	

Notes

* Value suppressed in accordance with CIHI's Privacy Policy; cell value is from 1 to 4.

† Value suppressed to ensure confidentiality.

‡ *Other positions* includes laboratory information specialist, consultant, researcher, sales and other.

Includes data from Nova Scotia, New Brunswick, Quebec, Manitoba and Alberta.

Data for other jurisdictions (Newfoundland and Labrador, P.E.I., Ontario, Saskatchewan, B.C. and the territories) was not included due to a high percentage of *unknown* values.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Overall, only 3.9% of MLTs worked for two employers in the four provinces of Nova Scotia, New Brunswick, Manitoba and Alberta. This percentage was relatively low compared with other health care professionals such as occupational therapists (17.2%), physiotherapists (22.1%), pharmacists (19.5%) and regulated nurses (14.2% in 2009), as well as compared with the general Canadian workforce (5.3% in 2007).[2]

Sources

Medical Laboratory Technologist Database, Occupational Therapist Database, Physiotherapist Database and Pharmacist Database, 2010, and Nursing Database, 2009, Canadian Institute for Health Information.

Provincial/Territorial Highlights and Analyses

Regulated Provinces:
Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan and Alberta

Unregulated Provinces and Territories:
Newfoundland and Labrador, Prince Edward Island, British Columbia, Yukon, the Northwest Territories and Nunavut

2010 Highlights for Medical Laboratory Technologists in Nova Scotia

Workforce Supply and Demographics

- There were 936 registered MLTs in the Nova Scotia workforce in 2010.
- The majority of the MLT workforce in Nova Scotia was female (85.3%), similar to the average for all regulated provinces (85.4%).
- The average age of MLTs in Nova Scotia was 46.0, slightly older than the overall average age for the seven regulated provinces (45.1).
- In Nova Scotia, 22.4% of working MLTs were 55 and older, similar to the combined average across the regulated provinces.

Education and Certification

- In 2010, the majority (99.0%) of Nova Scotia MLTs held a diploma as their basic level of education in medical laboratory technology.
- Most (98.5%) of the MLT workforce in Nova Scotia received training in Canada, while approximately 1% were foreign-trained.
- Slightly more than 3% of the Nova Scotia MLT workforce had graduated from a medical laboratory technology training program within the past two years.
- The majority (97.3%) of the Nova Scotia MLT workforce held one certification only.
- Most (89.4%) MLTs employed in Nova Scotia received their initial certification in general medical laboratory technology, higher than the combined average for all provinces and territories excluding Quebec (85.3%).
- Slightly less than 2% of the Nova Scotia MLT workforce obtained an ART certification.

Primary Employment

- Most (87.2%) of the Nova Scotia MLT workforce worked in general hospitals in 2010.
- Staff MLTs in Nova Scotia accounted for 88% of the workforce, almost 11 percentage points higher than the average (78.3%) for five regulated provinces combined (Nova Scotia, New Brunswick, Quebec, Manitoba and Alberta).
- Of the MLT workforce in Nova Scotia, 90.5% provided diagnostic and therapeutic laboratory services at their place of work.
- The top five areas of practice in which Nova Scotia MLTs worked were clinical chemistry (19.1%), hematology (18.8%), transfusion medicine/science (16.5%), specimen procurement, receipt and dispatch (14.5%) and microbiology (9.3%).
- More than half (57.1%) of the MLT workforce worked in the Capital Health Authority health region.

Nova Scotia MLT Workforce Profile

Nova Scotia—Total Medical Laboratory Technologist Workforce, 2008 to 2010

		2008		2009		2010	
		Count	Percentage	Count	Percentage	Count	Percentage
Total Registered Medical Laboratory Technologist Workforce		**939**		**921**		**936**	
Gender	Female	805	85.7%	791	85.9%	798	85.3%
	Male	134	14.3%	130	14.1%	138	14.7%
	Unknown	0	0.0%	0	0.0%	0	0.0%
Average Age	Years	45.1		45.5		46	
Age Group	<35	156	16.6%	148	16.1%	153	16.3%
	35–54	619	65.9%	585	63.5%	573	61.2%
	55+	164	17.5%	188	20.4%	210	22.4%
	Unknown	0	0.0%	0	0.0%	0	0.0%
Level of Basic Education in Medical Laboratory Technology	Diploma	–	–	912	99.0%	927	99.0%
	Baccalaureate	–	–	5	0.5%	6	0.6%
	Master's	–	–	0	0.0%	0	0.0%
	Doctorate	–	–	0	0.0%	0	0.0%
	Unknown	–	–	4	0.4%	3	0.3%
Location of Graduation for Basic Education in Medical Laboratory Technology	Canadian Trained	–	–	908	98.6%	922	98.5%
	Foreign Trained	–	–	8	0.9%	10	1.1%
	Unknown	–	–	5	0.5%	4	0.4%
New Graduates	Yes—Graduated in Last Two Years	–	–	43	4.7%	29	3.1%
	No—Graduated More Than Two Years Ago	–	–	874	94.9%	904	96.6%
	Unknown	–	–	4	0.4%	3	0.3%
Number of Certifications	Single Certification	914	97.3%	896	97.3%	911	97.3%
	Multiple Certifications	18	1.9%	21	2.3%	22	2.4%
	Unknown	7	0.7%	4	0.4%	3	0.3%
Initial Certification Discipline	General	846	90.1%	821	89.1%	837	89.4%
	Clinical Genetics	10	1.1%	10	1.1%	11	1.2%
	Diagnostic Cytology	48	5.1%	54	5.9%	55	5.9%
	Clinical Chemistry	*	*	*	*	*	*
	Hematology	5	0.5%	*	*	*	*
	Histology	*	*	*	*	*	*
	Microbiology	*	*	*	*	*	*
	Transfusion Medicine/Science	5	0.5%	*	*	*	*
	Other	7	0.7%	*	*	*	*
	Unknown	7	0.7%	20	2.2%	18	1.9%
Advanced Registered Technologist	Yes	–	–	17	1.8%	18	1.9%
	No	–	–	904	98.2%	918	98.1%
	Unknown	–	–	0	0.0%	0	0.0%
Multiple Employment Status	Single Employer	939	100.0%	91†	†	93†	†
	Multiple Employers	0	0.0%	*	*	*	*
	Unknown	0	0.0%	0	0.0%	0	0.0%
Total Usual Weekly Hours of Work	<22.5	–	–	–	–	–	–
	22.5–37.4	–	–	–	–	–	–
	37.5+	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Primary Employment							
Employment Category	Permanent Employee	–	–	–	–	–	–
	Temporary Employee	–	–	–	–	–	–
	Casual Employee	–	–	–	–	–	–
	Self-Employed	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Full-Time/Part-Time Status	Full Time	–	–	–	–	–	–
	Part Time	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–

(continued on next page)

Nova Scotia—Total Medical Laboratory Technologist Workforce, 2008 to 2010 (cont'd)

		2008		2009		2010	
		Count	Percentage	Count	Percentage	Count	Percentage
Place of Employment	General Hospital	–	–	798	86.6%	816	87.2%
	Residential Care Facility	–	–	0	0.0%	0	0.0%
	Physician's Office/Other Professional Practice Office	–	–	*	*	*	*
	Community Health Centre	–	–	28	3.0%	27	2.9%
	Public Health Laboratory/Department/Unit	–	–	0	0.0%	0	0.0%
	Centralized Diagnostic Laboratory Facility	–	–	0	0.0%	0	0.0%
	Free-Standing Diagnostic Laboratory	–	–	*	*	0	0.0%
	Specimen Collection Centre	–	–	0	0.0%	0	0.0%
	Blood Transfusion Centre	–	–	3†	†	38	4.1%
	Other Laboratory Facility	–	–	6	0.7%	6	0.6%
	Post-Secondary Educational Institution	–	–	12	1.3%	12	1.3%
	Association/Government/Para-Governmental	–	–	11	1.2%	11	1.2%
	Industry, Manufacturing and Commercial	–	–	13	1.4%	13	1.4%
	Other	–	–	†	†	†	†
	Unknown	–	–	0	0.0%	0	0.0%
Position	Manager	–	–	37	4.0%	41	4.4%
	Supervisor	–	–	20	2.2%	18	1.9%
	Staff MLT	–	–	817	88.7%	824	88.0%
	Technical Specialist	–	–	5	0.5%	5	0.5%
	Laboratory Information System Specialist	–	–	14	1.5%	19	2.0%
	Consultant	–	–	7	0.8%	*	*
	Educator	–	–	11	1.2%	12	1.3%
	Researcher	–	–	0	0.0%	0	0.0%
	Sales	–	–	*	*	9	1.0%
	Other	–	–	†	†	†	†
	Unknown	–	–	0	0.0%	0	0.0%
Clinical Education/ Preceptor Activity Indicator	Yes	–	–	–	–	–	–
	No	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Major Function	Diagnostic and Therapeutic Laboratory Services	–	–	837	90.9%	847	90.5%
	Administration	–	–	23	2.5%	26	2.8%
	Quality Management	–	–	22	2.4%	22	2.4%
	Teaching, Medical Laboratory Technology–Related	–	–	10	1.1%	10	1.1%
	Research	–	–	*	*	*	*
	Other Major Function	–	–	2†	†	2†	†
	Unknown	–	–	2	0.2%	1	0.1%
Area of Practice	Clinical Chemistry	–	–	450	21.5%	430	19.1%
	Clinical Genetics	–	–	17	0.8%	19	0.8%
	Diagnostic Cytology	–	–	49	2.3%	50	2.2%
	Hematology	–	–	444	21.2%	424	18.8%
	Histology	–	–	77	3.7%	93	4.1%
	Immunology	–	–	29	1.4%	118	5.2%
	Microbiology	–	–	143	6.8%	209	9.3%
	Specimen Procurement, Receipt and Dispatch	–	–	386	18.5%	326	14.5%
	Transfusion Medicine/Science	–	–	429	20.5%	371	16.5%
	Point-of-Care Testing	–	–	*	*	113	5.0%
	Other	–	–	6†	†	100	4.4%
Health Region	Zone 1 (South Shore and South West Health Authorities)	–	–	89	9.7%	91	9.7%
	Zone 2 (Annapolis Valley Health Authority)	–	–	57	6.2%	57	6.1%
	Zone 3 (Colchester East Hants and Cumberland Health Authorities)	–	–	64	6.9%	62	6.6%
	Zone 4 (Pictou County and Guysborough Antigonish Strait Health Authorities)	–	–	68	7.4%	70	7.5%
	Zone 5 (Cape Breton Health Authority)	–	–	117	12.7%	120	12.8%
	Zone 6 (Capital Health Authority)	–	–	521	56.6%	534	57.1%
	Unknown	–	–	5	0.5%	2	0.2%

Notes

* Value suppressed in accordance with CIHI's privacy policy; cell value is from 1 to 4.

† Value suppressed to ensure confidentiality.

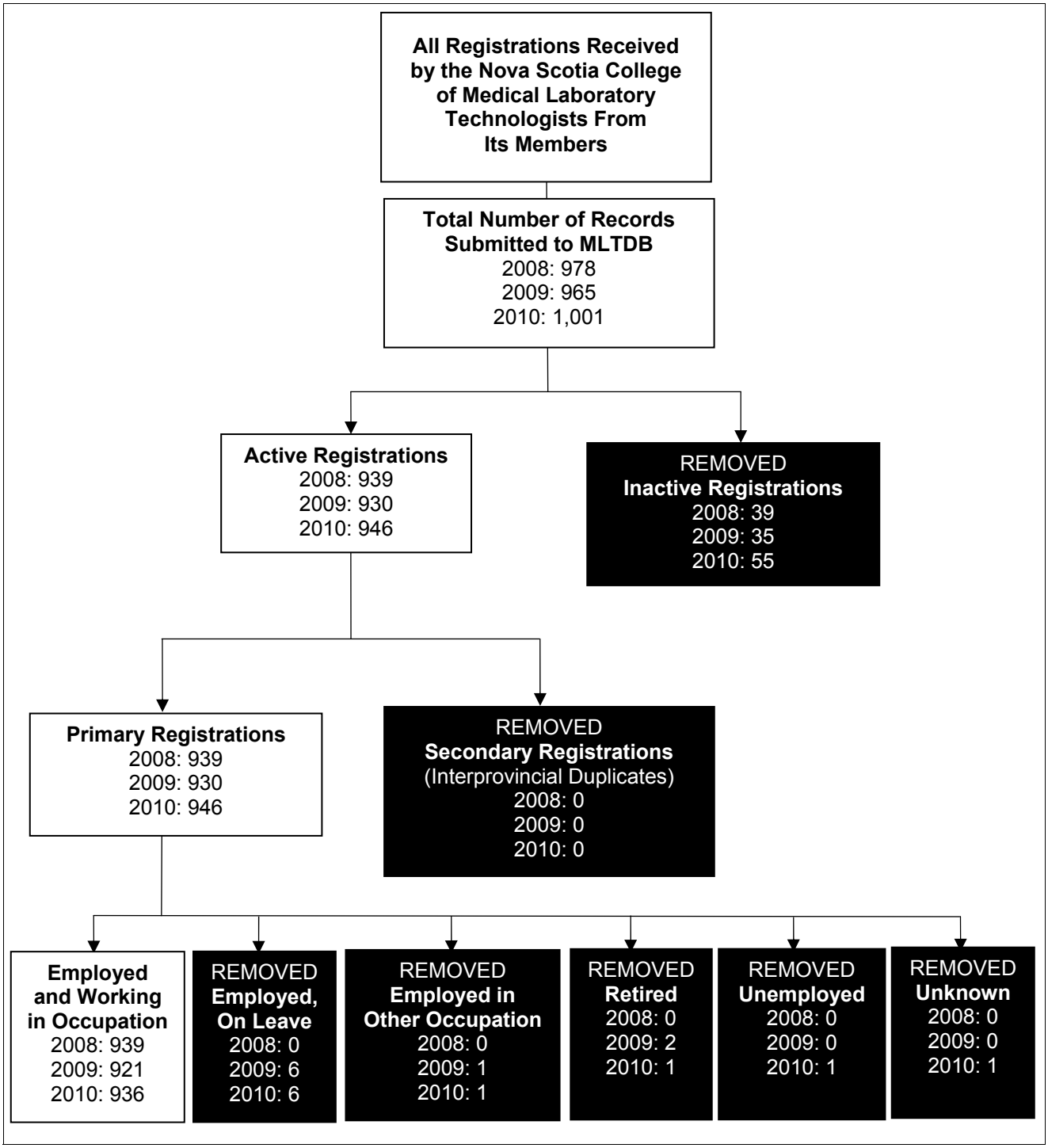
– Data is not applicable, not collected or does not meet data selection criteria.

Totals may not equal 100% due to rounding.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Data Flow From the Nova Scotia College of Medical Laboratory Technologists to CIHI



2010 Highlights for Medical Laboratory Technologists in New Brunswick

Workforce Supply and Demographics

- There were 642 registered MLTs in the New Brunswick workforce in 2010.
- The majority of the MLT workforce in New Brunswick was female (88.2%), higher than the average of all regulated provinces (85.4%).
- The average age of members in the MLT workforce in New Brunswick was 43.7, younger than the overall average age for the seven regulated provinces (45.1).
- In New Brunswick, 15.3% of working MLTs were 55 and older, which was lower than the combined average across the regulated provinces (22.4%).

Education and Certification

- In 2010, all MLTs in New Brunswick held a diploma as their basic level of education in medical laboratory technology.
- Slightly more than 3% of New Brunswick MLTs were new graduates who had graduated from a medical laboratory technology training program within the past two years.
- The majority (90.5%) of the MLT workforce in New Brunswick held a single certification only.
- Most (92.8%) MLTs employed in New Brunswick received their initial certification in general medical laboratory technology, higher than the combined average for all provinces and territories excluding Quebec (85.3%).

Primary Employment

- Most (89.4%) New Brunswick MLTs were permanent employees in their primary employment in 2010.
- More than three-quarters (77.9%) of the MLT workforce in New Brunswick worked on a full-time basis.
- More than 90% of MLTs were employed in general hospitals in New Brunswick, the highest percentage among five regulated provinces (Nova Scotia, New Brunswick, Quebec, Manitoba and Alberta).
- Staff MLTs in New Brunswick accounted for 77.7% of the workforce, similar to the average for five regulated provinces combined (78.3%) (Nova Scotia, New Brunswick, Quebec, Manitoba and Alberta).
- More than three-quarters (77.7%) of the MLT workforce provided diagnostic and therapeutic laboratory services in New Brunswick.
- The top areas in which New Brunswick MLTs practised were clinical chemistry (37.9%), hematology (16.0%) and microbiology (14.8%).

Total Usual Weekly Hours of Work

- More than three-quarters (75.5%) of the workforce worked 37.5 hours or longer per week.

New Brunswick MLT Workforce Profile

New Brunswick—Total Medical Laboratory Technologist Workforce, 2008 to 2010

		2008		2009		2010	
		Count	Percentage	Count	Percentage	Count	Percentage
Total Registered Medical Laboratory Technologist Workforce		**641**		**638**		**642**	
Gender	Female	575	89.7%	568	89.0%	566	88.2%
	Male	66	10.3%	70	11.0%	76	11.8%
	Unknown	0	0.0%	0	0.0%	0	0.0%
Average Age	Years	43.7		43.6		43.7	
Age Group	<35	138	21.5%	141	22.1%	146	22.7%
	35–54	416	64.9%	405	63.5%	396	61.7%
	55+	86	13.4%	91	14.3%	98	15.3%
	Unknown	1	0.2%	1	0.2%	2	0.3%
Level of Basic Education in Medical Laboratory Technology	Diploma	641	100.0%	638	100.0%	642	100.0%
	Baccalaureate	0	0.0%	0	0.0%	0	0.0%
	Master's	0	0.0%	0	0.0%	0	0.0%
	Doctorate	0	0.0%	0	0.0%	0	0.0%
	Unknown	0	0.0%	0	0.0%	0	0.0%
Location of Graduation for Basic Education in Medical Laboratory Technology	Canadian Trained	–	–	–	–	–	–
	Foreign Trained	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
New Graduates	Yes—Graduated in Last Two Years	21	3.3%	26	4.1%	20	3.1%
	No—Graduated More Than Two Years Ago	615	95.9%	608	95.3%	617	96.1%
	Unknown	5	0.8%	4	0.6%	5	0.8%
Number of Certifications	Single Certification	591	92.2%	588	92.2%	581	90.5%
	Multiple Certifications	50	7.8%	50	7.8%	61	9.5%
	Unknown	0	0.0%	0	0.0%	0	0.0%
Initial Certification Discipline	General	592	92.4%	587	92.0%	596	92.8%
	Clinical Genetics	*	*	5	0.8%	5	0.8%
	Diagnostic Cytology	26	4.1%	29	4.5%	28	4.4%
	Clinical Chemistry	7	1.1%	5	0.8%	*	*
	Hematology	*	*	*	*	*	*
	Histology	*	*	*	*	*	*
	Microbiology	6	0.9%	6	0.9%	*	*
	Transfusion Medicine/Science	*	*	*	*	*	*
	Other	*	*	*	*	0	0.0%
	Unknown	0	0.0%	0	0.0%	0	0.0%
Advanced Registered Technologist	Yes	–	–	–	–	–	–
	No	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Multiple Employment Status	Single Employer	629	98.1%	627	98.3%	637	99.2%
	Multiple Employers	12	1.9%	11	1.7%	5	0.8%
	Unknown	0	0.0%	0	0.0%	0	0.0%
Total Usual Weekly Hours of Work	<22.5	74	11.5%	56	8.8%	56	8.7%
	22.5–37.4	105	16.4%	106	16.6%	101	15.7%
	37.5+	462	72.1%	476	74.6%	485	75.5%
	Unknown	0	0.0%	0	0.0%	0	0.0%
Primary Employment							
Employment Category	Permanent Employee	557	86.9%	574	90.0%	574	89.4%
	Temporary Employee	34	5.3%	20	3.1%	26	4.0%
	Casual Employee	50	7.8%	44	6.9%	42	6.5%
	Self-Employed	0	0.0%	0	0.0%	0	0.0%
	Unknown	0	0.0%	0	0.0%	0	0.0%
Full-Time/Part-Time Status	Full Time	490	76.4%	494	77.4%	500	77.9%
	Part Time	136	21.2%	132	20.7%	122	19.0%
	Unknown	15	2.3%	12	1.9%	20	3.1%
Place of Employment	General Hospital	578	90.2%	587	92.0%	588	91.6%
	Residential Care Facility	0	0.0%	0	0.0%	0	0.0%
	Physician's Office/Other Professional Practice	12	1.9%	13	2.0%	14	2.2%
	Community Health Centre	21	3.3%	10	1.6%	11	1.7%
	Public Health Laboratory/Department/Unit	0	0.0%	0	0.0%	0	0.0%
	Centralized Diagnostic Laboratory Facility	0	0.0%	0	0.0%	0	0.0%
	Free-Standing Diagnostic Laboratory	0	0.0%	0	0.0%	0	0.0%
	Specimen Collection Centre	0	0.0%	0	0.0%	0	0.0%
	Blood Transfusion Centre	0	0.0%	0	0.0%	0	0.0%
	Other Laboratory Facility	0	0.0%	0	0.0%	0	0.0%
	Post-Secondary Educational Institution	12	1.9%	1†	†	1†	†
	Association/Government/Para-Governmental	*	*	*	*	*	*
	Industry, Manufacturing and Commercial	0	0.0%	0	0.0%	0	0.0%
	Other	1†	†	1†	†	1†	†
	Unknown	0	0.0%	0	0.0%	0	0.0%

(continued on next page)

New Brunswick—Total Medical Laboratory Technologist Workforce, 2008 to 2010 (cont'd)

		2008		2009		2010	
		Count	Percentage	Count	Percentage	Count	Percentage
Position	Manager	32	5.0%	30	4.7%	28	4.4%
	Supervisor	77	12.0%	75	11.8%	76	11.8%
	Staff MLT	503	78.5%	496	77.7%	499	77.7%
	Technical Specialist	0	0.0%	*	*	*	*
	Laboratory Information System Specialist	0	0.0%	5	0.8%	6	0.9%
	Consultant	*	*	*	*	*	*
	Educator	13	2.0%	1†	†	1†	†
	Researcher	*	*	0	0.0%	0	0.0%
	Sales	0	0.0%	0	0.0%	0	0.0%
	Other	12	1.9%	1†	†	1†	†
	Unknown	0	0.0%	0	0.0%	0	0.0%
Clinical Education/Preceptor Activity Indicator	Yes	–	–	–	–	–	–
	No	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Major Function	Diagnostic and Therapeutic Laboratory Services	503	78.5%	496	77.7%	499	77.7%
	Administration	80	12.5%	76	11.9%	77	12.0%
	Quality Management	0	0.0%	8	1.3%	9	1.4%
	Teaching, Medical Laboratory Technology-Related	13	2.0%	12	1.9%	13	2.0%
	Research	*	*	0	0.0%	0	0.0%
	Other Major Function	4†	†	46	7.2%	44	6.9%
	Unknown	0	0.0%	0	0.0%	0	0.0%
Area of Practice	Clinical Chemistry‡	126	18.4%	256	38.2%	253	37.9%
	Clinical Genetics	*	*	*	*	*	*
	Diagnostic Cytology	31	4.5%	32	4.8%	31	4.6%
	Hematology	95	13.9%	98	14.6%	107	16.0%
	Histology	41	6.0%	47	7.0%	42	6.3%
	Immunology	*	*	*	*	*	*
	Microbiology	101	14.8%	99	14.8%	99	14.8%
	Specimen Procurement, Receipt and Dispatch	6	0.9%	7	1.0%	8	1.2%
	Transfusion Medicine/Science	60	8.8%	61	9.1%	62	9.3%
	Point-of-Care Testing	0	0.0%	*	*	*	*
	Other	221	32.3%	63	9.4%	58	8.7%
Health Region§	Zone 1 (Moncton/South-East Area)	–	–	161	25.2%	169	26.3%
	Zone 2 (Fundy Shore/Saint John Area)	–	–	168	26.3%	170	26.5%
	Zone 3 (Fredericton/River Valley Area)	–	–	139	21.8%	137	21.3%
	Zone 4 (Madawaska/North West Area)	–	–	38	6.0%	38	5.9%
	Zone 5 (Restigouche Area)	–	–	31	4.9%	31	4.8%
	Zone 6 (Bathurst/Acadian Peninsula Area)	–	–	63	9.9%	61	9.5%
	Zone 7 (Miramichi Area)	–	–	26	4.1%	27	4.2%
	Unknown	–	–	12	1.9%	9	1.4%

Notes

* Value suppressed in accordance with CIHI's privacy policy; cell value is from 1 to 4.

† Value suppressed to ensure confidentiality.

‡ The significant changes in clinical chemistry and other from 2008 to 2009 reflect efforts made by the data provider to map the classification to the MLTDB standard.

§ On September 1, 2008, eight regional health authorities in New Brunswick amalgamated into two. Nevertheless, the data in this table has been reported using the boundaries in effect as of December 2007, in accordance with Statistics Canada's Postal Code Conversion File. Further details about boundaries can be found at www.statcan.gc.ca/pub/82-221-x/2009001/regions/hrt2c-eng.htm.

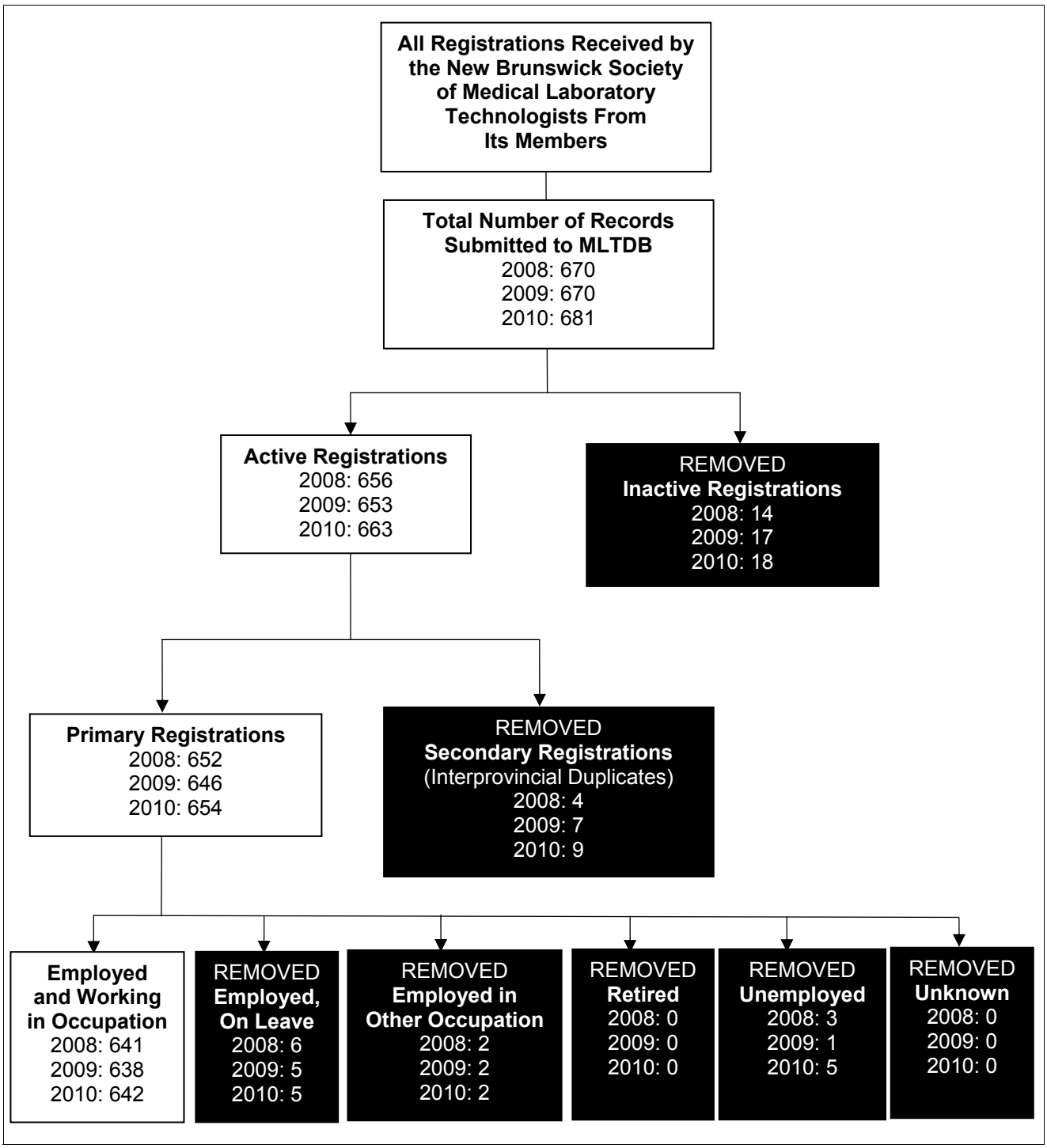
– Data is not applicable, not collected or does not meet data selection criteria.

Totals may not equal 100% due to rounding.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Data Flow From the New Brunswick Society of Medical Laboratory Technologists to CIHI



2010 Highlights for Medical Laboratory Technologists in Quebec

Workforce Supply and Demographics

- There were 4,213 registered MLTs in the Quebec workforce in 2010.
- The majority of the MLT workforce in Quebec was female (87%), higher than the average of all regulated provinces (85.4%).
- The average age of the MLT workforce in Quebec was 39.7, younger than the overall average age for the seven regulated provinces (45.1).
- In Quebec, 12.5% of working MLTs were 55 and older, which was the lowest percentage across the seven regulated provinces. On the other hand, the percentage of Quebec MLTs who were younger than 35 (41.1%) was almost double that of the seven regulated provinces combined (21.2%).

Education and Certification

- In 2010, the majority (95.8%) of Quebec MLTs held a diploma as their basic level of education in medical laboratory technology.
- Slightly more than 9% of Quebec MLTs were new graduates who had graduated from a medical laboratory technology training program within the past two years.

Primary Employment

- More than 60% of the MLT workforce in Quebec held a full-time job in 2010.
- Most of the Quebec MLT workforce worked in general hospitals (88.3%). Free-standing diagnostic laboratories had 4.8% of the MLT workforce in Quebec.
- Approximately 80% of MLTs in Quebec were staff MLTs. This level was similar to the average for five regulated provinces combined (78.3%) (Nova Scotia, New Brunswick, Quebec, Manitoba and Alberta) and was the second highest after Nova Scotia (88.0%).
- The top three areas in which the Quebec MLT workforce practised were clinical chemistry (20.8%), specimen procurement, receipt and dispatch (19.4%) and hematology (19.0%).
- About one-third (32.4%) of the MLT workforce worked in the Région de Montréal health region.

Quebec MLT Workforce Profile

Quebec—Total Medical Laboratory Technologist Workforce, 2008 to 2010

		2008		2009		2010	
		Count	Percentage	Count	Percentage	Count	Percentage
Total Registered Medical Laboratory Technologist Workforce		**4,223**		**4,197**		**4,213**	
Gender	Female	3,708	87.8%	3,662	87.3%	3,664	87.0%
	Male	515	12.2%	535	12.7%	549	13.0%
	Unknown	0	0.0%	0	0.0%	0	0.0%
Average Age	Years	39.7		39.7		39.7	
Age Group	<35	1,672	39.6%	1,701	40.5%	1,730	41.1%
	35–54	2,059	48.8%	1,977	47.1%	1,958	46.5%
	55+	492	11.7%	519	12.4%	525	12.5%
	Unknown	0	0.0%	0	0.0%	0	0.0%
Level of Basic Education in Medical Laboratory Technology	Diploma	–	–	3,994	95.2%	4,036	95.8%
	Baccalaureate	–	–	0	0.0%	0	0.0%
	Master's	–	–	0	0.0%	0	0.0%
	Doctorate	–	–	0	0.0%	0	0.0%
	Unknown	–	–	203	4.8%	177	4.2%
Location of Graduation for Basic Education in Medical Laboratory Technology	Canadian Trained	–	–	–	–	–	–
	Foreign Trained	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
New Graduates	Yes—Graduated in Last Two Years	405	9.6%	400	9.5%	387	9.2%
	No—Graduated More Than Two Years Ago	3,815	90.3%	3,797	90.5%	3,824	90.8%
	Unknown	3	0.1%	0	0.0%	2	0.0%
Number of Certifications	Single Certification	–	–	–	–	–	–
	Multiple Certifications	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Initial Certification Discipline	General	–	–	–	–	–	–
	Clinical Genetics	–	–	–	–	–	–
	Diagnostic Cytology	–	–	–	–	–	–
	Clinical Chemistry	–	–	–	–	–	–
	Hematology	–	–	–	–	–	–
	Histology	–	–	–	–	–	–
	Microbiology	–	–	–	–	–	–
	Transfusion Medicine/Science	–	–	–	–	–	–
	Other	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Advanced Registered Technologist	Yes	–	–	–	–	–	–
	No	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Multiple Employment Status	Single Employer	–	–	–	–	–	–
	Multiple Employers	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Total Usual Weekly Hours of Work	<22.5	–	–	–	–	–	–
	22.5–37.4	–	–	–	–	–	–
	37.5+	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Primary Employment							
Employment Category	Permanent Employee	–	–	–	–	–	–
	Temporary Employee	–	–	–	–	–	–
	Casual Employee	–	–	–	–	–	–
	Self-Employed	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Full-Time/Part-Time Status	Full Time	2,209	52.3%	2,293	54.6%	2,622	62.2%
	Part Time	1,837	43.5%	1,716	40.9%	1,591	37.8%
	Unknown	177	4.2%	188	4.5%	0	0.0%
Place of Employment	General Hospital	3,712	87.9%	3,712	88.4%	3,718	88.3%
	Residential Care Facility	0	0.0%	0	0.0%	0	0.0%
	Physician's Office/Other Professional Practice	0	0.0%	0	0.0%	0	0.0%
	Community Health Centre	0	0.0%	*	*	0	0.0%
	Public Health Laboratory/Department/Unit	21	0.5%	1†	†	20	0.5%
	Centralized Diagnostic Laboratory Facility	0	0.0%	0	0.0%	0	0.0%
	Free-Standing Diagnostic Laboratory	217	5.1%	208	5.0%	203	4.8%
	Specimen Collection Centre	24	0.6%	18	0.4%	21	0.5%
	Blood Transfusion Centre	0	0.0%	0	0.0%	0	0.0%
	Other Laboratory Facility	0	0.0%	0	0.0%	0	0.0%
	Post-Secondary Educational Institution	39	0.9%	4†	†	47	1.1%
	Association/Government/Para-Governmental	0	0.0%	0	0.0%	0	0.0%
	Industry, Manufacturing and Commercial	51	1.2%	47	1.1%	37	0.9%
	Other	134	3.2%	2†	†	158	3.8%
	Unknown	25	0.6%	127	3.0%	9	0.2%

(continued on next page)

Quebec—Total Medical Laboratory Technologist Workforce, 2008 to 2010 (cont'd)

		2008		2009		2010	
		Count	Percentage	Count	Percentage	Count	Percentage
Position	Manager	34	0.8%	40	1.0%	41	1.0%
	Supervisor	212	5.0%	202	4.8%	191	4.5%
	Staff MLT	3,376	79.9%	3,341	79.6%	3,338	79.2%
	Technical Specialist	283	6.7%	309	7.4%	331	7.9%
	Laboratory Information System Specialist	0	0.0%	0	0.0%	0	0.0%
	Consultant	0	0.0%	0	0.0%	0	0.0%
	Educator	51	1.2%	47	1.1%	50	1.2%
	Researcher	0	0.0%	0	0.0%	0	0.0%
	Sales	6	0.1%	6	0.1%	7	0.2%
	Other	140	3.3%	135	3.2%	255	6.1%
	Unknown	121	2.9%	117	2.8%	0	0.0%
Clinical Education/Preceptor Activity Indicator	Yes	–	–	–	–	–	–
	No	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Major Function	Diagnostic and Therapeutic Laboratory Services	–	–	–	–	–	–
	Administration	–	–	–	–	–	–
	Quality Management	–	–	–	–	–	–
	Teaching, Medical Laboratory Technology–Related	–	–	–	–	–	–
	Research	–	–	–	–	–	–
	Other Major Function	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Area of Practice	Clinical Chemistry§	–	–	–	–	1,841	20.8%
	Clinical Genetics	–	–	24	0.7%	22	0.2%
	Diagnostic Cytology	–	–	115	3.5%	113	1.3%
	Hematology	–	–	1,708	52.3%	1,681	19.0%
	Histology	–	–	–	–	583	6.6%
	Immunology	–	–	–	–	–	–
	Microbiology	–	–	1,419	43.4%	1,300	14.7%
	Specimen Procurement, Receipt and Dispatch	–	–	–	–	1,715	19.4%
	Transfusion Medicine/Science	–	–	–	–	1,606	18.1%
	Point-of-Care Testing	–	–	–	–	–	–
	Other	–	–	–	–	–	–
Health Region	Région du Bas-Saint-Laurent	158	3.7%	161	3.8%	155	3.7%
	Région du Saguenay–Lac-Saint-Jean	174	4.1%	182	4.3%	179	4.2%
	Région de la Capitale Nationale	504	11.9%	495	11.8%	461	10.9%
	Région de la Mauricie et du Centre-du-Québec	266	6.3%	271	6.5%	268	6.4%
	Région de l'Estrie	200	4.7%	195	4.6%	197	4.7%
	Région de Montréal	1,331	31.5%	1,313	31.3%	1,366	32.4%
	Région de l'Outaouais	118	2.8%	117	2.8%	118	2.8%
	Région de l'Abitibi-Témiscamingue	105	2.5%	107	2.5%	105	2.5%
	Région de la Côte-Nord	76	1.8%	82	2.0%	82	1.9%
	Région du Nord-du-Québec	20	0.5%	20	0.5%	20	0.5%
	Région de la Gaspésie–Îles de la Madeleine	73	1.7%	74	1.8%	72	1.7%
	Région de Chaudière-Appalaches	142	3.4%	140	3.3%	139	3.3%
	Région de Laval	84	2.0%	83	2.0%	85	2.0%
	Région de Lanaudière	112	2.7%	116	2.8%	113	2.7%
	Région des Laurentides	206	4.9%	206	4.9%	211	5.0%
	Région de la Montérégie	463	11.0%	469	11.2%	469	11.1%
	Région du Nunavik	12	0.3%	12	0.3%	11	0.3%
	Région des Terres-Cries-de-la-Baie-James	0	0.0%	5	0.1%	5	0.1%
	Unknown**	179	4.2%	149	3.6%	157	3.7%

Notes

* Value suppressed in accordance with CIHI's privacy policy; cell value is from 1 to 4.

† Value suppressed to ensure confidentiality.

§ MLTs in Quebec who perform clinical chemistry, a part of medical biology, did not have to register with the Ordre professionnel des technologistes médicaux du Québec, which provided data to CIHI. Refer to the Under-Coverage section of the Methodological Notes for further details.

** There were 17 records in 2009 and 18 records in 2008 that stated a health region outside Quebec, although their actual location of employment was in Quebec. The health region is derived from the postal code submitted, which may represent a head office in another province. Due to this data quality issue, these 17 records in 2009 and 18 records in 2008 have been included under *unknown*.

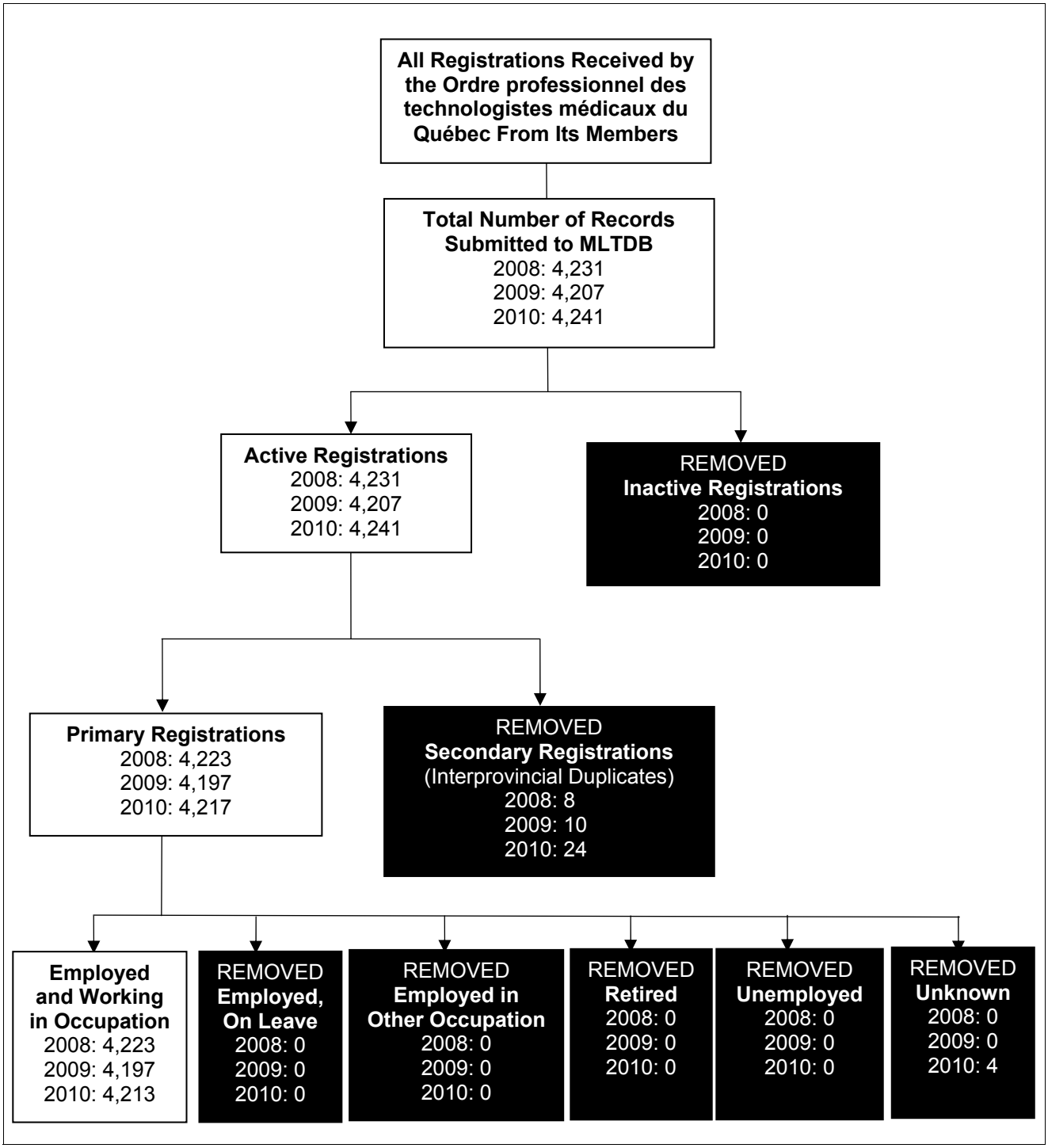
– Data is not applicable, not collected or does not meet data selection criteria.

Totals may not equal 100% due to rounding.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Data Flow From the Ordre professionnel des technologistes médicaux du Québec to CIHI



2010 Highlights for Medical Laboratory Technologists in Ontario

Workforce Supply and Demographics

- There were 6,819 registered MLTs in the Ontario workforce in 2010.
- The majority of MLTs in Ontario were female (82.1%), lower than the average of all regulated provinces combined (85.4%).
- The average age of the MLT workforce in Ontario was 47.7, older than the overall average age for the seven regulated provinces (45.1).
- In Ontario, 28.1% of working MLTs were 55 and older, which was higher than the combined average across the regulated provinces (22.4%).

Education and Certification

- In 2010, the majority (83.2%) of Ontario MLTs held a diploma as their basic level of education in medical laboratory technology.
- The majority (89.5%) of the Ontario workforce held one certification only.
- More than 10% of working MLTs in Ontario were foreign trained.
- Most (79.9%) MLTs employed in Ontario received their initial certification in general medical laboratory technology; this was lower than the combined average for all provinces and territories excluding Quebec (85.3%).

Primary Employment

- The majority (92.2%) of Ontario MLTs were permanent employees in their primary employment in 2010.
- Close to 80% of the MLT workforce provided diagnostic and therapeutic laboratory services in Ontario.
- The top three areas in which the Ontario MLT workforce practised were clinical chemistry (16.5%), microbiology (14.3%) and hematology (14.1%).

Ontario MLT Workforce Profile

Ontario—Total Medical Laboratory Technologist Workforce, 2008 to 2010

		2008		2009		2010	
		Count	Percentage	Count	Percentage	Count	Percentage
Total Registered Medical Laboratory Technologist Workforce		**6,552**		**6,765**		**6,819**	
Gender	Female	5,360	81.8%	5,570	82.3%	5,601	82.1%
	Male	1,192	18.2%	1,195	17.7%	1,218	17.9%
	Unknown	0	0.0%	0	0.0%	0	0.0%
Average Age	Years	47.4		47.4		47.7	
Age Group	<35	707	10.8%	781	11.5%	820	12.0%
	35–54	4,254	64.9%	4,229	62.5%	4,080	59.8%
	55+	1,589	24.3%	1,755	25.9%	1,919	28.1%
	Unknown	2	0.0%	0	0.0%	0	0.0%
Level of Basic Education in Medical Laboratory Technology	Diploma	–	–	–	–	5,673	83.2%
	Baccalaureate	–	–	–	–	885	13.0%
	Master's	–	–	–	–	6†	†
	Doctorate	–	–	–	–	*	*
	Unknown	–	–	–	–	196	2.9%
Location of Graduation for Basic Education in Medical Laboratory Technology	Canadian Trained	–	–	–	–	5,554	81.4%
	Foreign Trained	–	–	–	–	952	14.0%
	Unknown	–	–	–	–	313	4.6%
New Graduates	Yes—Graduated in Last Two Years	–	–	–	–	–	–
	No—Graduated More Than Two Years Ago	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Number of Certifications	Single Certification	–	–	–	–	6,101	89.5%
	Multiple Certifications	–	–	–	–	528	7.7%
	Unknown	–	–	–	–	190	2.8%
Initial Certification Discipline	General	3,459	52.8%	5,012	74.1%	5,448	79.9%
	Clinical Genetics	91	1.4%	90	1.3%	89	1.3%
	Diagnostic Cytology	247	3.8%	264	3.9%	169	2.5%
	Clinical Chemistry	135	2.1%	200	3.0%	157	2.3%
	Hematology	61	0.9%	0	0.0%	160	2.3%
	Histology	54	0.8%	294	4.3%	59	0.9%
	Microbiology	0	0.0%	343	5.1%	362	5.3%
	Transfusion Medicine/Science	0	0.0%	89	1.3%	49	0.7%
	Other‡	2,505	38.2%	190	2.8%	132	1.9%
	Unknown	0	0.0%	283	4.2%	194	2.8%
Advanced Registered Technologist	Yes	–	–	–	–	–	–
	No	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Multiple Employment Status	Single Employer	5,833	89.0%	6,128	90.6%	–	–
	Multiple Employers	701	10.7%	637	9.4%	–	–
	Unknown	18	0.3%	0	0.0%	–	–
Total Usual Weekly Hours of Work	<22.5	642	9.8%	–	–	–	–
	22.5–37.4	1,203	18.4%	–	–	–	–
	37.5+	4,707	71.8%	–	–	–	–
	Unknown	0	0.0%	–	–	–	–
Primary Employment							
Employment Category	Permanent Employee	5,952	90.8%	–	–	6,286	92.2%
	Temporary Employee	165	2.5%	–	–	199	2.9%
	Casual Employee	177	2.7%	–	–	204	3.0%
	Self-Employed	16	0.2%	–	–	13	0.2%
	Unknown	242	3.7%	–	–	117	1.7%
Full-Time/Part-Time Status	Full Time	–	–	–	–	–	–
	Part Time	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Place of Employment	General Hospital	4,669	71.3%	4,807	71.1%	–	–
	Residential Care Facility	*	*	6	0.1%	–	–
	Physician's Office/Other Professional Practice	7	0.1%	*	*	–	–
	Community Health Centre	1†	†	2†	†	–	–
	Public Health Laboratory/Department/Unit	312	4.8%	811	12.0%	–	–
	Centralized Diagnostic Laboratory Facility	777	11.9%	340	5.0%	–	–
	Free-Standing Diagnostic Laboratory	92	1.4%	103	1.5%	–	–
	Specimen Collection Centre	11	0.2%	11	0.2%	–	–
	Blood Transfusion Centre	219	3.3%	228	3.4%	–	–
	Other Laboratory Facility	48	0.7%	44	0.7%	–	–
	Post-Secondary Educational Institution	89	1.4%	99	1.5%	–	–
	Association/Government/Para-Governmental	35	0.5%	32	0.5%	–	–
	Industry, Manufacturing and Commercial	57	0.9%	62	0.9%	–	–
	Other	75	1.1%	68	1.0%	–	–
	Unknown	139	2.1%	130	1.9%	–	–

(continued on next page)

Ontario—Total Medical Laboratory Technologist Workforce, 2008 to 2010 (cont'd)

		2008		2009		2010	
		Count	Percentage	Count	Percentage	Count	Percentage
Position	Manager	311	4.7%	183	2.7%	–	–
	Supervisor	389	5.9%	273	4.0%	–	–
	Staff MLT	4,896	74.7%	5,081	75.1%	–	–
	Technical Specialist	247	3.8%	312	4.6%	–	–
	Laboratory Information System Specialist	85	1.3%	135	2.0%	–	–
	Consultant	29	0.4%	18	0.3%	–	–
	Educator	78	1.2%	83	1.2%	–	–
	Researcher	54	0.8%	139	2.1%	–	–
	Sales	7	0.1%	11	0.2%	–	–
	Other	251	3.8%	375	5.5%	–	–
	Unknown	205	3.1%	155	2.3%	–	–
Clinical Education/Preceptor Activity Indicator	Yes	–	–	–	–	–	–
	No	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Major Function	Diagnostic and Therapeutic Laboratory Services	5,207	79.5%	–	–	5,401	79.2%
	Administration	534	8.2%	–	–	556	8.2%
	Quality Management	145	2.2%	–	–	143	2.1%
	Teaching, Medical Laboratory Technology-Related	73	1.1%	–	–	80	1.2%
	Research	92	1.4%	–	–	104	1.5%
	Other Major Function	273	4.2%	–	–	319	4.7%
	Unknown	228	3.5%	–	–	216	3.2%
Area of Practice	Clinical Chemistry	2,997	16.5%	2,836	15.7%	1,890	16.5%
	Clinical Genetics	261	1.4%	281	1.6%	298	2.6%
	Diagnostic Cytology	299	1.7%	287	1.6%	300	2.6%
	Hematology	2,669	14.7%	2,583	14.3%	1,614	14.1%
	Histology	1,244	6.9%	1,208	6.7%	870	7.6%
	Immunology	147	0.8%	94	0.5%	520	4.5%
	Microbiology	2,144	11.8%	2,083	11.5%	1,635	14.3%
	Specimen Procurement, Receipt and Dispatch	2,588	14.3%	2,502	13.9%	1,085	9.5%
	Transfusion Medicine/Science	2,303	12.7%	2,225	12.3%	1,318	11.5%
	Point-of-Care Testing	137	0.8%	110	0.6%	335	2.9%
	Other	3,328	18.4%	3,836	21.3%	1,588	13.9%
Health Region	Erie St. Clair	–	–	245	3.6%	233	3.4%
	South West	–	–	672	9.9%	652	9.6%
	Waterloo Wellington	–	–	185	2.7%	175	2.6%
	Hamilton Niagara Haldimand Brant	–	–	716	10.6%	713	10.5%
	Central West	–	–	464	6.9%	468	6.9%
	Mississauga Halton	–	–	486	7.2%	495	7.3%
	Toronto	–	–	1,222	18.1%	1,242	18.2%
	Central	–	–	599	8.9%	601	8.8%
	Central East	–	–	343	5.1%	336	4.9%
	South East	–	–	296	4.4%	292	4.3%
	Champlain	–	–	709	10.5%	708	10.4%
	North Simcoe Muskoka	–	–	151	2.2%	164	2.4%
	North East	–	–	370	5.5%	371	5.4%
	North West	–	–	164	2.4%	167	2.4%
	Unknown	–	–	143	2.1%	202	3.0%

Notes

* Value suppressed in accordance with CIHI's privacy policy; cell value is from 1 to 4.

† Value suppressed to ensure confidentiality.

‡ Ontario collects more certification disciplines than are defined in the MLTDB Reference Guide. In 2008, those additional areas were mapped to the other certification area in the MLTDB. As a result, the certification area *other* for Ontario was 38.2% in 2008, a higher percentage than for the other jurisdictions. The province has made efforts to map the values of certification areas to the MLTDB standard, and the value for *other* in 2009 and 2010 has been successfully reduced.

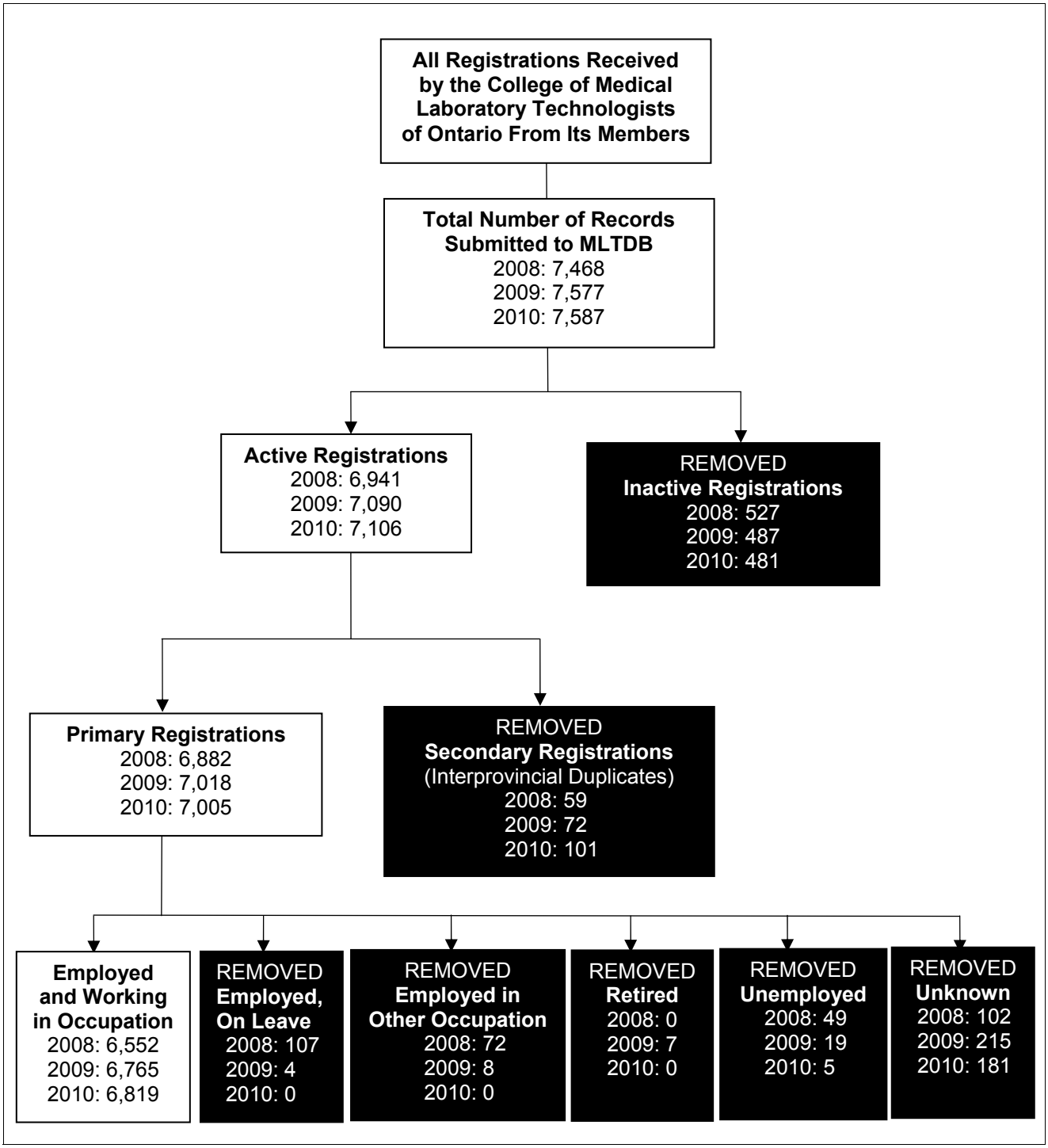
– Data is not applicable, not collected or does not meet data selection criteria.

Totals may not equal 100% due to rounding.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Data Flow From the College of Medical Laboratory Technologists of Ontario to CIHI



2010 Highlights for Medical Laboratory Technologists in Manitoba

Workforce Supply and Demographics

- There were 1,009 registered MLTs in the Manitoba workforce in 2010.
- The majority of the MLT workforce in Manitoba was female (85.5%), similar to the average for all regulated provinces (85.4%).
- The average age of the MLT workforce in Manitoba was 47.5, older than the overall average age for the seven regulated provinces (45.1).
- In Manitoba, 28.8% of working MLTs were 55 and older, which was the highest percentage across the seven regulated provinces.

Education and Certification

- In 2010, the majority (92.7%) of Manitoba MLTs held a diploma as their basic level of education in medical laboratory technology.
- Most (94.9%) of the MLT workforce in Manitoba received training in Canada, while approximately 4% were foreign-trained.
- Slightly more than 4% of Manitoba MLTs were new graduates who had graduated from a medical laboratory technology training program within the past two years.
- The majority (93.5%) of the Manitoba workforce held one certification only.
- Most (88.9%) MLTs employed in Manitoba received their initial certification in general medical laboratory technology, higher than the combined average for all provinces and territories excluding Quebec (85.3%).
- A small number (2.6%) of the Manitoba MLT workforce held advanced registered technologist (ART) certification.

Primary Employment

- The majority (90.4%) of Manitoba MLTs were permanent employees in their primary employment in 2010.
- Close to three-quarters (74.6%) of the Manitoba MLT workforce worked on a full-time basis.
- Approximately 60% of MLTs were employed in general hospitals in Manitoba, the second-lowest percentage among five regulated provinces (Nova Scotia, New Brunswick, Quebec, Manitoba and Alberta). A total of 9.9% of Manitoba MLTs were employed in centralized diagnostic laboratory facilities, while 7.8% worked in organizations associated with public health.
- More than three-quarters (75.4%) of Manitoba MLTs were staff MLTs, slightly lower than the average for five regulated provinces combined (78.3%) (Nova Scotia, New Brunswick, Quebec, Manitoba and Alberta).
- More than 85% of the MLT workforce provided diagnostic and therapeutic laboratory services in Manitoba.
- More than 90% of the MLT workforce worked in the Winnipeg Regional Health Authority.

Total Usual Weekly Hours of Work

- More than two-thirds (67.9%) of the workforce worked 37.5 hours or longer per week.

Manitoba MLT Workforce Profile

Manitoba—Total Medical Laboratory Technologist Workforce, 2008 to 2010

		2008		2009		2010	
		Count	Percentage	Count	Percentage	Count	Percentage
Total Registered Medical Laboratory Technologist Workforce		**1,006**		**1,001**		**1,009**	
Gender	Female	847	84.2%	851	85.0%	863	85.5%
	Male	158	15.7%	150	15.0%	146	14.5%
	Unknown	1	0.1%	0	0.0%	0	0.0%
Average Age	Years	47.1		47.4		47.5	
Age Group	<35	126	12.5%	136	13.6%	150	14.9%
	35–54	604	60.0%	589	58.8%	568	56.3%
	55+	267	26.5%	276	27.6%	291	28.8%
	Unknown	9	0.9%	0	0.0%	0	0.0%
Level of Basic Education in Medical Laboratory Technology	Diploma	–	–	–	–	935	92.7%
	Baccalaureate	–	–	–	–	6†	†
	Master's	–	–	–	–	*	*
	Doctorate	–	–	–	–	0	0.0%
	Unknown	–	–	–	–	4	0.4%
Location of Graduation for Basic Education in Medical Laboratory Technology	Canadian Trained	956	95.0%	940	93.9%	958	94.9%
	Foreign Trained	42	4.2%	43	4.3%	43	4.3%
	Unknown	8	0.8%	18	1.8%	8	0.8%
New Graduates	Yes—Graduated in Last Two Years	–	–	28	2.8%	44	4.4%
	No—Graduated More Than Two Years Ago	–	–	938	93.7%	963	95.4%
	Unknown	–	–	35	3.5%	2	0.2%
Number of Certifications	Single Certification	–	–	–	–	943	93.5%
	Multiple Certifications	–	–	–	–	34	3.4%
	Unknown	–	–	–	–	32	3.2%
Initial Certification Discipline	General	–	–	–	–	897	88.9%
	Clinical Genetics	–	–	–	–	9	0.9%
	Diagnostic Cytology	–	–	–	–	36	3.6%
	Clinical Chemistry	–	–	–	–	5	0.5%
	Hematology	–	–	–	–	*	*
	Histology	–	–	–	–	*	*
	Microbiology	–	–	–	–	13	1.3%
	Transfusion Medicine/Science	–	–	–	–	6	0.6%
	Other	–	–	–	–	5	0.5%
	Unknown	–	–	–	–	32	3.2%
Advanced Registered Technologist	Yes	–	–	–	–	26	2.6%
	No	–	–	–	–	951	94.3%
	Unknown	–	–	–	–	32	3.2%
Multiple Employment Status	Single Employer	999	99.3%	–	–	979	97.0%
	Multiple Employers	0	0.0%	–	–	30	3.0%
	Unknown	7	0.7%	–	–	0	0.0%
Total Usual Weekly Hours of Work	<22.5	–	–	433	43.3%	146	14.5%
	22.5–37.4	–	–	131	13.1%	178	17.6%
	37.5+	–	–	437	43.7%	685	67.9%
	Unknown	–	–	0	0.0%	0	0.0%
Primary Employment (Counts After Exclusion of Non-Response for 2009 [297, 29.7%])				**704**			
Employment Category	Permanent Employee	710	70.6%	–	–	912	90.4%
	Temporary Employee	286	28.4%	–	–	28	2.8%
	Casual Employee	0	0.0%	–	–	61	6.0%
	Self-Employed	0	0.0%	–	–	0	0.0%
	Unknown	10	1.0%	–	–	8	0.8%
Full-Time/Part-Time Status	Full Time	686	68.2%	–	–	753	74.6%
	Part Time	284	28.2%	–	–	254	25.2%
	Unknown	36	3.6%	–	–	2	0.2%
Place of Employment	General Hospital	–	–	425	60.4%	608	60.3%
	Residential Care Facility	–	–	*	*	*	*
	Physician's Office/Other Professional Practice	–	–	*	*	23	2.3%
	Community Health Centre	–	–	10	1.4%	28	2.8%
	Public Health Laboratory/Department/Unit	–	–	60	8.5%	79	7.8%
	Centralized Diagnostic Laboratory Facility	–	–	59	8.4%	100	9.9%
	Free-Standing Diagnostic Laboratory	–	–	51	7.2%	38	3.8%
	Specimen Collection Centre	–	–	0	0.0%	*	*
	Blood Transfusion Centre	–	–	42	6.0%	64	6.3%
	Other Laboratory Facility	–	–	20	2.8%	17	1.7%
	Post-Secondary Educational Institution	–	–	9	1.3%	14	1.4%
	Association/Government/Para-Governmental	–	–	6	0.9%	20	2.0%
	Industry, Manufacturing and Commercial	–	–	*	*	*	*
	Other	–	–	9	1.3%	9	0.9%
	Unknown	–	–	5	0.7%	2	0.2%

(continued on next page)

Manitoba—Total Medical Laboratory Technologist Workforce, 2008 to 2010 (cont'd)

		2008		2009		2010	
		Count	Percentage	Count	Percentage	Count	Percentage
Position	Manager	–	–	23	3.3%	24	2.4%
	Supervisor	–	–	78	11.1%	129	12.8%
	Staff MLT	–	–	523	74.3%	761	75.4%
	Technical Specialist	–	–	46	6.5%	34	3.4%
	Laboratory Information System Specialist	–	–	*	*	8	0.8%
	Consultant	–	–	0	0.0%	*	*
	Educator	–	–	13	1.8%	20	2.0%
	Researcher	–	–	*	*	*	*
	Sales	–	–	*	*	*	*
	Other	–	–	*	*	20	2.0%
	Unknown	–	–	11	1.6%	1	0.1%
Clinical Education/Preceptor Activity Indicator	Yes	–	–	80	11.4%	352	34.9%
	No	–	–	624	88.6%	623	61.7%
	Unknown	–	–	0	0.0%	34	3.4%
Major Function	Diagnostic and Therapeutic Laboratory Services	–	–	577	82.0%	867	85.9%
	Administration	–	–	46	6.5%	53	5.3%
	Quality Management	–	–	36	5.1%	20	2.0%
	Teaching, Medical Laboratory Technology-Related	–	–	12	1.7%	35	3.5%
	Research	–	–	*	*	8	0.8%
	Other Major Function	–	–	7†	†	24	2.4%
	Unknown	–	–	23	3.3%	2	0.2%
Area of Practice	Clinical Chemistry	431	16.5%	231	17.4%	–	–
	Clinical Genetics	39	1.5%	24	1.8%	–	–
	Diagnostic Cytology	43	1.6%	22	1.7%	–	–
	Hematology	445	17.0%	223	16.8%	–	–
	Histology	67	2.6%	32	2.4%	–	–
	Immunology	26	1.0%	26	2.0%	–	–
	Microbiology	279	10.7%	147	11.1%	–	–
	Specimen Procurement, Receipt and Dispatch	417	15.9%	225	17.0%	–	–
	Transfusion Medicine/Science	246	9.4%	110	8.3%	–	–
	Point-of-Care Testing	0	0.0%	0	0.0%	–	–
	Other	623	23.8%	284	21.5%	–	–
Health Region	Winnipeg Regional Health Authority	–	–	–	–	927	91.9%
	Brandon Regional Health Authority	–	–	–	–	69	6.8%
	North Eastman Regional Health Authority	–	–	–	–	*	*
	South Eastman Regional Health Authority	–	–	–	–	0	0.0%
	Interlake Regional Health Authority	–	–	–	–	*	*
	Central Regional Health Authority	–	–	–	–	*	*
	Assiniboine Regional Health Authority	–	–	–	–	0	0.0%
	Parkland Regional Health Authority	–	–	–	–	0	0.0%
	NOR-MAN Regional Health Authority	–	–	–	–	*	*
	Burntwood Regional Health Authority	–	–	–	–	*	*
	Churchill Regional Health Authority	–	–	–	–	0	0.0%
	Unknown	–	–	–	–	5	0.5%

Notes

* Value suppressed in accordance with CIHI's privacy policy; cell value is from 1 to 4.

† Value suppressed to ensure confidentiality.

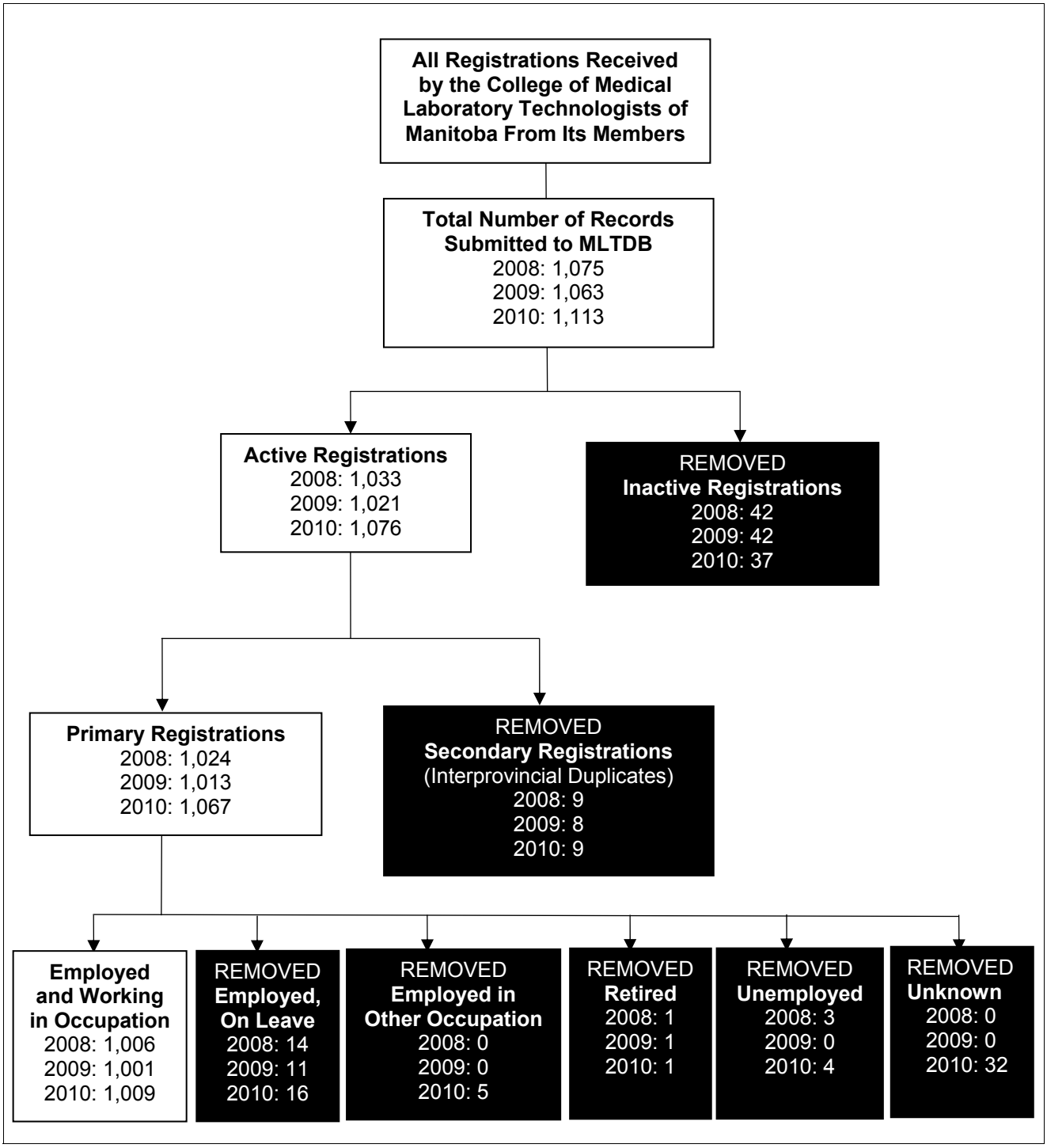
– Data is not applicable, not collected or does not meet data selection criteria.

Totals may not equal 100% due to rounding.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Data Flow From the College of Medical Laboratory Technologists of Manitoba to CIHI



2010 Highlights for Medical Laboratory Technologists in Saskatchewan

Workforce Supply and Demographics

- There were 874 registered MLTs in the Saskatchewan workforce in 2010.
- The majority of MLTs in Saskatchewan were female (92.8%), higher than the average of all regulated provinces (85.4%).
- The average age of MLTs in Saskatchewan was 47.1, older than the overall average age for the seven regulated provinces (45.1).
- In Saskatchewan, 23.9% of working MLTs were 55 and older, slightly higher than the combined average across all the regulated provinces (22.4%).

Education and Certification (for 796 MLTs)

Please note: A total of 78 registrants (8.9% of the provincial total) who are part of the MLT workforce but who did not provide data on most education and certification-related data elements have been excluded from the following statistics. When used below, the term "workforce" refers to 796 MLTs (a reduction of 78 from the total actual workforce of 874 MLTs).

- In 2010, the majority (92.1%) of the Saskatchewan workforce held a diploma as their basic level of education in medical laboratory technology.
- Close to 4% of the Saskatchewan MLT workforce were new graduates who had graduated from a medical laboratory technology training program within the past two years.
- The majority (94.5%) of the Saskatchewan workforce held one certification only.
- Most (93.3%) MLTs employed in Saskatchewan received their initial certification in general medical laboratory technology, higher than the combined average for all provinces and territories excluding Quebec (85.3%).
- Slightly less than 4% of the Saskatchewan MLT workforce obtained advanced registered technologist (ART) certification.

Saskatchewan MLT Workforce Profile

Saskatchewan—Total Medical Laboratory Technologist Workforce, 2008 to 2010

		2008		2009		2010	
		Count	Percentage	Count	Percentage	Count	Percentage
Total Registered Medical Laboratory Technologist Workforce		**913**		**864**		**874**	
Gender	Female	–	–	805	93.2%	811	92.8%
	Male	–	–	59	6.8%	63	7.2%
	Unknown	–	–	0	0.0%	0	0.0%
Average Age	Years	46.0		46.7		47.1	
Age Group	<35	126	13.8%	115	13.3%	119	13.6%
	35–54	585	64.1%	542	62.7%	522	59.7%
	55+	176	19.3%	183	21.2%	209	23.9%
	Unknown	26	2.8%	24	2.8%	24	2.7%
Education and Certification (Counts After Exclusion of Non-Response for 2010 [78, 8.9%])						796	
Level of Basic Education in Medical Laboratory Technology	Diploma	–	–	–	–	733	92.1%
	Baccalaureate	–	–	–	–	60	7.5%
	Master's	–	–	–	–	*	*
	Doctorate	–	–	–	–	*	*
	Unknown	–	–	–	–	1	0.1%
Location of Graduation for Basic Education in Medical Laboratory Technology	Canadian Trained	–	–	–	–	78†	†
	Foreign Trained	–	–	–	–	*	*
	Unknown	–	–	–	–	10	1.3%
New Graduates	Yes—Graduated in Last Two Years	–	–	–	–	30	3.8%
	No—Graduated More Than Two Years Ago	–	–	–	–	766	96.2%
	Unknown	–	–	–	–	0	0.0%
Number of Certifications	Single Certification	–	–	–	–	752	94.5%
	Multiple Certifications	–	–	–	–	42	5.3%
	Unknown	–	–	–	–	2	0.3%
Initial Certification Discipline	General	–	–	–	–	743	93.3%
	Clinical Genetics	–	–	–	–	*	*
	Diagnostic Cytology	–	–	–	–	25	3.1%
	Clinical Chemistry	–	–	–	–	5	0.6%
	Hematology	–	–	–	–	5	0.6%
	Histology	–	–	–	–	*	*
	Microbiology	–	–	–	–	5	0.6%
	Transfusion Medicine/Science	–	–	–	–	0	0.0%
	Other	–	–	–	–	6	0.8%
	Unknown	–	–	–	–	1	0.1%
Advanced Registered Technologist	Yes	–	–	–	–	31	3.9%
	No	–	–	–	–	763	95.9%
	Unknown	–	–	–	–	2	0.3%
Multiple Employment Status	Single Employer	–	–	–	–	–	–
	Multiple Employers	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Total Usual Weekly Hours of Work	<22.5	–	–	–	–	–	–
	22.5–37.4	–	–	–	–	–	–
	37.5+	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Primary Employment (Counts After Exclusion of Non-Response for 2009 [337, 39.0%])				527			
Employment Category	Permanent Employee	–	–	461	87.5%	–	–
	Temporary Employee	–	–	1†	†	–	–
	Casual Employee	–	–	44	8.3%	–	–
	Self-Employed	–	–	*	*	–	–
	Unknown	–	–	10	1.9%	–	–
Full-Time/Part-Time Status	Full Time	–	–	345	65.5%	–	–
	Part Time	–	–	172	32.6%	–	–
	Unknown	–	–	10	1.9%	–	–
Place of Employment	General Hospital	–	–	382	72.5%	–	–
	Residential Care Facility	–	–	*	*	–	–
	Physician's Office/Other Professional Practice Office	–	–	*	*	–	–
	Community Health Centre	–	–	21	4.0%	–	–
	Public Health Laboratory/Department/Unit	–	–	1†	†	–	–
	Centralized Diagnostic Laboratory Facility	–	–	29	5.5%	–	–
	Free-Standing Diagnostic Laboratory	–	–	*	*	–	–
	Specimen Collection Centre	–	–	8	1.5%	–	–
	Blood Transfusion Centre	–	–	10	1.9%	–	–
	Other Laboratory Facility	–	–	14	2.7%	–	–
	Post-Secondary Educational Institution	–	–	14	2.7%	–	–
	Association/Government/Para-Governmental	–	–	7	1.3%	–	–
	Industry, Manufacturing and Commercial	–	–	*	*	–	–
	Other	–	–	14	2.7%	–	–
	Unknown	–	–	10	1.9%	–	–

(continued on next page)

Saskatchewan—Total Medical Laboratory Technologist Workforce, 2008 to 2010 (cont'd)

		2008		2009		2010	
		Count	Percentage	Count	Percentage	Count	Percentage
Position	Manager	–	–	22	4.2%	–	–
	Supervisor	–	–	42	8.0%	–	–
	Staff MLT	–	–	403	76.5%	–	–
	Technical Specialist	–	–	†	†	–	–
	Laboratory Information System Specialist	–	–	5	0.9%	–	–
	Consultant	–	–	*	*	–	–
	Educator	–	–	1†	†	–	–
	Researcher	–	–	*	*	–	–
	Sales	–	–	0	0.0%	–	–
	Other	–	–	24	4.6%	–	–
	Unknown	–	–	10	1.9%	–	–
Clinical Education/Preceptor Activity Indicator	Yes	–	–	201	38.1%	–	–
	No	–	–	315	59.8%	–	–
	Unknown	–	–	11	2.1%	–	–
Major Function	Diagnostic and Therapeutic Laboratory Services	–	–	454	86.1%	–	–
	Administration	–	–	14	2.7%	–	–
	Quality Management	–	–	*	*	–	–
	Teaching, Medical Laboratory Technology–Related	–	–	17	3.2%	–	–
	Research	–	–	*	*	–	–
	Other Major Function	–	–	27	5.1%	–	–
	Unknown	–	–	10	1.9%	–	–
Area of Practice	Clinical Chemistry	–	–	277	17.6%	–	–
	Clinical Genetics	–	–	*	*	–	–
	Diagnostic Cytology	–	–	19	1.2%	–	–
	Hematology	–	–	288	18.3%	–	–
	Histology	–	–	55	3.5%	–	–
	Immunology	–	–	7†	†	–	–
	Microbiology	–	–	167	10.6%	–	–
	Specimen Procurement, Receipt and Dispatch	–	–	280	17.8%	–	–
	Transfusion Medicine/Science	–	–	216	13.7%	–	–
	Point-of-Care Testing	–	–	12†	†	–	–
	Other	–	–	79	5.0%	–	–
Health Region	Sun Country Regional Health Authority	–	–	–	–	–	–
	Five Hills Regional Health Authority	–	–	–	–	–	–
	Cypress Regional Health Authority	–	–	–	–	–	–
	Regina Qu'Appelle Regional Health Authority	–	–	–	–	–	–
	Sunrise Regional Health Authority	–	–	–	–	–	–
	Saskatoon Regional Health Authority	–	–	–	–	–	–
	Heartland Regional Health Authority	–	–	–	–	–	–
	Kelsey Trail Regional Health Authority	–	–	–	–	–	–
	Prince Albert Parkland Regional Health Authority	–	–	–	–	–	–
	Prairie North Regional Health Authority	–	–	–	–	–	–
	Mamawetan Churchill River Regional Health Authority	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–

Notes

* Value suppressed in accordance with CIHI's privacy policy; cell value is from 1 to 4.

† Value suppressed to ensure confidentiality.

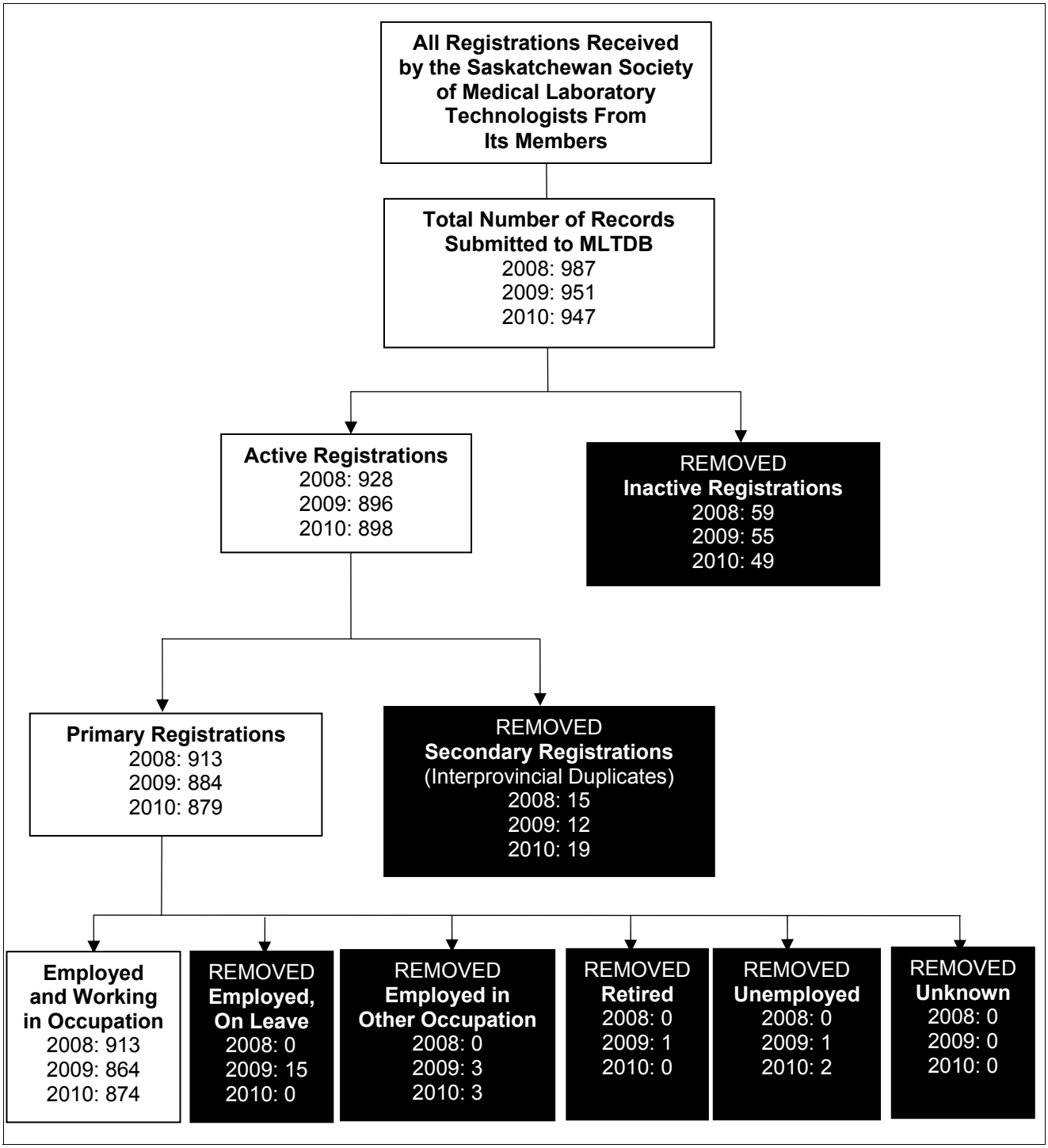
– Data is not applicable, not collected or does not meet data selection criteria.

Totals may not equal 100% due to rounding.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Data Flow From the Saskatchewan Society of Medical Laboratory Technologists to CIHI



2010 Highlights for Medical Laboratory Technologists in Alberta

Workforce Supply and Demographics

- There were 2,251 registered MLTs in the Alberta workforce in 2010.
- The majority of the MLT workforce in Alberta was female (88.9%), higher than the average of all regulated provinces (85.4%).
- The average age of MLTs in Alberta was 45.2, slightly older than the overall average age for the seven regulated provinces (45.1).
- In Alberta, 22.2% of working MLTs were 55 and older, similar to the combined average across all the regulated provinces (22.4%).

Education and Certification

- In 2010, the majority of Alberta MLTs held a diploma as their basic level of education in medical laboratory technology.
- Most (88.7%) MLTs employed in Alberta received their initial certification in general medical laboratory technology, higher than the combined average for all provinces and territories excluding Quebec (85.3%).

Primary Employment (for 2,191 MLTs)

Please note: A total of 60 registrants (2.7% of the provincial total) who were a part of the MLT workforce but who did not provide data on most employment-related data elements have been excluded from the following statistics. When used below, the term “workforce” refers to 2,191 MLTs (a reduction of 60 from the total actual workforce of 2,251 MLTs).

- The majority (93.2%) of the Alberta MLT workforce worked for one employer.
- Most of the Alberta MLT workforce (89.1%) was permanently employed.
- Compared with five regulated provinces combined (75.8%) (Nova Scotia, New Brunswick, Quebec, Manitoba and Alberta), Alberta had the lowest proportion (49.6%) of the MLT workforce working in general hospitals, reflecting its different organizational structure and unique way of delivering laboratory services, compared with other provinces. Centralized diagnostic laboratories employed more than one-fifth (21%) of the MLT workforce. The two work settings combined employed more than 70% of the workforce in the province.
- Almost three-quarters (73.8%) of the Alberta MLT workforce were staff MLTs, the lowest percentage across five regulated provinces (Nova Scotia, New Brunswick, Quebec, Manitoba and Alberta).

- MLT managers accounted for 3.2% of the Alberta MLT workforce. For both managers and supervisors combined, the proportion increased to 12.7%, three percentage points higher than the average (9.2%) across five regulated provinces (Nova Scotia, New Brunswick, Quebec, Manitoba and Alberta).
- Nearly half (46.7%) of the Alberta MLT workforce participated in clinical education/preceptor activities at their primary employment.
- The top three areas of practice in which the Alberta MLT workforce was practising were clinical chemistry (18.2%), hematology (17.2%) and transfusion medicine/science (12%).

Alberta MLT Workforce Profile

Alberta—Total Medical Laboratory Technologist Workforce, 2008 to 2010

		2008		2009		2010	
		Count	Percentage	Count	Percentage	Count	Percentage
Total Registered Medical Laboratory Technologist Workforce		**2,215**		**2,223**		**2,251**	
Gender	Female	1,979	89.3%	1,985	89.3%	2,002	88.9%
	Male	236	10.7%	238	10.7%	249	11.1%
	Unknown	0	0.0%	0	0.0%	0	0.0%
Average Age	Years	44.0		44.9		45.2	
Age Group	<35	450	20.3%	419	18.8%	424	18.8%
	35–54	1,412	63.7%	1,364	61.4%	1,327	59.0%
	55+	352	15.9%	438	19.7%	499	22.2%
	Unknown	1	0.0%	2	0.1%	1	0.0%
Level of Basic	Diploma	–	–	–	–	2,147	95.4%
	Baccalaureate	–	–	–	–	0	0.0%
	Master's	–	–	–	–	0	0.0%
	Doctorate	–	–	–	–	0	0.0%
	Unknown	–	–	–	–	104	4.6%
Location of Graduation for Basic Education in Medical Laboratory Technology	Canadian Trained	–	–	–	–	–	–
	Foreign Trained	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
New Graduates	Yes—Graduated in Last Two Years	–	–	–	–	–	–
	No—Graduated More Than Two Years Ago	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Number of Certifications	Single Certification	–	–	–	–	–	–
	Multiple Certifications	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Initial Certification Discipline	General	1,977	89.3%	1,984	89.2%	1,997	88.7%
	Clinical Genetics	28	1.3%	29	1.3%	28	1.2%
	Diagnostic Cytology	94	4.2%	93	4.2%	100	4.4%
	Clinical Chemistry	10	0.5%	11	0.5%	11	0.5%
	Hematology	18	0.8%	18	0.8%	17	0.8%
	Histology	10	0.5%	10	0.4%	11	0.5%
	Microbiology	32	1.4%	32	1.4%	29	1.3%
	Transfusion Medicine/Science	*	*	*	*	*	*
	Other	†	†	†	†	5†	†
	Unknown	36	1.6%	36	1.6%	0	0.0%
Advanced Registered Technologist	Yes	–	–	–	–	–	–
	No	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Counts After Exclusion of Non-Response for 2010 (60, 2.7%)						2,191	
Multiple Employment Status	Single Employer	2,137	96.5%	2,064	92.8%	2,043	93.2%
	Multiple Employers	18	0.8%	150	6.7%	148	6.8%
	Unknown	60	2.7%	9	0.4%	0	0.0%
Total Usual Weekly Hours of Work	<22.5	–	–	–	–	–	–
	22.5–37.4	–	–	–	–	–	–
	37.5+	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Primary Employment							
Employment Category	Permanent Employee	1,955	88.3%	–	–	1,953	89.1%
	Temporary Employee	*	*	–	–	0	0.0%
	Casual Employee	14†	†	–	–	13†	†
	Self-Employed	0	0.0%	–	–	*	*
	Unknown	109	4.9%	–	–	101	4.6%
Full-Time/Part-Time Status	Full Time	–	–	–	–	–	–
	Part Time	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–

(continued on next page)

Alberta—Total Medical Laboratory Technologist Workforce, 2008 to 2010 (cont'd)

		2008		2009		2010	
		Count	Percentage	Count	Percentage	Count	Percentage
Place of Employment	General Hospital	1,137	51.3%	1,130	50.8%	1,087	49.6%
	Residential Care Facility	*	*	*	*	*	*
	Physician's Office/Other Professional Practice	11	0.5%	11	0.5%	8	0.4%
	Community Health Centre	67	3.0%	65	2.9%	71	3.2%
	Public Health Laboratory/Department/Unit	134	6.0%	134	6.0%	132	6.0%
	Centralized Diagnostic Laboratory Facility	495	22.3%	492	22.1%	460	21.0%
	Free-Standing Diagnostic Laboratory	75	3.4%	75	3.4%	87	4.0%
	Specimen Collection Centre	*	*	*	*	*	*
	Blood Transfusion Centre	64	2.9%	6†	†	66	3.0%
	Other Laboratory Facility	62	2.8%	62	2.8%	78	3.6%
	Post-Secondary Educational Institution	50	2.3%	4†	†	55	2.5%
	Association/Government/Para-Governmental	8	0.4%	9	0.4%	14	0.6%
	Industry, Manufacturing and Commercial	8	0.4%	8	0.4%	7	0.3%
	Other	39	1.8%	38	1.7%	44	2.0%
	Unknown	60	2.7%	84	3.8%	75	3.4%
Position	Manager	67	3.0%	66	3.0%	70	3.2%
	Supervisor	217	9.8%	213	9.6%	208	9.5%
	Staff MLT	1,650	74.5%	1,640	73.8%	1,618	73.8%
	Technical Specialist	34	1.5%	33	1.5%	41	1.9%
	Laboratory Information System Specialist	23	1.0%	23	1.0%	22	1.0%
	Consultant	8	0.4%	8	0.4%	7	0.3%
	Educator	52	2.3%	52	2.3%	48	2.2%
	Researcher	1†	†	†	†	†	†
	Sales	*	*	*	*	*	*
	Other	93	4.2%	94	4.2%	95	4.3%
	Unknown	60	2.7%	84	3.8%	75	3.4%
Clinical Education/ Preceptor Activity Indicator	Yes	924	41.7%	914	41.1%	1,023	46.7%
	No	1,206	54.4%	1,200	54.0%	1,091	49.8%
	Unknown	85	3.8%	109	4.9%	77	3.5%
Major Function	Diagnostic and Therapeutic Laboratory Services	1,703	76.9%	–	–	–	–
	Administration	83	3.7%	–	–	–	–
	Quality Management	60	2.7%	–	–	–	–
	Teaching, Medical Laboratory Technology-Related	69	3.1%	–	–	–	–
	Research	25	1.1%	–	–	–	–
	Other Major Function	179	8.1%	–	–	–	–
	Unknown	96	4.3%	–	–	–	–
Area of Practice	Clinical Chemistry	90	3.3%	752	18.0%	766	18.2%
	Clinical Genetics	26	1.0%	44	1.1%	51	1.2%
	Diagnostic Cytology	94	3.5%	99	2.4%	100	2.4%
	Hematology	740	27.5%	737	17.6%	721	17.2%
	Histology	223	8.3%	208	5.0%	210	5.0%
	Immunology	6	0.2%	120	2.9%	121	2.9%
	Microbiology	54	2.0%	451	10.8%	468	11.1%
	Specimen Procurement, Receipt and Dispatch	398	14.8%	405	9.7%	397	9.4%
	Transfusion Medicine/Science	536	19.9%	522	12.5%	505	12.0%
	Point-of-Care Testing	207	7.7%	205	4.9%	207	4.9%
	Other	316	11.7%	642	15.3%	656	15.6%
Health Region	South Zone	–	–	–	–	–	–
	Calgary Zone	–	–	–	–	–	–
	Central Zone	–	–	–	–	–	–
	Edmonton Zone	–	–	–	–	–	–
	North Zone	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–

Notes

* Value suppressed in accordance with CIHI's privacy policy; cell value is from 1 to 4.

† Value suppressed to ensure confidentiality.

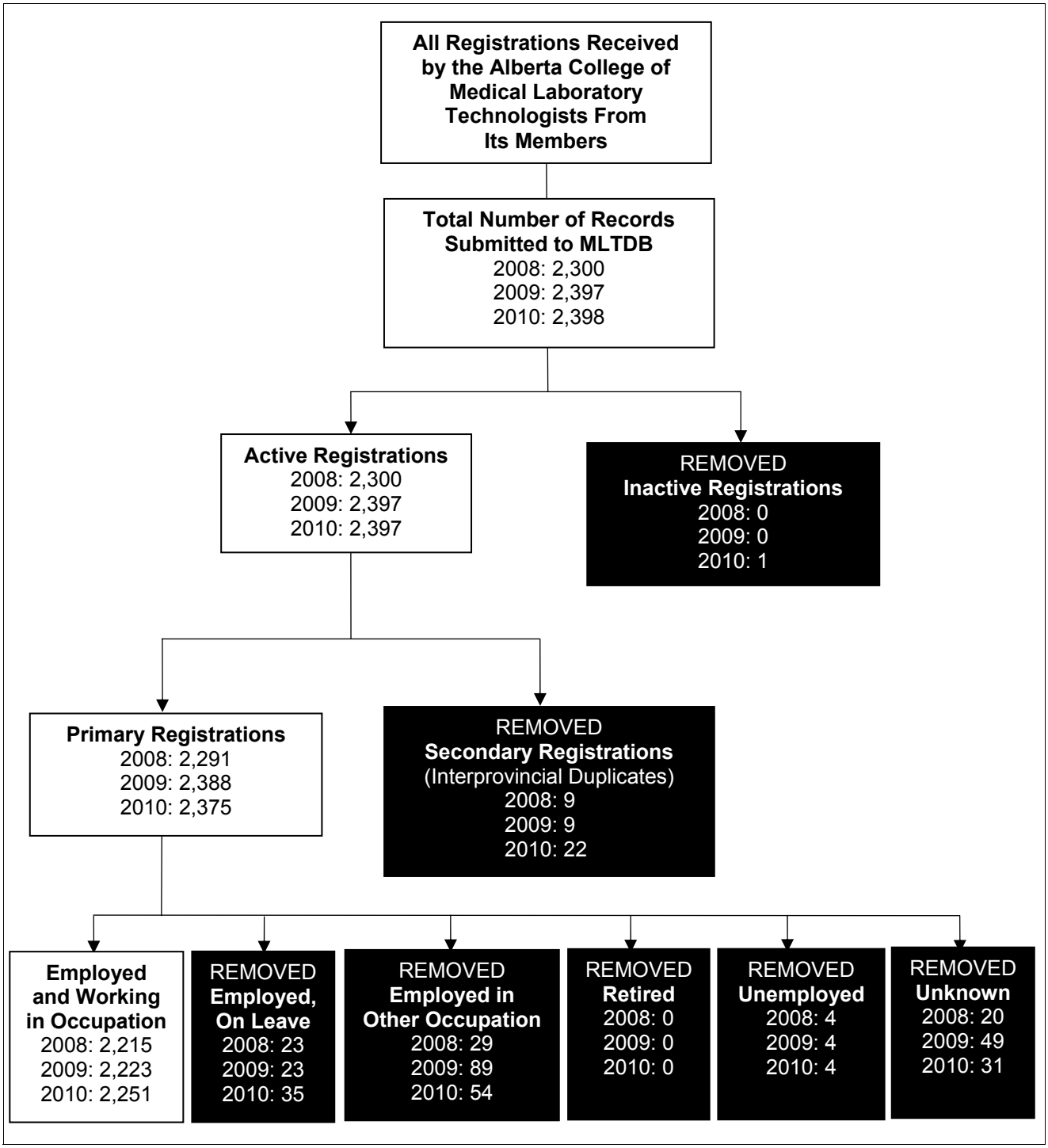
– Data is not applicable, not collected or does not meet data selection criteria.

Totals may not equal 100% due to rounding.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Data Flow From the Alberta College of Medical Laboratory Technologists to CIHI



2010 Highlights for Medical Laboratory Technologists in Unregulated Provinces and Territories

Newfoundland and Labrador, P.E.I., B.C., Yukon, the Northwest Territories and Nunavut

- In 2010, in the unregulated provinces and territories, the following numbers of MLTs were in the MLT workforces and were registered with the CSMLS: Newfoundland and Labrador, 482; P.E.I., 112; B.C., 2,245; Yukon, 19; the Northwest Territories, 24; and Nunavut, 8 (for a total of 51 in the territories).
- An MLT certification in general medical laboratory technology was the initial certification held by most of the registered MLT workforce in Newfoundland and Labrador (89.4%), P.E.I. (92.9%), B.C. (88.5%) and the territories (100%).

Newfoundland and Labrador MLT Workforce Profile

Newfoundland and Labrador—Total Medical Laboratory Technologist Workforce, 2008 to 2010

		2008		2009		2010	
		Count	Percentage	Count	Percentage	Count	Percentage
Total Registered Medical Laboratory Technologist Workforce		**393**		**347**		**482**	
Gender	Female	–	–	–	–	–	–
	Male	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Average Age	Years	–		–		–	
Age Group	<35	–	–	–	–	–	–
	35–54	–	–	–	–	–	–
	55+	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Level of Basic Education in Medical Laboratory Technology	Diploma	–	–	–	–	–	–
	Baccalaureate	–	–	–	–	–	–
	Master's	–	–	–	–	–	–
	Doctorate	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Location of Graduation for Basic Education in Medical Laboratory Technology	Canadian Trained	–	–	–	–	–	–
	Foreign Trained	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
New Graduates	Yes—Graduated in Last Two Years	–	–	–	–	–	–
	No—Graduated More Than Two Years Ago	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Number of Certifications	Single Certification	–	–	–	–	–	–
	Multiple Certifications	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Initial Certification Discipline	General	345	87.8%	313	90.2%	431	89.4%
	Clinical Genetics	*	*	*	*	*	*
	Diagnostic Cytology	*	*	*	*	5	1.0%
	Clinical Chemistry	16	4.1%	8	2.3%	15	3.1%
	Hematology	14	3.6%	7	2.0%	13	2.7%
	Histology	*	*	0	0.0%	0	0.0%
	Microbiology	12	3.1%	10	2.9%	10	2.1%
	Transfusion Medicine/Science	*	*	*	*	*	*
	Other	0	0.0%	0	0.0%	0	0.0%
	Unknown	0	0.0%	1	0.3%	1	0.2%
Advanced Registered Technologist	Yes	–	–	–	–	–	–
	No	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Multiple Employment Status	Single Employer	–	–	–	–	–	–
	Multiple Employers	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Total Usual Weekly Hours of Work	<22.5	–	–	–	–	–	–
	22.5–37.4	–	–	–	–	–	–
	37.5+	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Primary Employment							
Employment Category	Permanent Employee	–	–	–	–	–	–
	Temporary Employee	–	–	–	–	–	–
	Casual Employee	–	–	–	–	–	–
	Self-Employed	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Full-Time/Part-Time Status	Full Time	–	–	–	–	–	–
	Part Time	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Place of Employment	General Hospital	–	–	–	–	–	–
	Residential Care Facility	–	–	–	–	–	–
	Physician's Office/Other Professional Practice Office	–	–	–	–	–	–
	Community Health Centre	–	–	–	–	–	–
	Public Health Laboratory/Department/Unit	–	–	–	–	–	–
	Centralized Diagnostic Laboratory Facility	–	–	–	–	–	–
	Free-Standing Diagnostic Laboratory	–	–	–	–	–	–
	Specimen Collection Centre	–	–	–	–	–	–
	Blood Transfusion Centre	–	–	–	–	–	–
	Other Laboratory Facility	–	–	–	–	–	–
	Post-Secondary Educational Institution	–	–	–	–	–	–
	Association/Government/Para-Governmental	–	–	–	–	–	–
	Industry, Manufacturing and Commercial	–	–	–	–	–	–
	Other	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–

(continued on next page)

Newfoundland and Labrador—Total Medical Laboratory Technologist Workforce, 2008 to 2010 (cont'd)

		2008		2009		2010	
		Count	Percentage	Count	Percentage	Count	Percentage
Position	Manager	–	–	–	–	–	–
	Supervisor	–	–	–	–	–	–
	Staff MLT	–	–	–	–	–	–
	Technical Specialist	–	–	–	–	–	–
	Laboratory Information System Specialist	–	–	–	–	–	–
	Consultant	–	–	–	–	–	–
	Educator	–	–	–	–	–	–
	Researcher	–	–	–	–	–	–
	Sales	–	–	–	–	–	–
	Other	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Clinical Education/Preceptor Activity Indicator	Yes	–	–	–	–	–	–
	No	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Major Function	Diagnostic and Therapeutic Laboratory Services	–	–	–	–	–	–
	Administration	–	–	–	–	–	–
	Quality Management	–	–	–	–	–	–
	Teaching, Medical Laboratory Technology-Related	–	–	–	–	–	–
	Research	–	–	–	–	–	–
	Other Major Function	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Area of Practice	Clinical Chemistry	–	–	–	–	–	–
	Clinical Genetics	–	–	–	–	–	–
	Diagnostic Cytology	–	–	–	–	–	–
	Hematology	–	–	–	–	–	–
	Histology	–	–	–	–	–	–
	Immunology	–	–	–	–	–	–
	Microbiology	–	–	–	–	–	–
	Specimen Procurement, Receipt and Dispatch	–	–	–	–	–	–
	Transfusion Medicine/Science	–	–	–	–	–	–
	Point-of-Care Testing	–	–	–	–	–	–
	Other	–	–	–	–	–	–
Health Region	Eastern Regional Integrated Health Authority	–	–	–	–	–	–
	Central Regional Integrated Health Authority	–	–	–	–	–	–
	Western Regional Integrated Health Authority	–	–	–	–	–	–
	Labrador–Grenfell Regional Integrated Health Authority	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–

Notes

* Value suppressed in accordance with CIHI's privacy policy; cell value is from 1 to 4.

– Data is not applicable, not collected or does not meet data selection criteria.

Workforce Count and Regulation Status

The workforce count may not represent the entire workforce due to voluntary registration with the CSMLS.

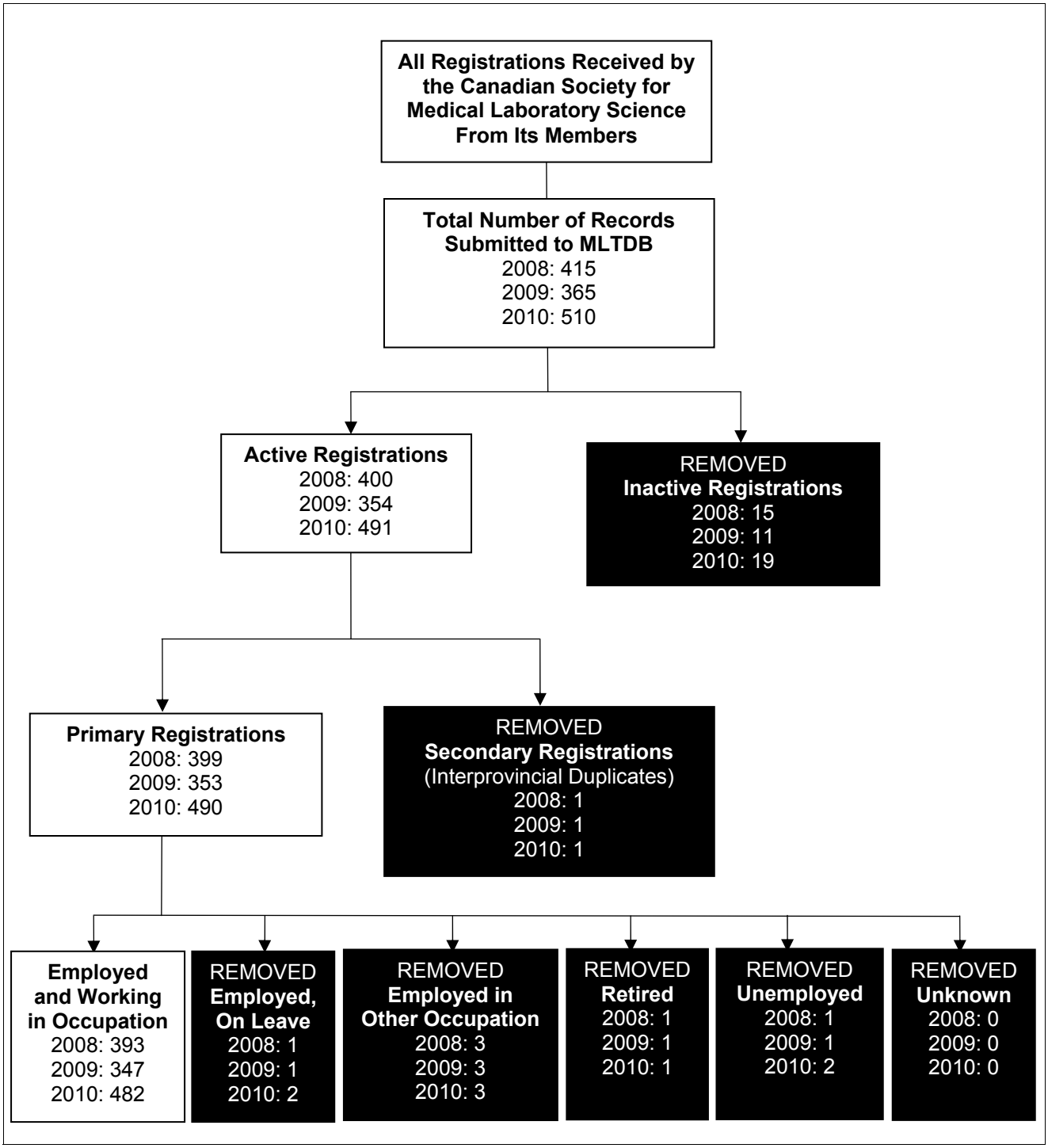
Refer to the Regulation Status tab and the Methodological Notes for more information.

Totals may not equal 100% due to rounding.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Data Flow From the Canadian Society for Medical Laboratory Science to CIHI (for Newfoundland and Labrador)



Prince Edward Island MLT Workforce Profile

Prince Edward Island—Total Medical Laboratory Technologist Workforce, 2008 to 2010

		2008		2009		2010	
		Count	Percentage	Count	Percentage	Count	Percentage
Total Registered Medical Laboratory Technologist Workforce		**103**		**107**		**112**	
Gender	Female	–	–	–	–	–	–
	Male	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Average Age	Years	–		–		–	
Age Group	<35	–	–	–	–	–	–
	35–54	–	–	–	–	–	–
	55+	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Level of Basic Education in Medical Laboratory Technology	Diploma	–	–	–	–	–	–
	Baccalaureate	–	–	–	–	–	–
	Master's	–	–	–	–	–	–
	Doctorate	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Location of Graduation for Basic Education in Medical Laboratory Technology	Canadian Trained	–	–	–	–	–	–
	Foreign Trained	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
New Graduates	Yes—Graduated in Last Two Years	–	–	–	–	–	–
	No—Graduated More Than Two Years Ago	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Number of Certifications	Single Certification	–	–	–	–	–	–
	Multiple Certifications	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Initial Certification Discipline	General	96	93.2%	99	92.5%	104	92.9%
	Clinical Genetics	0	0.0%	0	0.0%	0	0.0%
	Diagnostic Cytology	*	*	5	4.7%	5	4.5%
	Clinical Chemistry	*	*	*	*	*	*
	Hematology	0	0.0%	0	0.0%	0	0.0%
	Histology	0	0.0%	0	0.0%	0	0.0%
	Microbiology	0	0.0%	0	0.0%	0	0.0%
	Transfusion Medicine/Science	*	*	*	*	*	*
	Other	0	0.0%	0	0.0%	0	0.0%
	Unknown	0	0.0%	0	0.0%	0	0.0%
Advanced Registered Technologist	Yes	–	–	–	–	–	–
	No	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Multiple Employment Status	Single Employer	–	–	–	–	–	–
	Multiple Employers	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Total Usual Weekly Hours of Work	<22.5	–	–	–	–	–	–
	22.5–37.4	–	–	–	–	–	–
	37.5+	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Primary Employment							
Employment Category	Permanent Employee	–	–	–	–	–	–
	Temporary Employee	–	–	–	–	–	–
	Casual Employee	–	–	–	–	–	–
	Self-Employed	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Full-Time/Part-Time Status	Full Time	–	–	–	–	–	–
	Part Time	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Place of Employment	General Hospital	–	–	–	–	–	–
	Residential Care Facility	–	–	–	–	–	–
	Physician's Office/Other Professional Practice	–	–	–	–	–	–
	Community Health Centre	–	–	–	–	–	–
	Public Health Laboratory/Department/Unit	–	–	–	–	–	–
	Centralized Diagnostic Laboratory Facility	–	–	–	–	–	–
	Free-Standing Diagnostic Laboratory	–	–	–	–	–	–
	Specimen Collection Centre	–	–	–	–	–	–
	Blood Transfusion Centre	–	–	–	–	–	–
	Other Laboratory Facility	–	–	–	–	–	–
	Post-Secondary Educational Institution	–	–	–	–	–	–
	Association/Government/Para-Governmental	–	–	–	–	–	–
	Industry, Manufacturing and Commercial	–	–	–	–	–	–
	Other	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–

(continued on next page)

Prince Edward Island—Total Medical Laboratory Technologist Workforce, 2008 to 2010 (cont'd)

		2008		2009		2010	
		Count	Percentage	Count	Percentage	Count	Percentage
Position	Manager	–	–	–	–	–	–
	Supervisor	–	–	–	–	–	–
	Staff MLT	–	–	–	–	–	–
	Technical Specialist	–	–	–	–	–	–
	Laboratory Information System Specialist	–	–	–	–	–	–
	Consultant	–	–	–	–	–	–
	Educator	–	–	–	–	–	–
	Researcher	–	–	–	–	–	–
	Sales	–	–	–	–	–	–
	Other	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Clinical Education/Preceptor Activity Indicator	Yes	–	–	–	–	–	–
	No	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Major Function	Diagnostic and Therapeutic Laboratory Services	–	–	–	–	–	–
	Administration	–	–	–	–	–	–
	Quality Management	–	–	–	–	–	–
	Teaching, Medical Laboratory Technology–Related	–	–	–	–	–	–
	Research	–	–	–	–	–	–
	Other Major Function	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Area of Practice	Clinical Chemistry	–	–	–	–	–	–
	Clinical Genetics	–	–	–	–	–	–
	Diagnostic Cytology	–	–	–	–	–	–
	Hematology	–	–	–	–	–	–
	Histology	–	–	–	–	–	–
	Immunology	–	–	–	–	–	–
	Microbiology	–	–	–	–	–	–
	Specimen Procurement, Receipt and Dispatch	–	–	–	–	–	–
	Transfusion Medicine/Science	–	–	–	–	–	–
	Point-of-Care Testing	–	–	–	–	–	–
	Other	–	–	–	–	–	–
Health Region	Kings County (Census Division 1)	–	–	–	–	–	–
	Queens County (Census Division 2)	–	–	–	–	–	–
	Prince County (Census Division 3)	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–

Notes

* Value suppressed in accordance with CIHI's privacy policy; cell value is from 1 to 4.

− Data is not applicable, not collected or does not meet data selection criteria.

Totals may not equal 100% due to rounding.

Workforce Count and Regulation Status

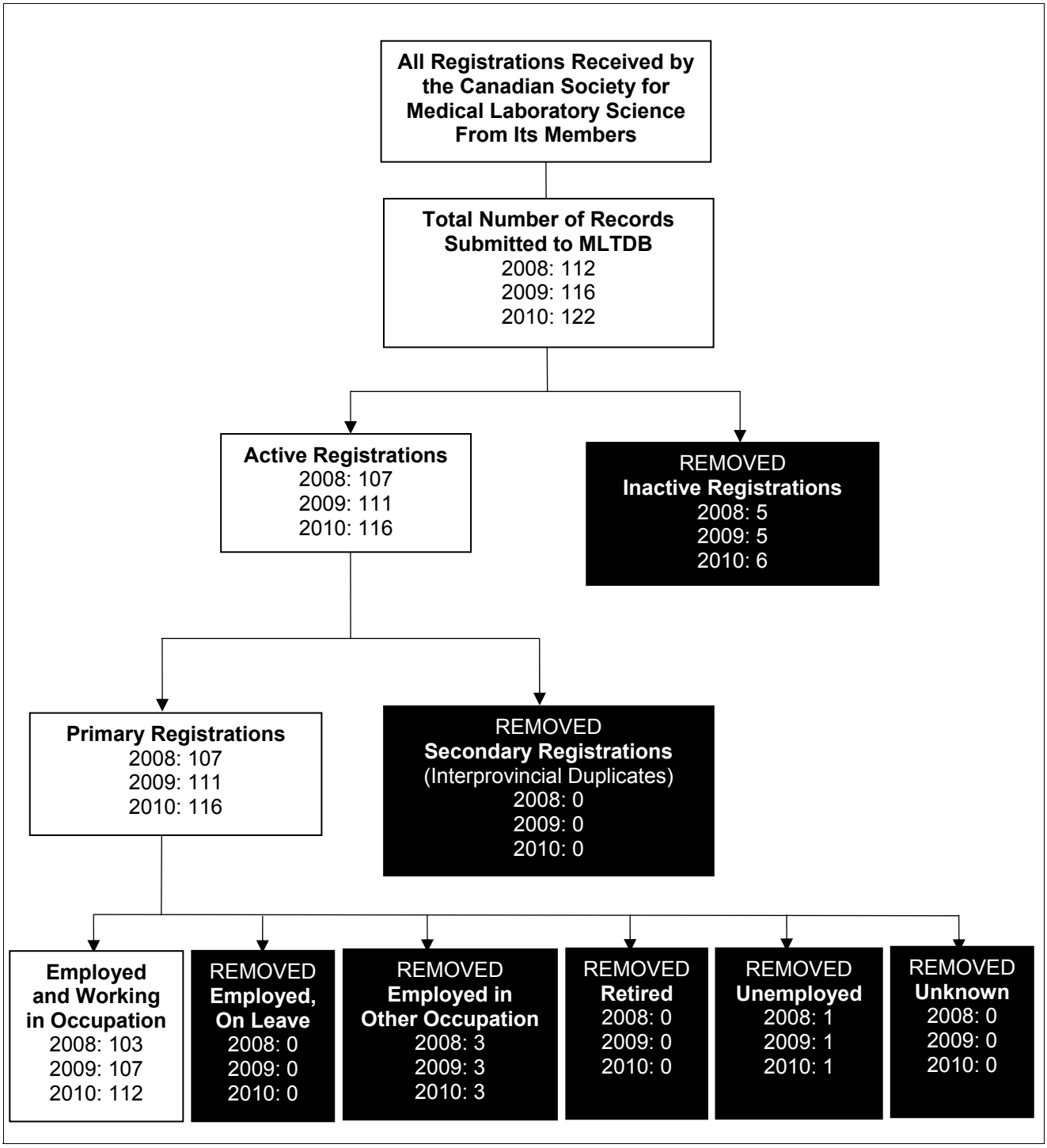
The workforce count may not represent the entire workforce due to voluntary registration with the CSMLS.

Refer to the Regulation Status tab and the Methodological Notes for more information.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Data Flow From the Canadian Society for Medical Laboratory Science to CIHI (for Prince Edward Island)



British Columbia MLT Workforce Profile

British Columbia—Total Medical Laboratory Technologist Workforce, 2008 to 2010

		2008		2009		2010	
		Count	Percentage	Count	Percentage	Count	Percentage
Total Registered Medical Laboratory Technologist Workforce		**2,271**		**2,126**		**2,245**	
Gender	Female	–	–	–	–	–	–
	Male	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Average Age	Years	–		–		–	
Age Group	<35	–	–	–	–	–	–
	35–54	–	–	–	–	–	–
	55+	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Level of Basic Education in Medical Laboratory Technology	Diploma	–	–	–	–	–	–
	Baccalaureate	–	–	–	–	–	–
	Master's	–	–	–	–	–	–
	Doctorate	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Location of Graduation for Basic Education in Medical Laboratory Technology	Canadian Trained	–	–	–	–	–	–
	Foreign Trained	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
New Graduates	Yes—Graduated in Last Two Years	–	–	–	–	–	–
	No—Graduated More Than Two Years Ago	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Number of Certifications	Single Certification	–	–	–	–	–	–
	Multiple Certifications	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Initial Certification Discipline	General	1,996	87.9%	1,875	88.2%	1,987	88.5%
	Clinical Genetics	52	2.3%	47	2.2%	47	2.1%
	Diagnostic Cytology	65	2.9%	61	2.9%	64	2.9%
	Clinical Chemistry	33	1.5%	29	1.4%	30	1.3%
	Hematology	21	0.9%	21	1.0%	21	0.9%
	Histology	14	0.6%	13	0.6%	14	0.6%
	Microbiology	48	2.1%	43	2.0%	43	1.9%
	Transfusion Medicine/Science	20	0.9%	18	0.8%	20	0.9%
	Other	22	1.0%	19	0.9%	19	0.8%
	Unknown	0	0.0%	0	0.0%	0	0.0%
Advanced Registered Technologist	Yes	–	–	–	–	–	–
	No	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Multiple Employment Status	Single Employer	–	–	–	–	–	–
	Multiple Employers	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Total Usual Weekly Hours of Work	<22.5	–	–	–	–	–	–
	22.5–37.4	–	–	–	–	–	–
	37.5+	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Primary Employment							
Employment Category	Permanent Employee	–	–	–	–	–	–
	Temporary Employee	–	–	–	–	–	–
	Casual Employee	–	–	–	–	–	–
	Self-Employed	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Full-Time/Part-Time Status	Full Time	–	–	–	–	–	–
	Part Time	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Place of Employment	General Hospital	–	–	–	–	–	–
	Residential Care Facility	–	–	–	–	–	–
	Physician's Office/Other Professional Practice	–	–	–	–	–	–
	Community Health Centre	–	–	–	–	–	–
	Public Health Laboratory/Department/Unit	–	–	–	–	–	–
	Centralized Diagnostic Laboratory Facility	–	–	–	–	–	–
	Free-Standing Diagnostic Laboratory	–	–	–	–	–	–
	Specimen Collection Centre	–	–	–	–	–	–
	Blood Transfusion Centre	–	–	–	–	–	–
	Other Laboratory Facility	–	–	–	–	–	–
	Post-Secondary Educational Institution	–	–	–	–	–	–
	Association/Government/Para-Governmental	–	–	–	–	–	–
	Industry, Manufacturing and Commercial	–	–	–	–	–	–
	Other	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–

(continued on next page)

British Columbia—Total Medical Laboratory Technologist Workforce, 2008 to 2010 (cont'd)

		2008		2009		2010	
		Count	Percentage	Count	Percentage	Count	Percentage
Position	Manager	–	–	–	–	–	–
	Supervisor	–	–	–	–	–	–
	Staff MLT	–	–	–	–	–	–
	Technical Specialist	–	–	–	–	–	–
	Laboratory Information System Specialist	–	–	–	–	–	–
	Consultant	–	–	–	–	–	–
	Educator	–	–	–	–	–	–
	Researcher	–	–	–	–	–	–
	Sales	–	–	–	–	–	–
	Other	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Clinical Education/Preceptor Activity Indicator	Yes	–	–	–	–	–	–
	No	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Major Function	Diagnostic and Therapeutic Laboratory Services	–	–	–	–	–	–
	Administration	–	–	–	–	–	–
	Quality Management	–	–	–	–	–	–
	Teaching, Medical Laboratory Technology–Related	–	–	–	–	–	–
	Research	–	–	–	–	–	–
	Other Major Function	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Area of Practice	Clinical Chemistry	–	–	–	–	–	–
	Clinical Genetics	–	–	–	–	–	–
	Diagnostic Cytology	–	–	–	–	–	–
	Hematology	–	–	–	–	–	–
	Histology	–	–	–	–	–	–
	Immunology	–	–	–	–	–	–
	Microbiology	–	–	–	–	–	–
	Specimen Procurement, Receipt and Dispatch	–	–	–	–	–	–
	Transfusion Medicine/Science	–	–	–	–	–	–
	Point-of-Care Testing	–	–	–	–	–	–
	Other	–	–	–	–	–	–
Health Region	East Kootenay	–	–	–	–	–	–
	Kootenay-Boundary	–	–	–	–	–	–
	Okanagan	–	–	–	–	–	–
	Thompson/Cariboo	–	–	–	–	–	–
	Fraser East	–	–	–	–	–	–
	Fraser North	–	–	–	–	–	–
	Fraser South	–	–	–	–	–	–
	Richmond	–	–	–	–	–	–
	Vancouver	–	–	–	–	–	–
	North Shore/Coast Garibaldi	–	–	–	–	–	–
	South Vancouver Island	–	–	–	–	–	–
	Central Vancouver Island	–	–	–	–	–	–
	North Vancouver Island	–	–	–	–	–	–
	Northwest	–	–	–	–	–	–
	Northern Interior	–	–	–	–	–	–
	Northeast	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–

Notes

– Data is not applicable, not collected or does not meet data selection criteria.

Workforce Count and Regulation Status

The workforce count may not represent the entire workforce due to voluntary registration with the CSMLS.

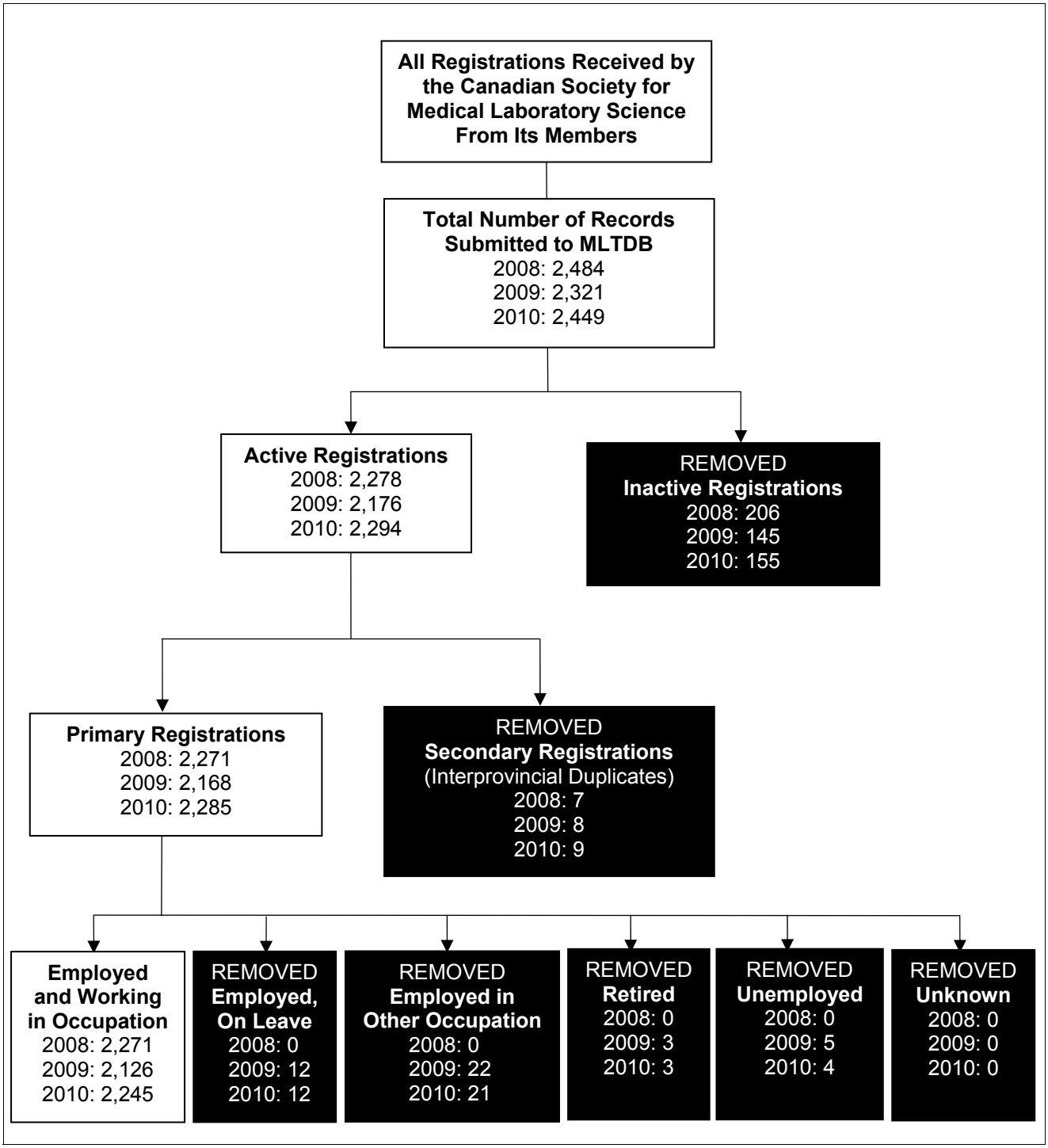
Refer to the Regulation Status tab and the Methodological Notes for more information.

Totals may not equal 100% due to rounding.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Data Flow From the Canadian Society for Medical Laboratory Science to CIHI (for British Columbia)



Territories MLT Workforce Profile

Yukon, Northwest Territories and Nunavut—Total Medical Laboratory Technologist Workforce, 2008 to 2010

		2008		2009		2010	
		Count	Percentage	Count	Percentage	Count	Percentage
Total Registered Medical Laboratory Technologist Workforce		**44**		**49**		**51**	
Gender	Female	–	–	–	–	–	–
	Male	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Average Age	Years	–		–		–	
Age Group	<35	–	–	–	–	–	–
	35–54	–	–	–	–	–	–
	55+	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Level of Basic Education in Medical Laboratory Technology	Diploma	–	–	–	–	–	–
	Baccalaureate	–	–	–	–	–	–
	Master's	–	–	–	–	–	–
	Doctorate	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Location of Graduation for Basic Education in Medical Laboratory Technology	Canadian Trained	–	–	–	–	–	–
	Foreign Trained	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
New Graduates	Yes—Graduated in Last Two Years	–	–	–	–	–	–
	No—Graduated More Than Two Years Ago	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Number of Certifications	Single Certification	–	–	–	–	–	–
	Multiple Certifications	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Initial Certification Discipline	General	44	100.0%	49	100.00%	51	100.00%
	Clinical Genetics	0	0.0%	0	0.00%	0	0.00%
	Diagnostic Cytology	0	0.0%	0	0.00%	0	0.00%
	Clinical Chemistry	0	0.0%	0	0.00%	0	0.00%
	Hematology	0	0.0%	0	0.00%	0	0.00%
	Histology	0	0.0%	0	0.00%	0	0.00%
	Microbiology	0	0.0%	0	0.00%	0	0.00%
	Transfusion Medicine/Science	0	0.0%	0	0.00%	0	0.00%
	Other	0	0.0%	0	0.00%	0	0.00%
	Unknown	0	0.0%	0	0.00%	0	0.00%
Advanced Registered Technologist	Yes	–	–	–	–	–	–
	No	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Multiple Employment Status	Single Employer	–	–	–	–	–	–
	Multiple Employers	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Total Usual Weekly Hours of Work	<22.5	–	–	–	–	–	–
	22.5–37.4	–	–	–	–	–	–
	37.5+	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Primary Employment							
Employment Category	Permanent Employee	–	–	–	–	–	–
	Temporary Employee	–	–	–	–	–	–
	Casual Employee	–	–	–	–	–	–
	Self-Employed	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Full-Time/Part-Time Status	Full Time	–	–	–	–	–	–
	Part Time	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Place of Employment	General Hospital	–	–	–	–	–	–
	Residential Care Facility	–	–	–	–	–	–
	Physician's Office/Other Professional Practice	–	–	–	–	–	–
	Community Health Centre	–	–	–	–	–	–
	Public Health Laboratory/Department/Unit	–	–	–	–	–	–
	Centralized Diagnostic Laboratory Facility	–	–	–	–	–	–
	Free-Standing Diagnostic Laboratory	–	–	–	–	–	–
	Specimen Collection Centre	–	–	–	–	–	–
	Blood Transfusion Centre	–	–	–	–	–	–
	Other Laboratory Facility	–	–	–	–	–	–
	Post-Secondary Educational Institution	–	–	–	–	–	–
	Association/Government/Para-Governmental	–	–	–	–	–	–
	Industry, Manufacturing and Commercial	–	–	–	–	–	–
	Other	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–

(continued on next page)

Yukon, Northwest Territories and Nunavut—Total Medical Laboratory Technologist Workforce, 2008 to 2010 (cont'd)

		2008		2009		2010	
		Count	Percentage	Count	Percentage	Count	Percentage
Position	Manager	–	–	–	–	–	–
	Supervisor	–	–	–	–	–	–
	Staff MLT	–	–	–	–	–	–
	Technical Specialist	–	–	–	–	–	–
	Laboratory Information System Specialist	–	–	–	–	–	–
	Consultant	–	–	–	–	–	–
	Educator	–	–	–	–	–	–
	Researcher	–	–	–	–	–	–
	Sales	–	–	–	–	–	–
	Other	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Clinical Education/Preceptor Activity Indicator	Yes	–	–	–	–	–	–
	No	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Major Function	Diagnostic and Therapeutic Laboratory Services	–	–	–	–	–	–
	Administration	–	–	–	–	–	–
	Quality Management	–	–	–	–	–	–
	Teaching, Medical Laboratory Technology–Related	–	–	–	–	–	–
	Research	–	–	–	–	–	–
	Other Major Function	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–
Area of Practice	Clinical Chemistry	–	–	–	–	–	–
	Clinical Genetics	–	–	–	–	–	–
	Diagnostic Cytology	–	–	–	–	–	–
	Hematology	–	–	–	–	–	–
	Histology	–	–	–	–	–	–
	Immunology	–	–	–	–	–	–
	Microbiology	–	–	–	–	–	–
	Specimen Procurement, Receipt and Dispatch	–	–	–	–	–	–
	Transfusion Medicine/Science	–	–	–	–	–	–
	Point-of-Care Testing	–	–	–	–	–	–
	Other	–	–	–	–	–	–
Health Region	Yukon	–	–	–	–	–	–
	Northwest Territories	–	–	–	–	–	–
	Nunavut	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–

Notes

– Data is not applicable, not collected or does not meet data selection criteria.

Workforce Count and Regulation Status

The workforce count may not represent the entire workforce due to voluntary registration with the CSMLS.

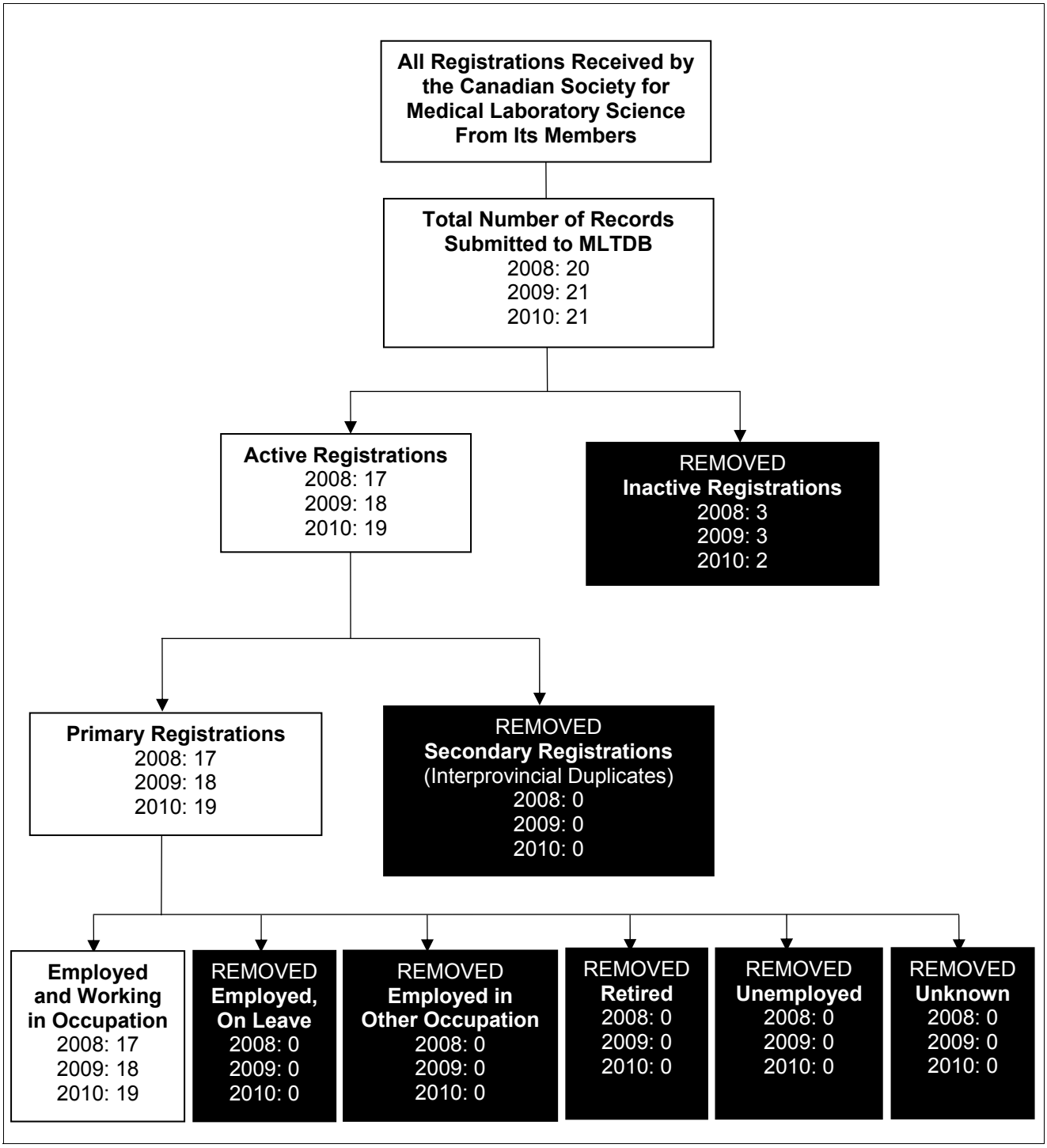
Refer to the Regulation Status tab and the Methodological Notes for more information.

Totals may not equal 100% due to rounding.

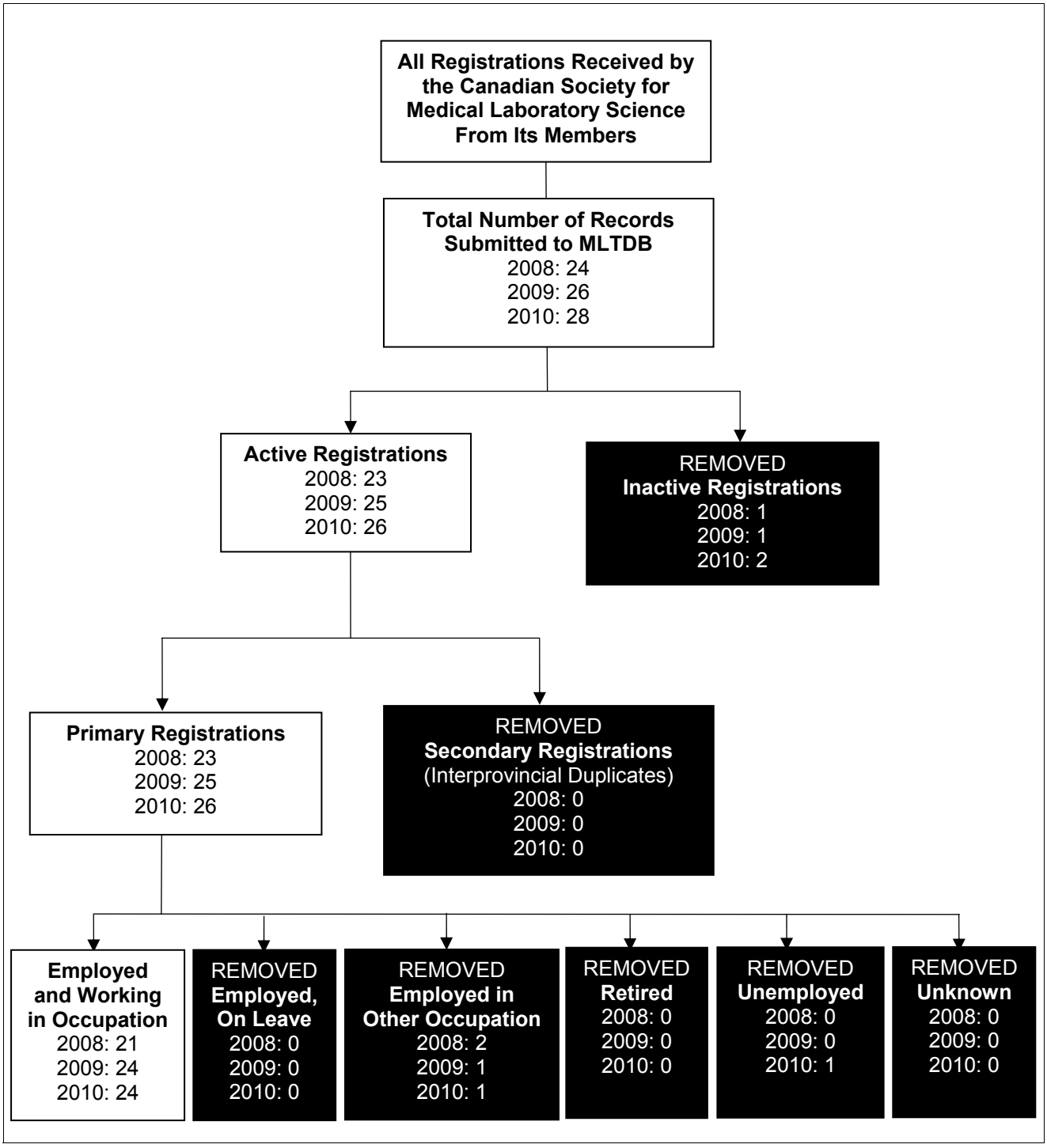
Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

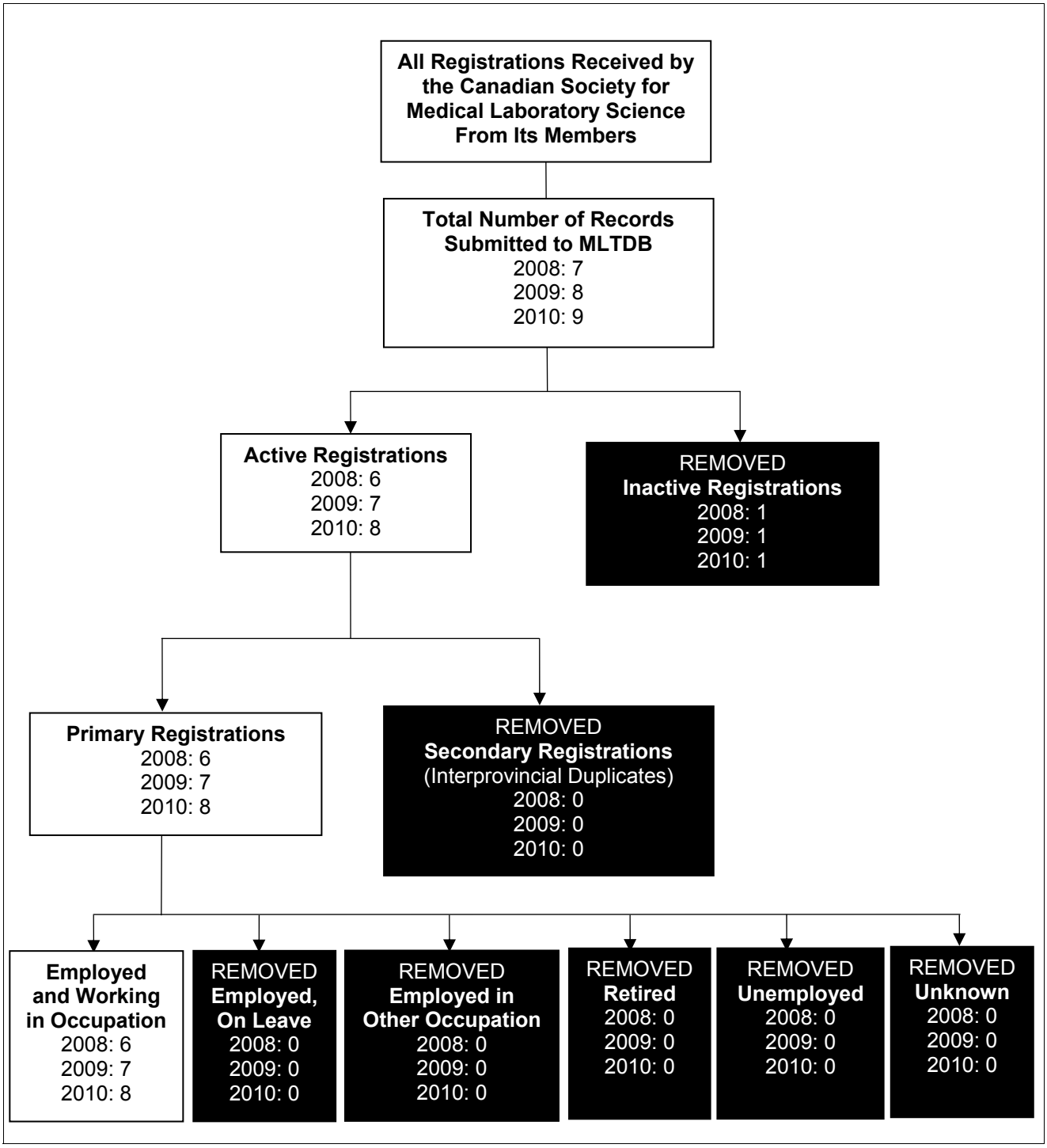
Data Flow From the Canadian Society for Medical Laboratory Science to CIHI (for Yukon)

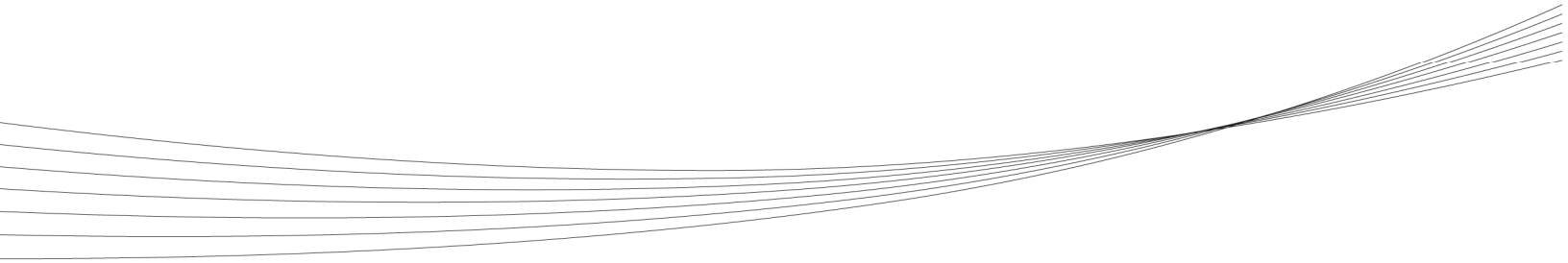


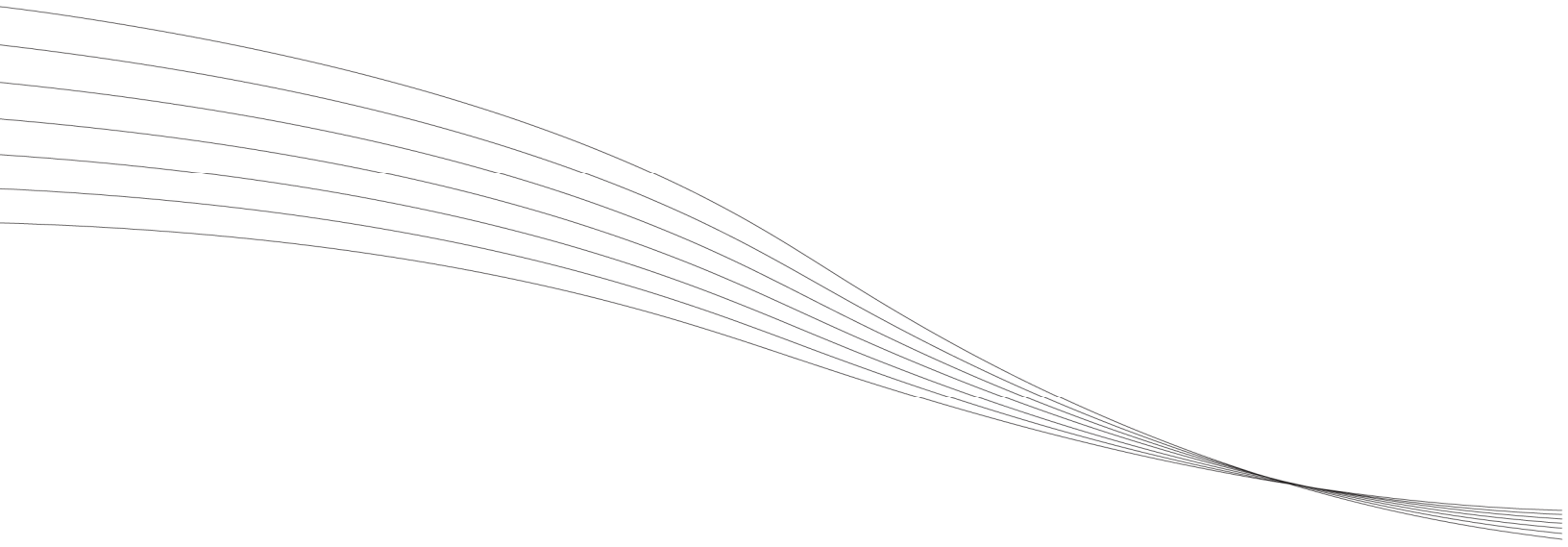
Data Flow From the Canadian Society for Medical Laboratory Science to CIHI (for the Northwest Territories)



Data Flow From the Canadian Society for Medical Laboratory Science to CIHI (for Nunavut)







Methodological Notes

These notes outline the basic concepts behind the data provided in this publication, the underlying methodology of the data collection and key aspects of data quality. They will help provide a better understanding of the strengths and limitations of the data and demonstrate the ways in which the data can be used effectively. This information is of particular importance when making comparisons with data from other sources and when making conclusions based on changes over time.

CIHI relies on superior principles of data quality, privacy and confidentiality. CIHI's commitment to ensuring the collection of quality data in a privacy-sensitive manner is applied to data collection, processing, analysis and dissemination. For further details regarding CIHI's privacy principles, which are outlined in *Privacy and Confidentiality of Health Information at CIHI: Principles and Policies for the Protection of Personal Health Information*, go to www.cihi.ca.

History

Policy reports and research papers have consistently demonstrated that there is very little standardized data available on health professionals on a national basis, with the exception of physicians and regulated nursing professionals. Based on consultations with federal and provincial/territorial ministries of health, the profession of medical laboratory technology was identified as one of the priority areas for data collection. The MLTDB was established in 2008, with the collection of first-year data from across Canada.

Purpose of This Report

Supply and distribution information is a key component of health human resources planning at the pan-Canadian and provincial/territorial levels. Any planning for or projection of the number of health professionals required for a particular jurisdiction must begin with an understanding of the current supply and how that supply is changing. The presentation of clear, objective data and data analysis enables informed decision-making and supports policy formulation.

Medical Laboratory Technologists in Canada, 2010 examines the distribution of the workforce by key factors, including demographic, geographic, education, certification and employment dimensions. The report provides an indication of a representative population of MLTs in the provinces or territories where data is available. Data tables and charts are supplemented with detailed information about the data collection process, pertinent limitations of the current data and an explanation of the data-compiling methods used.

The information in this third annual report from the MLTDB will support a wide variety of government and non-government organizations and research communities to better understand the supply and distribution of MLTs throughout Canada. Accordingly, it will contribute to policy formulation and decision-making at both the pan-Canadian and provincial/territorial levels.

Scope of the Data

Population of Interest

The population of interest for the MLTDB includes all MLTs who are qualified to work in Canada.

Population of Reference

The population of reference for the MLTDB includes all MLTs who register with a Canadian provincial regulatory body or the CSMLS, given that these organizations have submitted data to the MLTDB.

Period of Reference

For any given year, the population of reference includes those MLTs who register between the start of the registration period for the provincial regulatory body or the CSMLS and August 1. For 2010, the period of reference began with the registration start period and ended on August 1, 2010. (See Appendix A for details of registration start and end periods.)

Regulation Status

The profession of medical laboratory technology is not regulated in all Canadian jurisdictions (see Appendix B). The aspect of non-regulation and voluntary registration has a significant impact on the quality of the data; in particular, information gap issues become a major concern for those jurisdictions that are neither regulated nor require mandatory registration with any professional association. See Information Gap in the Data Quality section of this document.

Data Inclusions for the MLTDB

Data collected for the MLTDB includes all registrations by the provincial regulatory bodies and the CSMLS collected from their members as of August 1 of each given year. Currently, the MLTDB holds data for 2008 to 2010.

Data Exclusions for the MLTDB

The MLTDB does not collect data on MLTs

- Who reside and work in unregulated provinces and territories and who chose not to obtain a voluntary membership with the CSMLS; or
- Who registered with regulatory bodies or professional societies after July 31 of each given year until the next data collection cycle. The data collection cycles covered in this publication are from 2008 to 2010.

Data Selection Criteria for This Publication

While the overall number of registrations or active registrations held in the MLTDB is summarized in some of the data tables in this publication, most data tables and charts concentrate on the MLT workforce. The workforce data is selected based on a number of criteria, described below.

1. MLTs must be registered, have an active membership with a provincial MLT regulatory body or the CSMLS and be working in medical laboratory technology as of August 1 of the data year (2008, 2009 and 2010), with the registration being recognized as a primary registration.[vi] Inactive registrations, active but secondary registrations and registrations with an Employment Status other than *employed in medical laboratory technology* are excluded.[vii]
2. The percentage of *unknown* values for a selected data element must be less than 5% of the total count. For Saskatchewan and Alberta in 2010, the criterion was applied to certain data elements after removing registrants who did not respond to elements either for the education/certification or employment fields. More details can be found in the Data Adjustments section of this document.

Under certain circumstances, a data element that has met the above criteria may not be included in the analysis. The reason may be that the data element primarily serves data validation or derivation purposes (for example, Province/Territory of Residence or Province/ Territory of Primary Employment). Or it may be that the distribution of the values for this data element has an obvious bias due to the volume of *unknown* values or other data quality issues.

If all or most values for a data element are suppressed to protect privacy and confidentiality of personal information and the presentation of this data element would not add any value to the report, this data element may be removed from the report.

Point-in-Time Data Collection

The point-in-time approach to data collection provides a snapshot of the MLT workforce across jurisdictions on a specific day. Using the same approach consistently will enable comparability over time, which is necessary to accurately determine a trend. However, depending on the jurisdiction, this approach may not capture the entire year-end totals equally in every province and territory, as each jurisdiction can have a different start date for its registration period.

Data collection begins at the onset of the data provider's respective annual registration period and ends on August 1. This collection period was identified as the period that captures most of the registrants renewing or applying for membership. The registration periods for provincial and territorial jurisdictions for the 2010 registration year are presented in Appendix A—Twelve-Month Registration Periods by Province/Territories, 2010.

---

vi. Each record in the MLTDB is assessed and identified as a primary or secondary registration according to CIHI's methodology. See details in Appendix D.

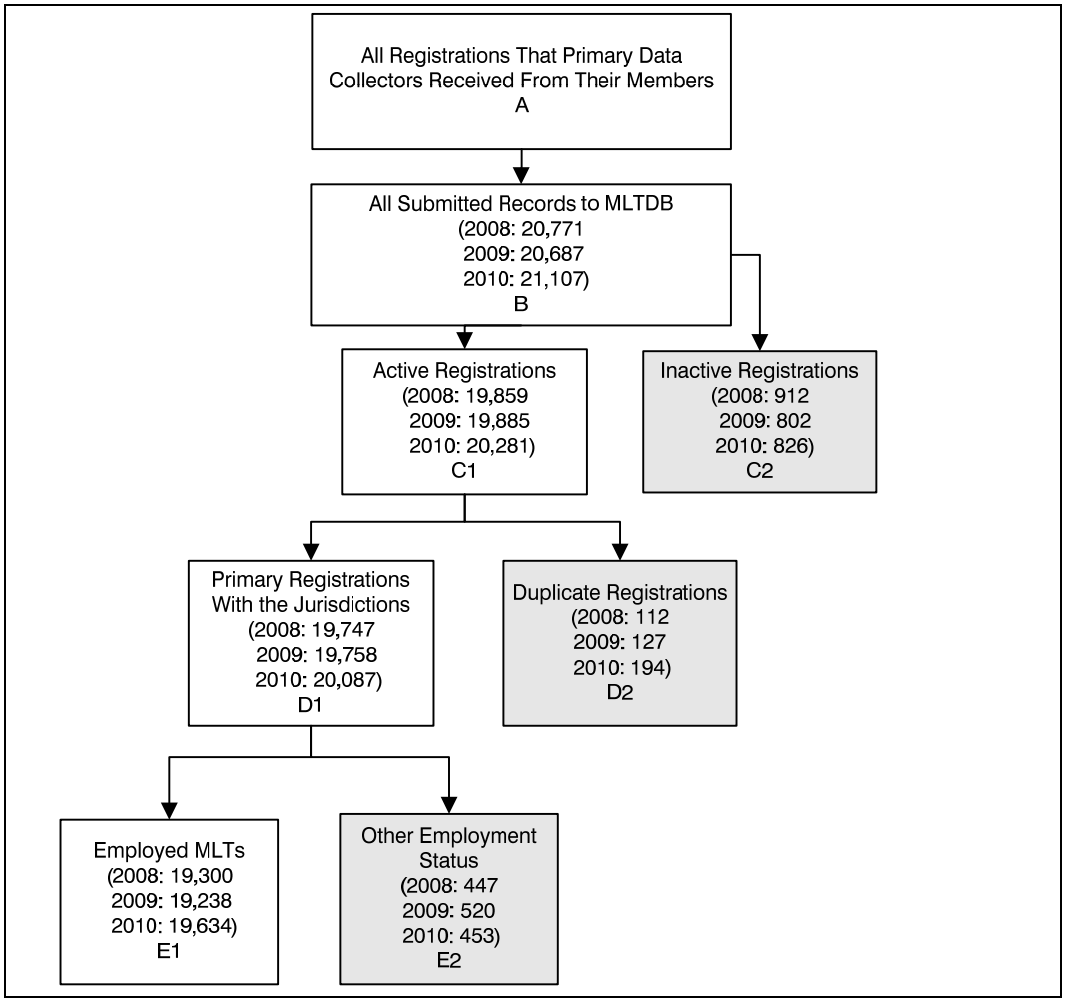
vii. *Other* Employment Status than *employed in medical laboratory technology* refers to registrants who work outside of the profession; registrants who are retired, unemployed or employed in the profession but on leave; and registrants whose status is *unknown*.

Data Flow From Primary Data Collector to CIHI

As part of their registration/licensing process, the provincial regulatory bodies and the CSMLS collect membership data on an annual basis. This administrative data is submitted to the MLTDB according to established standards.

Figure 18 illustrates the data flow when this methodology is applied. Explanations of each step within the data flow are provided below. Some adjustments may have been made to previous years' data. Please see the Methodological Notes for additional information.

Figure 18: Tracing Data Flow From Primary Data Collectors to MLTDB (2008, 2009 and 2010)



Box A: Includes all registrations that the MLT regulatory bodies or the CSMLS received from their members.

Box B: Includes all registrations that are submitted from MLT regulatory bodies or the CSMLS to the MLTDB at CIHI. The cut-off date for data collection is August 1 of the collection year.

Box C1: Includes registrations that are identified as an active registration type.

Box C2: Includes registrations that are identified as an inactive registration type. These records are removed from the final count for the workforce.

Box D1: Represents primary registrations where the province or territory of registration reflects the registrant's primary jurisdiction of practice.

Box D2: MLTs in Canada can work in more than one jurisdiction concurrently as long as they meet the requirements of the provincial regulatory bodies or employers. In the interest of preventing double-counting across jurisdictions, this box represents the secondary registrations or interprovincial duplicates to be removed from the final count for the workforce. The methodology that identifies primary and secondary registrations is explained in detail in the Data Processing Methods section.

Boxes E1 and E2: CIHI's statistics for the MLT workforce include registrants who explicitly state that they are employed (and not on leave) in medical laboratory technology (Box E1) at the time of registration with a provincial regulatory body or the CSMLS. Those MLTs who are on leave, employed outside of medical laboratory technology, retired or unemployed, or whose Employment Status is *unknown*, are excluded from the final statistics for the workforce (Box E2).

The results of this methodology and breakdown by province/territories of registration are shown in Table 14.

Table 14: Record Composition by Province/Territories of Registration, 2010

	All Submitted Records (A)	Remove Inactive Records (B)	Remove Duplicate Registrations (C)	Remove Records if Employment Status Not Identified as Working MLT‡ (D)	Registered MLT Workforce (A – B – C – D)
Total	**21,107**	**826**	**194**	**453**	**19,634**
Regulated Provinces					
N.S.	1,001	55	..	10	936
N.B.	681	18	9	12	642
Que.	4,241	..	24	4	4,213
Ont.	7,587	481	101	186	6,819
Man.	1,113	37	9	58	1,009
Sask.	947	49	19	5	874
Alta.	2,398	1	22	124	2,251
Unregulated Provinces/Territories§					
N.L.	510	19	1	8	482
P.E.I.	122	6	..	4	112
B.C.	2,449	155	9	40	2,245
Territories**	58	5	..	2	51

Notes

‡ Employment Status included in this column: employed in medical laboratory technology but on leave, employed outside of medical laboratory technology, retired, unemployed and unknown.

§ Data for unregulated provinces/territories represents voluntary registrations with the CSMLS.

** Territories include Yukon, the Northwest Territories and Nunavut.

.. Information not available.

All cells that have values of less than 5 in this table are composed of different values or are the result of a more complicated methodology that was used so that the individuals represented by these small cells cannot be identified. For this reason, these small cells are not suppressed.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

CIHI's Methodology for Identifying the Medical Laboratory Technologist Workforce

By carefully selecting the reference population for the MLT workforce, CIHI is able to provide standardized comparable data suitable for analysis and trending purposes. The workforce includes active registered working MLTs as of August 1 of each data year (between 2008 and 2010), after excluding secondary registrations. The population of reference for reporting by other organizations may differ for various reasons, such as differences in the time frame used, the inclusion of other registration types (such as inactive), differences in Employment Status (employed versus unemployed) and the inclusion of secondary registrations. Discrepancies between the data in CIHI's publication and data presented by other organizations may be due to these differences. We therefore caution readers to be mindful of these differences when comparing MLTDB data with other data holdings and publications.

Data Collection Methods

Data Sources

The sources of data for the MLTDB are the provincial regulatory bodies and the CSMLS, which collect the data in written or electronic format. See details of data sources in Appendix C.

In this publication, the management and information systems (MIS) data represents 2006–2007, 2007–2008, 2008–2009 and 2009–2010. Additionally, the data includes only the financial and statistical data from submitting hospitals whose data is housed in the CMDB. Data from Quebec and Nunavut has been excluded, as has data from all private/community laboratories. Additionally, public health laboratories' data may or may not be included, depending on whether the services are performed in the hospital or offsite at a stand-alone laboratory.

Data Collection

Paper or online registration forms completed by the registrants for registration/licensing purposes are the usual methods of primary data collection for the provincial regulatory bodies and the CSMLS.

Once in electronic format, an extract of the data is prepared for submission to CIHI. Only those data elements defined in the *Medical Laboratory Technologist Database Reference Guide* (available at www.cihi.ca) are submitted to CIHI. The data extract must conform to the specifications of the MLTDB, as outlined in the *Medical Laboratory Technologist Database Data Submission Specifications Manual* (available at www.cihi.ca).

A letter of agreement governs CIHI's collection of MLT data. Each year, data providers who participate in the MLTDB will review the core set of elements that they collect on their registration forms. Under the current agreement, each data provider agrees to make every reasonable effort to collect and submit the 86 data elements for each registrant according to the definitions outlined in the *Medical Laboratory Technologist Database Reference Guide*.

Coverage—CMDB Data

Canadian MIS Database Frame

"Frame" refers to a list of entities that should supply data to a database. The CMDB contains financial and statistical data from hospitals across the country. CIHI maintains a list of Canadian hospitals that report to the CMDB, referred to as the CMDB list of hospitals. The CMDB does not yet request data from long-term care facilities, community health centres or home care agencies. Most regionalized provinces, however, do submit non-hospital data.

Key Concepts and Definitions

Data elements used in this publication are described below. For a complete list of data elements in the MLTDB, as well as complete data element names and definitions, please refer to the *Medical Laboratory Technologist Database Reference Guide*, which can be downloaded from CIHI's website (www.cihi.ca). Definitions for reported elements from the CMDB and related concepts are also available on CIHI's website.

Demographics

Gender

The reported gender of a registrant at the time of registration or renewal, used for administrative purposes.

Age

Derived from the year of birth of the registrant.

Geography

Province/Territory of Residence

At the time of registration or renewal.

Country of Residence

At the time of registration or renewal.

Province/Territory of Registration

Based on the jurisdiction of the organization submitting MLT data.

Education and Certification

Level of Basic Education in Medical Laboratory Technology

Initial educational program used to prepare an MLT for practice. This refers to the initial education program used, in whole or in part, for consideration of licensure as an MLT in Canada.

New Graduates

Number of registrants who graduated from basic education programs in the past two years.

Initial Certification Discipline and Post-Initial Certification Discipline

Certification obtained through the CSMLS, in chronological order.

Initial Certification Level and Post-Initial Certification Level

The level(s) of CSMLS certification obtained in medical laboratory technology.

Employment

Total Usual Weekly Hours of Work

At the time of registration or renewal, the total usual (typical or average) weekly hours of work in all medical laboratory technology employment(s) related to practice.

Primary Employment

Primary employment refers to the employment that is associated with the highest number of usual weekly hours worked.

Employment Category

Employment category at the time of registration or renewal.

Full-Time/Part-Time Status

At the time of registration or renewal, the official status with an employer or, if official status is unknown, the classification of status based on usual hours worked.

Place of Employment

The place of primary employment, whether an employee or self-employed, at the time of registration or renewal.

Position

The main role within primary employment (for registrants with multiple roles within primary employment, reflects the role associated with the most worked hours).

Clinical Education/Preceptor Activity Indicator

Indicates whether clinical education is provided within the place of primary employment to MLTs and/or other health professionals participating in practicum or residency training as part of an accredited post-secondary education program.

Major Function

At the time of registration or renewal, the major focus of activities in primary employment.

Area of Practice

The application of particular skills and knowledge related to medical laboratory technology. Areas of practice include clinical chemistry, clinical genetics, diagnostic cytology, hematology, histology, immunology, microbiology, specimen procurement, transfusion medicine, point-of-care testing and others. An MLT may have more than one area of practice or just one; on the other hand, an MLT may work at a position such as sales that may not involve any particular area of practice. A sum of the counts for Area of Practice may or may not equal the total MLT workforce. The percentage distribution of Area of Practice is based on the total number of areas of practice instead of total headcounts for the workforce. For example, if one individual practised in clinical chemistry, clinical genetics and hematology, and another individual practised in clinical chemistry only, the total number of areas of practice in this case would be four and the percentage distribution for Area of Practice would be 50% for clinical chemistry, 25% for clinical genetics and 25% for hematology.

Health Region

Derived from the postal code of the service delivery worksite where the registrant is directly engaged in practising medical laboratory technology. Information for a given health region represents MLTs who worked for employers who were *located* in that region. The information does not necessarily represent employees who *live in* a particular health region.

Health region is assigned according to Statistics Canada's Postal Code Conversion File (PCCF+ version 5G). Within the PCCF+ file, the boundaries of health regions were in effect as of December 2007. Further details regarding boundaries may be found at www.statcan.gc.ca/pub/92-153-g/2010002/new-neuf-eng.htm.

Canadian MIS Database

Compensation Expense

The sum of gross salaries expense, benefit contribution expense, purchased compensation expense and fee-for-service expense related to the remuneration of management and operational support personnel, unit-producing personnel and medical personnel employed by or under contract to the health service organization.

Service Recipient

The consumer of service activities offered by one or more functional centres of the health service organization. Service recipients include individuals (such as inpatients, residents and clients) and their significant others, and others as defined by the health service organization.

Workload Units (In-House, Clinical Laboratory)

The workload of the clinical laboratory services as measured by an appropriate workload measurement system. In diagnostic services, one workload unit is equivalent to one minute of unit-producing personnel time spent providing service-recipient care.

Functional Centre

A subdivision of an organization used in a functional accounting system to record the budget and actual direct expenses, statistics and/or revenues, if any, that pertain to the function or activity being carried out.

Unit-Producing Personnel

Personnel whose primary function is to carry out activities that directly contribute to the fulfillment of the service mandate. Examples include registered nurses, laboratory technologists, accounts payable clerks, pharmacists, housekeepers, home care workers and public health officers. Excluded are practising physicians, medical residents, interns and students and, in most cases, diagnostic, therapeutic, nursing and support services students.

Management and Operational Support Personnel

Personnel whose primary function is to manage and/or support the operation of a functional centre. Examples include directors, managers, supervisors, medical personnel fulfilling a management role and secretaries. Excluded are practising physicians, medical residents and interns, and all types of students.

Medical Personnel

Those physicians who are compensated by the health service organization for their professional medical services on either a fee-for-service or salary basis. Examples include pathologists, psychiatrists, radiologists, respirologists, cardiologists, hospitalists, medical residents, interns and students. Also those personnel compensated by the health service organization for their medical-type services on a fee-for-service, sessional or salary basis. Includes dentists and podiatrists.

Technologist

Personnel who have completed the post-secondary educational requirements for a technologist working in a diagnostic/therapeutic functional centre. They may be required to undertake continuing education to remain current, be licensed with the province/territory in which they are employed and be a member of the provincial and national professional organization (such as the Canadian Society for Medical Laboratory Science). Their scope of practice is usually regulated by the province/territory of employment. Also includes personnel who function independently within the bounds of their profession. Includes, but is not limited to, MLTs, medical radiation technologists, medical diagnostic sonographers, electroencephalography/ electronystagmography/electromyography/registered evoked potential/neurophysiology/ polysomnography technologists and cardiopulmonary technologists. Note: Includes those personnel who have been grandfathered as a member of this defined professional class group.

About Entry-Level Medical Laboratory Technologist Certification

To practise medical laboratory technology in Canada, MLTs must become certified with the CSMLS, which is the national certifying body for the profession, except in Quebec, which has its own certification process. To qualify to write the certification exam offered by the CSMLS, students must first successfully pass a medical laboratory technology training program that has been accredited by the Canadian Medical Association. These accredited training programs incorporate a competency profile established by the CSMLS into their curricula. Currently, MLTs can become certified in one of three areas: general medical laboratory technology, diagnostic cytology or clinical genetics. MLTs can work only in their area of certification. After obtaining CSMLS certification, MLTs may or may not be required to register with the CSMLS, unless mandated to do so.

In Quebec, to obtain a permit in medical technology for medical biology, applicants must hold a diploma in technologie d'analyses biomédicales from an institution recognized by the Ministry of Education of Quebec. They must also have knowledge of the French language appropriate to the practice of an MLT in accordance with the *Professional Code of Quebec* and the *Charter of the French Language*. An MLT who has been certified by the CSMLS and wants to practise in Quebec would have to undergo an assessment of prior learning with the Ordre professionnel des technologistes médicaux du Québec (OPTMQ). However, if an MLT holds a permit from another regulated province, this individual would be allowed to work in Quebec, after meeting certain conditions (language requirements, record of good conduct, etc.).[viii]

Data Processing Methods

File Processing

Once data files have been received by CIHI, all records undergo processing before they are included in the national database.

Data Validation

The MLTDB system first ensures that records are in the proper format and that all responses pass specific validity and logic tests. If the data submitted does not match CIHI's standard or if a logical relationship between specific fields does not make sense (for example, the year of graduation is earlier than the year of birth), an exception and/or anomaly report will be generated. The exception and/or anomaly reports are sent to the respective data provider.

Errors and/or anomalies are reviewed jointly by CIHI and the data provider representative. The data provider then corrects the data and resubmits the data file to CIHI, where it is reviewed again. In cases where the data provider is not able to make the necessary corrections, CIHI may make them directly with the explicit consent of the provider.

viii. Information is compiled in accordance with statements on the website of the OPTMQ (www.optmq.org) and through the emails with the OPTMQ.

Derived Variables

Once the file has passed all validity and logic tests, some variables with high interest or importance are derived from the database and for reporting. Examples include age, new graduates and health regions. These derived variables help the reader better understand the data reported from the MLTDB.

Identification of Primary or Secondary Registrations

As part of the derivation process, each record is analyzed and marked as either a primary or secondary registration, according to CIHI's methodology. If a submitted record indicates that an individual lives outside of Canada, this record must be identified and removed from the analysis to avoid over-counting the MLTs living in Canada.

Furthermore, there are administrative incentives for MLTs to maintain their registration in one Canadian jurisdiction while living and/or working in another. To avoid double-counting at the national level, CIHI evaluates each registration to ensure that it reflects the primary jurisdiction of practice. All secondary registrations, which are termed "interprovincial duplicates," are excluded.

Primary registrations are defined as records that meet the following conditions:

- Province/Territory or Country of Residence is either in Canada or not provided.
- For MLTs employed in medical laboratory technology, Province/Territory of Primary Employment equals Province/Territory of Registration; if Province/Territory of Primary Employment is not provided, then Province/Territory of Residence equals Province/Territory of Registration.
- For MLTs not employed in medical laboratory technology, retired or unemployed, or for MLTs with an Employment Status of *unknown*, Province/Territory of Residence equals Province/Territory of Registration.
- If the registrant does not provide any information on Province/Territory of Primary Employment or Province/Territory of Residence, the registrant is assumed to have primary registration with the province/territory that submitted the data (that is, Province/Territory of Registration).

See Appendix D for the flow diagram illustrating the process of identifying primary and secondary registrations.

The purpose of this methodology is to remove secondary registrations (that is, interprovincial duplicates). However, it is not without its limitations. For example, an MLT living in the United States but working in Canada will be erroneously removed as living abroad. Also, when an MLT is registered and employed in a Canadian province and decides to provide short-term relief staffing in another province, the temporary residence information may result in a double count.

Data Verification With Compare Reports

Once a data submission from a data provider has been accepted in the national database, values for each submitted data element are aggregated to the provincial/territorial level. Three compare reports are prepared for this information: one for active registrations, one for inactive registrations and one for the data that is filtered for the workforce and to be published by CIHI. All three compare reports are sent to the data provider so it may review them and approve the use of the data.

For the 2010 report, after the compare reports were signed off, a few more data quality issues were identified while preparing the report. All issues were raised with the corresponding data provider for clarification and verification. With the data provider's consent, some changes at the value level were made in the report, mostly accompanied by footnotes describing the issues. As a result, in some tables, value distribution within a data element may differ slightly from the values shown in the compare reports.

Data Suppression

CIHI is committed to protecting the confidential information of each MLT. Guidelines have been developed to govern the publication and release of health information to safeguard the privacy and confidentiality of the data received by CIHI. These policies also govern CIHI's release of data through ad hoc queries and special analytical studies.

To ensure the anonymity of individual MLTs, cells with counts from 1 to 4 are suppressed in the data tables and replaced by a single asterisk (*). However, presenting accurate row and column totals also necessitates the suppression of a second value to prevent the reader from determining the suppressed value through subtraction. Therefore, in each row and column of a data table or across data tables with a suppressed value, a second value, even if it is greater than 4, is also either suppressed or partially suppressed, whichever provides the best value for the information while satisfying privacy and confidentiality. If necessary, this practice continues with a third value or more until the suppressed value is not able to be identified. This publication uses a dagger (†) to indicate the second type of suppression.

Table 15: Typical Examples of Small-Cell Suppression

Level of Basic Education in Medical Laboratory Technology		
	Count	
	Before Suppression	After Suppression
Diploma	203	203
Baccalaureate	13	1†
Master's and Doctorate	4	*
Unknown	3	3
	Percentage Distribution	
	Before Suppression	After Suppression
Diploma	91.0	91.0
Baccalaureate	5.8	†
Master's and Doctorate	1.8	*
Unknown	1.3	1.3

Note
Cell suppression is not necessary for *unknown* values in the data tables.

Symbols

Wherever possible, standard symbols and numerical presentations are used in this report:

* Value suppressed in accordance with CIHI's privacy policy; cell value is from 1 to 4.

† Represents a value of 0 to 9 when partial suppression applies. Value may represent values from 5 to 9 when full suppression is applied to ensure confidentiality or percentage values from 0% to 100% when the corresponding percentage is also suppressed.

When necessary, other symbols are footnoted at the bottom of the respective tables or figures.

Processing Missing Values

When a data provider is unable to provide information for a registrant for a specific data element, a missing value in the terms *not collected* or *unknown* is provided to the MLTDB. When the data collected is not relevant to a registrant, the data provider is required to submit *not applicable* to the database. See definitions of the terms in the Missing Values section of this document.

Data Quality

To ensure a high level of accuracy and usefulness, CIHI developed a framework for assessing and reporting the quality of data contained in its databases and registries. This framework focuses on the five dimensions of data quality: timeliness, usability, relevance, accuracy and comparability. Briefly, they are as follows for the MLTDB:

- Timeliness is achieved by collecting data at a point in time that is determined and agreed upon by the data providers and that reflects a majority of total records. This allows CIHI to analyze and release the data in a timely manner.
- Usability includes the availability and documentation of the data and the ease of interpretation.
- Relevance of the data set includes the adaptability and value of the data when used by decision-makers, policy developers, researchers and the media.
- Accuracy is an assessment of how well the data reflects reality or how closely the data presented in this publication reflects the population of reference. Under- or over-coverage issues, CIHI's methodologies of point-in-time data collection, primary/secondary registration identification and missing data values all have an impact on accuracy.
- Comparability measures how well the data for the current year compares with the data from previous years and how data from the MLTDB compares with data from other sources or between jurisdictions. This publication presents MLT data for registration years from 2008 to 2010. Prior to 2008, data is available in aggregate counts only from CIHI's Health Personnel Database.

Information Gap

An information gap exists between the population of interest and population of reference for the MLTDB.

- The profession of medical laboratory technology is not regulated in all Canadian jurisdictions. Currently, in Newfoundland and Labrador, P.E.I., B.C. and the territories (Yukon, the Northwest Territories and Nunavut), medical laboratory technology as a profession is not regulated. It is not mandatory for MLTs who are employed in unregulated jurisdictions to register with a provincial professional society or the CSMLS unless mandated by their employers. In all other provinces, MLTs must register with the provincial regulatory body to practise. A summary of regulation status by province and territory is presented in Appendix B.

The aspect of non-regulation and voluntary registration has a significant impact on the quality of data; in particular, information gap issues become a major concern for those jurisdictions that are neither regulated nor require mandatory registration with any professional association.

Under-Coverage

Under-coverage results when data that should be collected for the database is not included in the frame for the MLTDB. This section outlines where caution must be applied when analyzing data presented in this publication.

- In Quebec, MLTs who perform reserved activities are required to be a member of the OPTMQ, which submits registration data to CIHI. Some examples of reserved activities include taking specimens, performing phlebotomies and mixing substances together to complete a medication. Reserved activities are outlined in the *Professional Code of Quebec* (article 37.1). However, MLTs who do not perform reserved activities, such as working in clinical chemistry, a part of medical biology, do not have to be registered with the OPTMQ, although some of them may choose to be a member. Consequently, the statistics for Quebec may not represent the entire population of the profession as defined in the MLTDB.[ix]
- According to CIHI's methodology for identifying primary/secondary registrations, records in the MLTDB for MLTs who live outside Canada are excluded from publications for the workforce since they are identified as secondary registrations. Under-coverage occurs when registrants work in the profession in Canada but live in another country. However, such instances are not often observed across the country.

Over-Coverage

Over-coverage is the inclusion of units on the frame beyond the population of reference.

Over-coverage for the workforce may occur when an MLT does not work in the profession but is included in the workforce data.

- Employment Status has seven values defined in the Medical Laboratory Technologist Database Reference Guide: employed in medical laboratory technology; employed in medical laboratory technology but on leave; employed outside of medical laboratory technology; retired; unemployed; not collected and unknown. Each record was assigned one of the values when data was provided, and only the records that are of the first value—that is, employed in medical laboratory technology—are included in the publication. Nevertheless, Employment Status in the data for Newfoundland and Labrador, P.E.I., Quebec, Saskatchewan, Alberta, B.C. and the territories (Yukon, the Northwest Territories and Nunavut) was not fully provided from all members who were included in the workforce data in 2009 and 2010. **If the values for Employment Status other than *employed in medical laboratory technology* (and not on leave) could have been accurately identified, the records with these values would have been excluded.** However, the number of these records is believed to be very small and the impact of their inclusion should be limited for any analysis for the affected jurisdictions.
- According to CIHI's methodology for identifying primary/secondary registrations, records in the MLTDB with *unknown* or *not collected* values for Province/Territory of Residence and Province/Territory of Primary Employment are classified as primary registrations. If these records are true secondary registrations, over-coverage would occur.

ix. Information is compiled in accordance with input from the OPTMQ at the annual MLTDB meeting and through email.

Missing Values

Missing values are values attributed in instances where a data provider is unable to provide information for a registrant for a specific data element. This involves three potential situations:

- *Not collected*—when the information is not collected by the data provider on the registration form or a data provider cannot submit the information;
- *Unknown*—when the information was not provided by the registrant; and
- *Not applicable*—when the data element is not relevant to the situation of the registrant. (For example, when an MLT resides in the United States, the Canadian Province/Territory of Residence is not applicable.)

While the definitions for *not collected* and *unknown* are different, it was observed that the value *not collected* was submitted for *unknown* values for some data elements in some 2008 to 2010 data files. In these cases, the value is interpreted and included as *unknown*.

Appendix E illustrates *not collected* and *unknown* rates by core data element.
In cases where *not collected* was confirmed to be a misused value for *unknown*, the value was added to the rate for *unknown*.

Some of the results with a large percentage of *unknown* values were not included in this publication because their questionable accuracy limits their usability and may lead to erroneous interpretation. In other cases, the number of *unknown* values is clearly identified in the analysis and footnoted for explanation when necessary. As a criterion for publishing the current information in this report, a basic quality standard of less than or equal to 5% *unknown* values was implemented to maintain a balance between accuracy and offering a variety of information.

Unknown Values for Postal Code–Related Data Elements

A few derived data elements, such as health region, are based on the postal codes reported by registrants and Statistics Canada's PCCF+. While the majority of *unknown* values for health regions include *unknown* postal codes, they may also include a small portion of values that represent submitted postal codes that cannot be found and mapped to any health regions in the PCCF+.

Data Revisions

1. **Alberta, 2008:** Alberta's 2008 data has been revised since it was published in the 2008 annual report by converting the Employment Status from *unknown* to *employed in medical laboratory technology* for 257 registrants. This revision resulted in Alberta's 2008 total MLT workforce changing from 1,958 (published in the 2008 *Data Release*) to 2,215 (in the 2009 *Data Release*). See more details in the Data Adjustments section. This revision was made outside the database and affects the information in the publications only.

2. **Quebec, 2009:** Quebec does not have the areas of practice immunology, point-of-care testing and other. Meanwhile, the data for the areas of practice clinical chemistry, histology, transfusion medicine/science, and specimen procurement, receipt and dispatch for 2009

was not accurate in the original submission. Therefore, the areas of practice clinical chemistry, histology, immunology, specimen procurement, receipt and dispatch, transfusion medicine/science and point-of-care testing for Quebec in 2009 were converted from *yes/no* to *not collected* in the MLTDB.

3. **Newfoundland and Labrador, P.E.I., Nova Scotia, New Brunswick, Quebec, Manitoba, B.C. and the territories, 2008, 2009 and 2010:** For these provinces/territories, tombstone data elements have been validated across three years. In the case where the tombstone data for an individual is inconsistent, a correct value as confirmed by the data provider was applied to the element(s) for all the years. The tombstone data elements are those that are not supposed to change over time, including Gender, Year of Birth, Year of Initial Registration With Submitting Jurisdiction, Level of Basic Education in Medical Laboratory Technology, Year of Graduation for Basic Education in Medical Laboratory Technology, Institution of Graduation for Basic Education in Medical Laboratory Technology, Province/Territory of Graduation for Basic Education in Medical Laboratory Technology, Country of Graduation for Basic Education in Medical Laboratory Technology, Initial Province/Territory of Canadian Employment in Medical Laboratory Technology and Year of Initial Canadian Employment in Medical Laboratory Technology.

Data Adjustments

To better utilize data from the provinces and territories, CIHI assessed the overall quality of other data elements in the data files. Depending on the situation, adjustments using various methods have been made either by the data providers or by CIHI after consulting with the data providers and receiving their explicit consent to publish the data.

I. Adjustment for Registrants With *Unknown* Employment Status

For registrants with *unknown* Employment Status in some jurisdictions, adjustments have been made to include these registrants in the workforce by converting their Employment Status to *employed in medical laboratory technology*. Table 16 illustrates the adjustment of the registrants with missing Employment Status by province/territories for each data year.

1. **Newfoundland and Labrador, P.E.I., B.C. and the territories, 2009 and 2010:** All records with missing Employment Status have been assigned the data element value *employed in medical laboratory technology*. This adjustment was included in the database.
2. **Quebec, 2008 and 2009:** For all records, Employment Status was initially assigned the value *unknown* by the data provider. Assuming that most of the individuals were working in medical **laboratory** technology, the value was converted to *employed in medical laboratory technology* in the final version of the data submission from the data provider. This adjustment was made in the database.
3. **Saskatchewan, 2009 and 2010:** For registrants with *unknown* Employment Status, their data for gender and age is available. For these registrants, their missing Employment Status has been assigned to *employed in medical laboratory technology* and, as such, these registrants are included in the total workforce, gender and age statistics.

4. **Alberta, 2008 and 2009:** In 2008 and 2009, of the registrants with *unknown* Employment Status, more than 80% provided known values for most data elements. As such, the Employment Status for these records was converted to the value *employed in medical laboratory technology* and included in the report. Four primary employment data elements were used as a screening tool for inclusion; if values for these data elements were provided, the registrant was counted as part of the workforce and included in the report. These four data elements were Province of Employment, Full-Time/Part-Time Status, Place of Employment and Multiple Employment Sites. The remaining registrants, who did not provide information for Employment Status as well as for the four above-mentioned employment data elements, were excluded. This adjustment was made outside the database and included in the report only.

   The adjustment of including registrants with *unknown* Employment Status in the workforce is based on the assumption that most of them are employed in the profession. Although this adjustment may cause over-coverage, the bias will be smaller than leaving them out of the workforce altogether.

The number of registrations and the percentage of the workforce that was affected by the above adjustments are summarized in Table 16.

Table 16: Number of Registrants With *Unknown* Employment Status in Provinces and Territories Receiving Adjustments Affecting Medical Laboratory Technologist Workforce, 2008, 2009 and/or 2010

Province/Territories	Number of Registrants With *Unknown* Employment Status	Estimated Total Workforce	Percentage of Workforce Adjusted
N.L., 2009	239	347	68.9%
N.L., 2010	361	482	74.9%
P.E.I., 2009	15	107	14.0%
P.E.I., 2010	71	112	63.4%
Que., 2008	4,223	4,223	100.0%
Que., 2009	4,197	4,197	100.0%
Sask., 2009	337	864	39.0%
Sask., 2010	78	874	8.9%
Alta., 2008	257	2,215	11.6%
Alta., 2009	262	2,223	11.8%
B.C., 2009	1,200	2,126	56.4%
B.C., 2010	1,491	2,245	66.4%
Territories, 2009	27	49	55.1%
Territories, 2010	32	51	62.7%

II. Adjustment for Reporting More Data Elements

To report more data elements and maintain the 5% selection criterion for missing values, adjustments have been made to exclude a small number of registrants who entered *unknown* values for certain data elements for some provinces. Please see Table 17 for detailed information.

1. **Manitoba, 2009:** The level of *unknown* values for some employment data elements was consistently between 29% and 32%. These data elements included Place of Employment for Primary Employment, Position for Primary Employment and Areas of Practice for Primary Employment. To avoid discounting the entire pool of employment data because of the high levels of *unknown* values, most of the members who provided *unknown* values were excluded from the statistics for these data elements. This allowed CIHI to still report the majority of the members from the province. Consequently, the total for these data elements does not match the total workforce (or the total for demographic, education and certification data elements). This adjustment was made outside the database and applied to the above-mentioned primary employment data elements in the report only.

2. **Saskatchewan, 2009 and 2010:** The registrants with missing Employment Status did not have employment data elements reported for 2009, and did not have education and certification data elements reported for 2010. Consequently, the employment total for 2009 and education and certification totals for 2010 did not match the total workforce or the total head counts for gender and age. This adjustment was made outside the database and included in the report only.

3. **Alberta, 2010:** In 2010, 60 registrants were missing values for most employment-related elements: Employment Category, Full-Time/Part-Time Status, Province of Employment, Country of Employment, Place of Employment, Clinical Education/Preceptor Indicator and Major Function for Primary Employment. To report more data elements for Alberta and meet the 5% selection criterion, these 60 registrants were excluded from the employment-related section of the report. The adjustment was made outside the database and included in the report only.

The number of registrations and the percentage of the workforce that was affected by the above adjustments are summarized in Table 17.

Table 17: Number of Registrants With Unknown Values for Certain Data Elements in Provinces Receiving Adjustments, 2009 and/or 2010

Province	Number of Registrants With *Unknown* Values for Certain Data Elements and Excluded	Total Workforce	Percentage of Workforce Adjusted
Man., 2009 (for Employment)	297	1,001	29.7%
Sask., 2009 (for Employment)	337	864	39.0%
Sask., 2010 (for Education and Certification)	78	874	8.9%
Alta., 2010 (for Employment)	60	2,251	2.7%

Data Limitations

Voluntary Registration in Unregulated Provinces and Territories

Data in the MLTDB for Newfoundland and Labrador, P.E.I., B.C. and the territories (Yukon, the Northwest Territories and Nunavut) captures only those MLTs who voluntarily register with the CSMLS. The workforce data is filtered from records and included in this publication. The total supply of MLTs and their distributions in these jurisdictions, as well as across the country, are therefore not as accurate as they would be if all MLTs were registered.

Ontario Certification Discipline Information for 2008

Ontario collects more certification disciplines than the standard defined in the *Medical Laboratory Technologist Reference Guide*. These additional discipline areas were included as *other* in the MLTDB for 2008. As a result, this value was much higher for Ontario than for other jurisdictions. The 2009 and 2010 data has been mapped to appropriate certification disciplines, as defined in the *Reference Guide*, by the College of Medical Laboratory Technologists of Ontario, which provided the data to the MLTDB.

Combined Territory Information

In most data tables, information for Yukon, the Northwest Territories and Nunavut, wherever data is available, has been combined and labelled “Territories” to avoid small counts that could potentially lead to the identification of individuals.

Business Rules for CMDB Data

Indicator 1

Clinical Laboratory Compensation as a Percentage of Total Clinical Laboratory Expenses

An indicator that measures the percentage of hospital clinical laboratory expenses related to compensation. It includes the compensation component for management and operational support personnel and unit-producing personnel, but excludes medical personnel.

$$\frac{\text{Clinical Laboratory Compensation x 100}}{\text{Total Clinical Laboratory Expenses}}$$

Included are all hospitals that report MIS secondary financial account 7 50 * (Amortization on Major Equipment—Distributed) in functional centre account 7 1 4 10 *. Hospitals that do not report this account have been excluded because MIS secondary financial account 7 50 * is a major component of the denominator.

The MIS account code used in the numerator includes the secondary financial account 3* excluding 3 90*.

MIS account codes used in the denominator include the secondary financial accounts 3*, 4*, 5*, 6*, 7*, 8* and 9*.

Indicator 2

Clinical Laboratory Inpatient In-House Workload as a Percentage of Total Clinical Laboratory In-House Workload

An indicator that measures the percentage of hospital clinical laboratories' in-house workload that is attributed to inpatients.

$$\frac{\text{Clinical Laboratory Inpatient In-House Workload x 100}}{\text{Total Clinical Laboratory In-House Workload}}$$

Included are all hospitals that report service-recipient workload in clinical laboratory in MIS secondary statistical account 1 15 * in functional centre account 7 1 4 10 *.

The MIS account code used in the numerator includes the secondary statistical account 1 15 10*.

The MIS account code used in the denominator includes the secondary statistical account 1 15**.

Though some hospitals in Alberta report workload, Alberta is not included because the workload is associated with less than 10% of the clinical laboratory expenses across four years.

Privacy and Confidentiality

The Privacy and Legal Services Secretariat at CIHI has developed a set of guidelines to safeguard the privacy and confidentiality of data received by CIHI. These policies govern the release of data in publications and media releases, on CIHI's website and through ad hoc requests and special studies. The documents entitled *Privacy and Confidentiality of Health Information at CIHI: Principles and Policies for the Protection of Personal Health Information* and *Privacy Impact Assessment: Medical Laboratory Technologist Database* can be found on CIHI's website (www.cihi.ca).

MLTDB Workforce Products and Services

The following publications relevant to this publication may be downloaded in electronic (PDF) format, free of charge, at www.cihi.ca:

- *Medical Laboratory Technologist Database Reference Guide, Version 1.0*
- *Medical Laboratory Technologist Database, 2009 Data Release*
- *Medical Laboratory Technologist Database, 2008 Data Release*
- *Medical Laboratory Technologists and Their Work Environment*

Request for Services

CIHI completes ad hoc requests and special analytical projects on a cost-recovery basis using data from the MLTDB. Such requests that are short queries generally can be handled through standard reports and do not require major programming resources, while special analytical projects require project planning and the commitment of extra resources.

For further information on CIHI's data request procedure associated with these products and services, including process and pricing, please visit our website at www.cihi.ca/requestdata.

Appendix A—Twelve-Month Registration Periods,‡ by Province/Territories, 2010

Registration Period by Jurisdiction		2010												2011			
		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
Jan. 1–Dec. 31	**N.L.**	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx				
Jan. 1–Dec. 31	**P.E.I.**	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx				
Jan. 1–Dec. 31	**N.S.**	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx				
Jan. 1–Dec. 31	**N.B.**	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx				
Apr. 1–Mar. 31	**Que.**				xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	
Jan. 1–Dec. 31	**Ont.**	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx				
Jan. 1–Dec. 31	**Man.**	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx				
Dec. 1–Nov. 30	**Sask.**	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx					
Jan. 1–Dec. 31	**Alta.**	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx				
Jan. 1–Dec. 31	**B.C.**	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx				
Jan. 1–Dec. 31	**Territories§**	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx				

Notes

‡ Registration periods for MLTs in Newfoundland and Labrador, P.E.I., B.C. and the territories (Yukon, the Northwest Territories and Nunavut) are represented by voluntary registrations with the Canadian Society for Medical Laboratory Science.

§ Territories include Yukon, the Northwest Territories and Nunavut.

xxx Denotes that the month is included as part of the jurisdiction's 12-month registration period.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Appendix B—Regulation Status of Provinces and Territories

Regulation Status of Provinces and Territories	
Regulated Provinces	**First Year of Regulation**
N.S.	2004
N.B.	1992
Que.	1973
Ont.	1994
Man.	2007
Sask.	1996
Alta.	2002
Unregulated Provinces and Territories	
N.L.	N/A
P.E.I.	N/A
B.C.	N/A
Y.T.	N/A
N.W.T.	N/A
Nun.	N/A

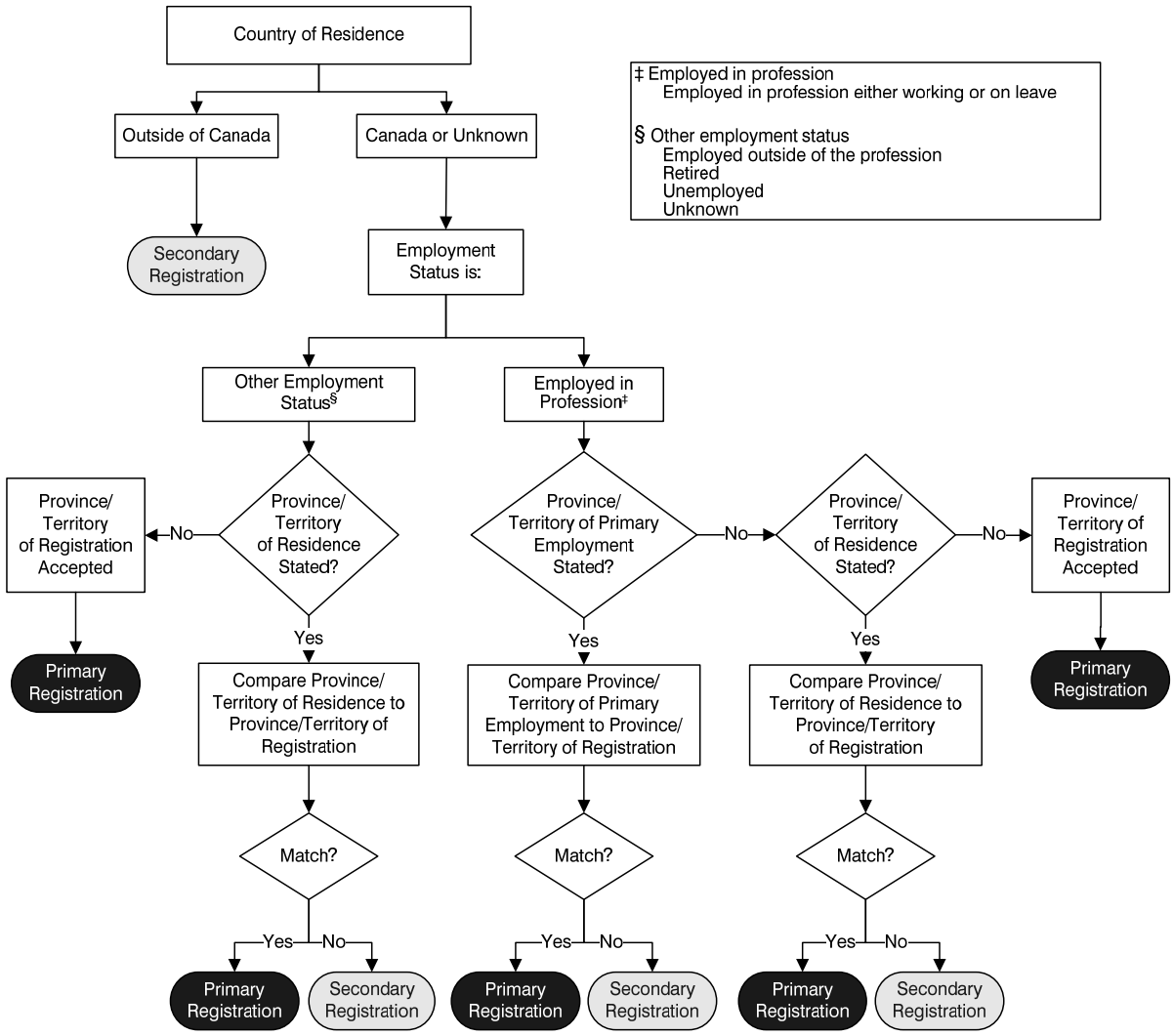
Note
N/A: not applicable.
Source
Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Appendix C—Data Sources

Data Source	Corresponding Province/ Territory of Data Submission	Province/Territory Abbreviation
Nova Scotia College of Medical Laboratory Technologists	Nova Scotia	N.S.
New Brunswick Society of Medical Laboratory Technologists	New Brunswick	N.B.
Ordre professionnel des technologistes médicaux du Québec	Quebec	Que.
College of Medical Laboratory Technologists of Ontario	Ontario	Ont.
College of Medical Laboratory Technologists of Manitoba	Manitoba	Man.
Saskatchewan Society of Medical Laboratory Technologists	Saskatchewan	Sask.
Alberta College of Medical Laboratory Technologists	Alberta	Alta.
Canadian Society for Medical Laboratory Science	Newfoundland and Labrador Prince Edward Island British Columbia Northwest Territories Yukon Nunavut	N.L. P.E.I. B.C. N.W.T. Y.T. Nun.

Source
Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Appendix D—Identification of Primary/ Secondary Registrations



Source
Medical Laboratory Technologist Database, Canadian Institute for Health Information.

Appendix E—Medical Laboratory Technologist Records Where Data Is Not Collected and Percentage of Records With *Unknown* Values for Core Data Elements, by Jurisdiction, Canada, 2009 to 2010

Data Element	N.L.		P.E.I.		N.S.		N.B.		Que.		Ont.		Man.		Sask.		Alta.		B.C.		Y.T.		N.W.T.		Nun.	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
Gender	66.6	73	55.2	59															62.4	64	38.1	38	57.7	64	62.5	78
Year of Birth	67.7	74	56.9	61			0.3								2.7		0.1		63.9	66	38.1	38	57.7	64	62.5	78
Province/Territory of Residence			0.9	1					0.1								0.1									
Country of Residence																										
Province/Territory of Registration																										
Level of Basic Education in Medical Laboratory Technology	66.6	73	54.3	58	0.4				4.9	4	27.5	91	8.8	2	34.9		13.6	5	63	65	38.1	38	57.7	64	62.5	78
Year of Graduation for Basic Education in Medical Laboratory Technology	66.6	73	54.3	58	0.4		0.6	1.0			27.8	89	3.9		34.9		60.2	54	63.1	65	38.1	38	57.7	93	62.5	78
Institution of Graduation for Basic Education in Medical Laboratory Technology	66.6	73	54.3	58	0.5	1.0	10.9	11	X	X	28.2	90	2.4		34.9		60	54	63.1	65	38.1	38	57.7	93	62.5	78
Province/Territory of Graduation for Basic Education in Medical Laboratory Technology	66.6	73	54.3		0.5	1.0	11.5	11	100	X	27.7	90	2.4		34.9		60	54	63.1	65	38.1	38	57.7	93	62.5	78
Country of Graduation for Basic Education in Medical Laboratory Technology	66.6	73	54.3	58	0.5	1.0	11.5	10	100	X	27.6	X	2.4		34.9		60	54	63.1	65	38.1	65	57.7	93	62.5	78

Data Element	N.L.		P.E.I.		N.S.		N.B.		Que.		Ont.		Man.		Sask.		Alta.		B.C.		Y.T.		N.W.T.		Nun.
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009
Certification Area 1	0.3								X	X	5.2		6.3	5	34.9	2				5					
Certification Level 1									X	X	4.4		6.3	5	34.9					5					
Certification Area 2	89.3	91	94.8	95			7.6		X	X	97.5	X	2.8	97	34.9	99.9	X	92	93	100	X	100	X	100	X
Certification Level 2	89	91	94.8	95			7.6		X	X	96.8	X	2.7	97	34.9	99.9	X	92	93	100	X	100	X	100	X
Initial Province/ Territory of Canadian Employment in Medical Laboratory Technology	66.6	73	55.2	59	4.9	5	1	1	12.1		12.2	5	29.8		40.8	100	X	71	65	50	X	50	64	57	78
Total Usual Weekly Hours of Work	68.8	75	58.6	64	89.8	15	2.4	3	X	X	60.5				52.1	7	X	74	69	50	38	54	71	57	78
Employment Category (for Primary Employment)	66.3	71	53.5	57	82	6	0.3		100	99	67.7	3	X	4	43	7	12	69	64	50	33	50	64	57	78
Full-Time/Part-Time Status (for Primary Employment)	67.7	72	55.2	59	83.3	8			4.5		7.4	7	X	5	43	14	18	70	66	50	33	50	64	57	78
Postal Code of Employment (for Primary Employment)	78.4	82	68.1	71	0.2				3.1	4		5	51	5	45.1	8	10	80	78	55	38	58	68	57	78
Position (for Primary Employment)	66	71	53.5	57	0.1				2.8		2.1	3	31.3	6	43.1	4	10	68	64	50	33	50	64	57	78
Place of Employment (for Primary Employment)	66	71	53.5	57	0.1				3.1		1.7	2	30.3	6	43.1	4	10	68	64	50	33	50	64	57	78
Clinical Education/ Preceptor Activity Indicator (for Primary Employment)	66	71	53.5	95			X				81.3		29.4	8	42.9	5	10	69	64	50	33	50	64	57	78
Major Function (for Primary Employment)	66	71	53.5	95	0.2				X	X	7.8	3	32.5	6	43.1	6	11	69	64	50	33	50	64	57	78
Area of Practice for Primary Employment—Clinical Chemistry	65.8	71	53.5	57	0.3	1.0					10.2		29.4	43	43.1	4	9	68	64	50	33	50	64	57	78

Data Element	N.L.		P.E.I.		N.S.		N.B.		Que.		Ont.		Man.		Sask.		Alta.		B.C.		Y.T.		N.W.T.		Nun.
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009
Area of Practice for Primary Employment—Clinical Genetics	65.8	71	53.5	57							10.3		29.4	43	43.1		8.6	10	61.5	64	33.3	33	61.5	57	78
Area of Practice for Primary Employment—Diagnostic Cytology	65.8	71	53.5	57							10.3		29.4	43	43.1		8.6	10	61.5	64	33.3	33	61.5	57	78
Area of Practice for Primary Employment—Hematology	65.8	71	53.5	57	0.7	1.0					10.2		29.4	43	43.1		8.6	9	61.5	64	33.3	33	61.5	57	78
Area of Practice for Primary Employment—Histology	65.8	71	53.5	57	0.1	1.0					10.3		29.4	43	43.1		8.6	9	61.5	64	33.3	33	61.5	57	78
Area of Practice for Primary Employment—Immunology	65.8	71	53.5	57	7.1	2.0					10.3		29.4	43	43.1		8.6	10	61.5	64	33.3	33	61.5	57	78
Area of Practice for Primary Employment—Microbiology	65.8	71	53.5	57		1.0					10.3		29.4	43	43.1		8.6	9	61.5	64	33.3	33	61.5	57	78
Area of Practice for Primary Employment—Specimen Procurement, Receipt and Dispatch	65.8	71	53.5	57	6.6	2.0					10.3		29.4	43	43.1		8.6	10	61.5	64	33.3	33	61.5	57	78
Area of Practice for Primary Employment—Transfusion Medicine/ Science	65.8	71	53.5	57	0.5	1.0					10.3		29.4	43	43.1		8.6	9	61.5	64	33.3	33	61.5	57	78
Area of Practice for Primary Employment—Point-of-Care Testing	65.8	71	53.5	57	70.9	11					10.3		99.6	43	43.1		8.6	10	61.5	64	33.3	33	61.5	57	78
Area of Practice for Primary Employment—Other	65.8	71	53.5	57	77.3	12			X	X	10.3		29.4	43	43.1		8.6	9	61.5	64	33.3	33	61.5	57	78
Main Area of Practice for Primary Employment	66	71	54.3	58		1.0			43.2	16	81.7	12	51.7	43	43.2		58.7	7	61.9	64	33.3	33	69.2	57	78

Notes

X Indicates that items are not collected or submitted.

Blank cells indicate that non-response rates for the items are 0.

Percentages indicate the *unknown* rate in the Medical Laboratory Technologist Database.

Source

Medical Laboratory Technologist Database, Canadian Institute for Health Information.

References

1. Statistics Canada, “Quarterly Population Estimates, National Perspective—Population,” *Quarterly Demographic Estimates—April to June 2011*, accessed from <http://www.statcan.gc.ca/pub/91-002-x/2011002/t002-eng.pdf>.

2. Statistics Canada, *The Canadian Labour Market at a Glance* (2008), accessed from <http://www.statcan.gc.ca/pub/71-222-x/2008001/sectionm/m-age-eng.htm>, catalogue no. 71-222-XWE.

3. Canadian Medical Association, *Conjoint Accreditation Services*, accessed on July 21, 2011, from <http://www.cma.ca/index.php/ci_id/19316/la_ied/1.htm>.

4. Canadian Society for Medical Laboratory Science, *Working in Medical Laboratory Science Is a Fascinating Career That Combines Science and Technology With the Opportunity to Help People*, accessed on July 21, 2011, from <http://www.csmls.org/en/career-information.html>.

5. Working in Canada, *Medical Laboratory Technologists and Pathologists’ Assistants*, accessed on July 21, 2011, from <http://www.workingincanada.gc.ca/>.

6. M. Grant and K. Davis, *Clinical Placements for Canadian Medical Laboratory Technologists: Costs, Benefits and Alternatives* (Hamilton, Ont.: Canadian Society for Medical Laboratory Science, 2004).

7. Canadian Society for Medical Laboratory Science, *Frequently Asked Questions*, accessed on July 21, 2011, from <http://www.csmls.org/en/faq.html>.

8. Ordre professionnel des technologistes médicaux du Québec, “Émission d’un permis,” *Admission/Cotisation*, accessed on July 21, 2011, from <http://www.optmq.org/Default.aspx?section=static&id=33>.

9. Canadian Society for Medical Laboratory Science, *Canadian Society for Medical Laboratory Science 2010 Annual Report*, accessed on July 27, 2011, from <http://www.csmls.org/images/csmls/Publications_and_Research/In-House/Annual_Reports/csmls-2010-annual-report.pdf>.

10. Canadian Society for Medical Laboratory Science, *Prior Learning Assessment for Internationally Educated Medical Laboratory Technologists*, accessed from <http://www.csmls.org/en/certification/internationally-trained-technologists.html>.

11. M. Grant, *Bridging Programs for Internationally Educated Medical Laboratory Technologists: A Business Case—Final Report* (2009), accessed on July 21, 2011, from <http://www.csmls.org/csmls/media/documents/publications/reports/BridgingPrograms_FinalReport_EN.pdf>.

12. M. M. Grant and K. H. Davis, *Simulation-Based Learnings in Medical Laboratory Education: Current Perspectives and Practices* (Hamilton, Ont.: Canadian Society for Medical Laboratory Science, 2007).

13. Canadian Institute for Health Information, *Medical Laboratory Technologists and Their Work Environment* (Ottawa, Ont.: CIHI, 2010).

Production of this report is made possible by financial contributions from Health Canada and provincial and territorial governments. The views expressed herein do not necessarily represent the views of Health Canada or any provincial or territorial government.

Canadian Institute for Health Information
495 Richmond Road, Suite 600
Ottawa, Ontario K2A 4H6

Phone: 613-241-7860
Fax: 613-241-8120
www.cihi.ca
copyright@cihi.ca

ISBN 978-1-77109-009-4 (PDF)

How to cite this document:
Canadian Institute for Health Information, *Medical Laboratory Technologists in Canada, 2010* (Ottawa, Ont.: CIHI, 2012).

Cette publication est aussi disponible en français sous le titre *Technologistes de laboratoire médical au Canada 2010*.
ISBN 978-1-77109-010-0 (PDF)

Talk to Us

CIHI Ottawa
495 Richmond Road, Suite 600
Ottawa, Ontario K2A 4H6
Phone: 613-241-7860

CIHI Toronto
4110 Yonge Street, Suite 300
Toronto, Ontario M2P 2B7
Phone: 416-481-2002

CIHI Victoria
880 Douglas Street, Suite 600
Victoria, British Columbia V8W 2B7
Phone: 250-220-4100

CIHI Montréal
1010 Sherbrooke Street West, Suite 300
Montréal, Quebec H3A 2R7
Phone: 514-842-2226

CIHI St. John's
140 Water Street, Suite 701
St. John's, Newfoundland and Labrador A1C 6H6
Phone: 709-576-7006

www.cihi.ca

Canadian Institute
for Health Information

Institut canadien
d'information sur la santé