



Canadian Society for Medical Laboratory Science  
Société canadienne de science de laboratoire médical

# Competency Profile

## Medical Laboratory Assistant

Competencies Expected of an Entry-Level  
Medical Laboratory Assistant

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## Code of Professional Conduct

- Medical laboratory professionals are dedicated to serving the health care needs of the public. The welfare of the patient and respect for the dignity of the individual shall be paramount at all times.
- Medical laboratory professionals work with other health care professionals, to provide effective patient care.
- Medical laboratory professionals shall promote the image and status of their profession by maintaining high standards in their professional practice and through active support of their professional bodies.
- Medical laboratory professionals shall protect the confidentiality of all patient information.
- Medical laboratory professionals shall take responsibility for their professional acts.
- Medical laboratory professionals shall practise within the scope of their professional competence.
- Medical laboratory professionals shall endeavour to maintain and improve their skills and knowledge and keep current with scientific advances. They will uphold academic integrity in all matters of professional certification and continuing education.
- Medical laboratory professionals shall share their knowledge with colleagues and promote learning.
- Medical laboratory professionals shall be aware of the laws and regulations governing medical laboratory technology and shall apply them in the practice of their profession.
- Medical laboratory professionals shall practise safe work procedures at all times to ensure the safety of patients and co-workers and the protection of the environment.

*Revised November 2011 © CSMLS*

# Examination Blueprint

CSMLS MLA exams are based on this plan

Categories	Mark %
1. <b>Safe Work Practices</b>	10-15%
2. <b>Data and Specimen Collection and Handling</b>	45-60%
3. <b>Pre-analytical Procedures</b>	15-20%
4. <b>Reagent Preparation</b>	2-4%
5. <b>Communication and Interaction</b>	2-4%
6. <b>Quality Management</b>	2-4%
7. <b>Professional Practice</b>	5-10%
8. <b>Critical Thinking</b>	5-10%

# Assumptions about Medical Laboratory Science

<b>The Medical Laboratory Assistant</b>
<p>Upon successful completion of an accredited program/CSMLS prior learning assessment and the CSMLS national certification examination, the Medical Laboratory Assistant:</p> <ul style="list-style-type: none"><li>• has developed a broad knowledge base and practical skills enabling the procurement and preparation of specimens for analysis according to institutional policies and professional standards</li><li>• applies critical thinking and problem-solving strategies to ensure best practices</li><li>• practices and promotes the principles of quality management</li><li>• practices to ensure the safety of patients, colleagues, self, and the environment</li><li>• contributes to the health care and education of the public, promotes patient welfare and respects patient diversity, dignity, and confidentiality</li><li>• is an integral member of the health care team who shares knowledge, promotes learning, and collaborates with other professionals in providing effective patient care</li><li>• is responsible and accountable for professional acts and practises according to standards of practice as well as laws and regulations governing the profession</li><li>• abides by the CSMLS Code of Professional Conduct</li><li>• uses effective interpersonal skills to maintain a professional relationship with colleagues, patients/clients and health care professionals</li></ul>
<b>The Client/Patient</b>
<p>Is any individual who interacts with the medical laboratory assistant, e.g. patient, patient representative, health care professionals and other laboratory professionals</p>
<b>The Environment</b>
<ul style="list-style-type: none"><li>• The medical laboratory assistant is prepared to work in a variety of settings</li><li>• The medical laboratory assistant practises in a safe environment that is dynamic and evolving</li></ul>

## MLA Competency Categories

Categories	Description
<b>1. Safe Work Practices</b>	The medical laboratory assistant conducts their professional practice according to established protocols, safety guidelines, and existing legislation.
<b>2. Data and Specimen Collection and Handling</b>	The medical laboratory assistant verifies relevant data and ensures that appropriate specimens are collected and handled according to established protocols.
<b>3. Pre-analytical Procedures</b>	The medical laboratory assistant performs pre-analytical procedures on specimens from a variety of sources according to established protocols.
<b>4. Reagent Preparation</b>	The medical laboratory assistant uses laboratory equipment and instruments to prepare reagents according to established protocols.
<b>5. Communication and Interaction</b>	The medical laboratory assistant interacts with patients/clients and other health care professionals using effective communication, teamwork skills and inter-professional collaboration.
<b>6. Quality Management</b>	The medical laboratory assistant practises and promotes the principles of quality management.
<b>7. Professional Practice</b>	The medical laboratory assistant meets the legal and ethical requirements of practice and protects the patient's right to a reasonable standard of care. Professional responsibility encompasses scope of practice, accountability, and professional development.
<b>8. Critical Thinking</b>	The medical laboratory assistant applies critical thinking skills to constructively investigate, evaluate and problem solve.

## Category 1 Safe Work Practices

The medical laboratory assistant conducts professional practice according to established protocols, safety guidelines, and existing legislation.

Number	Competency
1.01	Applies the principles of routine practices
1.02	Uses personal protective equipment, e.g. gloves, gowns, mask, face shields, aprons
1.03	Applies laboratory hygiene and infection control practices
1.04	Minimizes possible dangers from biological specimens, laboratory supplies and equipment
1.05	Uses laboratory safety devices, e.g. biological safety cabinet, fume hood, laminar flow cabinet, safety pipetting device, safety container and carrier, safety shower, eye wash station
1.06	Labels, dates, handles, stores and disposes chemicals, dyes, reagents and solutions according to legislation, e.g. WHMIS
1.07	Handles and disposes sharps
1.08	Stores, handles, transports and disposes biological and other hazardous materials according to legislation
1.09	Uses disinfection and sterilization methods
1.10	Minimizes potential hazards related to disinfection/sterilization methods
1.11	Applies measures in response to laboratory accidents/incidents
1.12	Applies spill containment and clean up procedures for biological and other hazardous materials
1.13	Responds appropriately to workplace emergencies
1.14	Reports and documents all incidents related to safety and personal injury
1.15	Applies proper ergonomic principles to minimize risk of injury (new)

## Category 2

### Data and Specimen Collection and Handling

The medical laboratory assistant verifies relevant data and ensures that appropriate specimens are collected and handled according to established protocols.

Number	Competency
2.01	Demonstrates fundamental knowledge of medical terminology, physiology, anatomy and disease processes
2.02	Verifies relevant information is provided for test request
2.03	Provides information to the client on specimen collection, transportation and storage
2.04	Confirms the identity of the patient and performs venipuncture and capillary blood collection to obtain appropriate samples for laboratory analysis
2.05	Performs sample collection and chain of custody procedures relating to specimens with legal implications
2.06	Adheres to established protocols for labeling and traceability of specimens
2.07	Delivers specimens taking into account priority and stability
2.08	Assesses specimen suitability for testing
2.09	Verifies that the pertinent data on the specimen and requisition correspond
2.10	Accessions specimens into laboratory information systems
2.11	Adheres to guidelines for specimen retention, storage, transportation and disposal
2.12	Prepares specimens for analysis
2.13	Identifies, documents and initiates corrective action for pre-examination (pre-analytical) errors
2.14	Prepares documentation, packages specimens for shipping, seals and labels shipping containers in accordance with Transportation of Dangerous Goods (TDG) regulations
2.15	Describes the role of the laboratory in point-of-care testing (new)
2.16	Performs point-of-care techniques, identifies sources of interference and initiates corrective action as delegated (new)

## Category 3

### Pre-analytical Procedures

The medical laboratory assistant performs pre-analytical procedures on specimens from a variety of sources according to established protocols.

Number	Competency
3.01	Loads specimens for analysis on laboratory equipment
3.02	Prepares smears manually or using automated equipment
3.03	Performs routine staining and cover slipping either manually or using automated equipment, e.g. Jenner-Giemsa, Gram, Wright, Hematoxylin and Eosin, Papanicolaou, Leishman
3.04	Selects appropriate culture media, inoculates and incubates specimens using aseptic technique



## Category 4

### Reagent Preparation

The medical laboratory assistant uses laboratory equipment and instruments to prepare reagents according to established protocols.

Number	Competency
4.01	Prepares/stores reagents, solutions, stains or media to specifications <ul style="list-style-type: none"><li>• Performs calculations/dilutions for reagent preparation</li></ul>
4.02	Uses reagent preparation equipment, e.g. pH meter, balance, autoclave
4.03	Cleans glassware according to specifications

## Category 5

### Communication and Interaction

The medical laboratory assistant interacts with patients/clients and other health care professionals using effective communication, teamwork skills and inter-professional collaboration.

Number	Competency
5.01	Practises effective communication with colleagues, patients/clients and other health care professionals: <ul style="list-style-type: none"> <li>• Active listening</li> <li>• Verbal communication</li> <li>• Non-verbal communication</li> <li>• Written communication</li> <li>• Conflict management</li> <li>• Identifies barriers to effective communication</li> <li>• Uses technology appropriately to facilitate communication</li> </ul>
5.02	Demonstrates effective teamwork skills
5.03	Demonstrates interdisciplinary/interprofessional team skills: <ul style="list-style-type: none"> <li>• Communication</li> <li>• Collaboration</li> <li>• Role clarification</li> <li>• Reflection</li> </ul>
5.04	Demonstrates adaptive skills when interacting with patients/clients

## Category 6 Quality Management

The medical laboratory assistant practises and promotes the principles of quality management systems.

Number	Competency
6.01	Demonstrates knowledge of quality systems essentials (QSE)
6.02	Follows established protocols as defined in policy, process and procedure manuals
6.03	Prepares and runs quality controls/standards on equipment, to be validated by a medical laboratory technologist (new)
6.04	Assists in updating procedures and protocols, as well as other reference information and communication
6.05	Participates in workflow analysis to identify issues and solve problems
6.06	Identifies, documents and reports deficiencies that may affect the quality of testing (new)
6.07	Performs and documents preventative maintenance and reagent changes, according to established protocols
6.08	Recognizes malfunctions in equipment/instruments, initiates and documents corrective action
6.09	Participates in continuous quality improvement activities (new)
6.10	Demonstrates knowledge of risk management (new)
6.11	Participates in internal and external quality assurance activities, e.g. proficiency testing, audits, accreditation (new)
6.12	Demonstrates knowledge of inventory maintenance
6.13	Demonstrates information management skills, e.g. computer, laboratory information systems and related technology

## Category 7

### Professional Practice

The medical laboratory assistant meets the legal and ethical requirements of practice and protects the patient's right to a reasonable standard of care. Professional responsibility encompasses scope of practice, accountability, and professional development.

Number	Competency
7.01	Maintains confidentiality of health care information
7.02	Complies with legislations that govern the medical laboratory profession
7.03	Recognizes limitations of own competence and seeks action to resolve
7.04	Obtains informed consent prior to procedure and respects a patient's right to refuse
7.05	Recognizes potentially dangerous situations and understands the right to refuse unsafe work
7.06	Takes responsibility and is accountable for professional actions
7.07	Recognizes the need for and participates in continuing education and training
7.08	Promotes the image and status of the profession of medical laboratory science as members of the health care team
7.09	Recognizes how ethical issues in the health care environment affect the medical laboratory assistant and clients
7.10	Demonstrates knowledge of the health care system, professional laboratory organizations and their responsibilities
7.11	Demonstrates knowledge of the determinants of health and their implications for the laboratory system (new)
7.12	Respects the diversity, dignity, values, and beliefs of patients/clients and colleagues
7.13	Demonstrates knowledge of interpersonal skills: <ul style="list-style-type: none"> <li>• Recognizes signs of individual and group stress</li> <li>• Recognizes signs of patient stress</li> <li>• Exhibits empathy when assisting patients and colleagues</li> </ul>

## Category 8 Critical Thinking

The medical laboratory assistant applies critical thinking skills to constructively investigate, evaluate and problem solve.

Number	Competency
8.01	Demonstrates knowledge of a dynamic environment; adapts and responds to change
8.02	Recognizes that change initiated in one area may impact other areas of health care services
8.03	Engages in reflective practice; stops and thinks about practice, consciously analyzes decision making and draws conclusions to improve future practice (new)
8.04	Organizes work to accommodate priorities
8.05	Maximizes efficient use of resources, e.g. time, equipment, personnel
8.06	Demonstrates effective problem solving/trouble-shooting strategies and initiates appropriate follow up (new)
8.07	Contributes to implementation strategies that integrate timelines, resource management and communication related to projects or research/studies (new)
8.08	Demonstrates the ability to make evidence-based decisions (new)

## CSMLS Acronyms & Definitions – MLA

### Acronymes et définitions de la SCSLM – ALM

English		Français	
ALP	Alkaline Phosphatase	Phosphatase alcaline	ALP/PAL
ALT	Alanine Aminotransferase	Alanine aminotransférase	ALT
APTT	Activated partial thromboplastin time	Temps de thromboplastine partielle activée Temps de céphaline activé	TCA
ASAP	As Soon As Possible	Dès que possible	
AST	Aspartate Aminotransferase	Aspartate aminotransférase	AST
BUN	Blood Urea Nitrogen	Azote uréique sanguin	BUN
C & S	Culture & Sensitivity	Culture et antibiogramme	
CAMP	Christie, Atkins, and Munch-Petersen	Test Christie, Atkins et Munch-Petersen	CAMP
CBC	Complete blood count	Formule sanguine complète	FSC
CFU	Colony forming Unit	Unité formant colonie	UFC
CIN	Cefsulodin-Irgasan-Novobiocin Agar	Gélose Cefsulodine-Irgasan-Novobiocine	CIN
CK	Creatine Kinase	Créatine kinase	CK
CMV	Cytomegalovirus	Cytomégalovirus	CMV
CNA	Colistin Nalidixic Acid agar	Gélose Colistine et Acide nalidixique	CNA
COPD	Chronic Obstructive Pulmonary Disease	Maladie pulmonaire obstructive chronique	MPOC
CPR	Cardio Pulmonary Resuscitation	Réanimation cardiorespiratoire	RCR
CSF	Cerebrospinal fluid (SF)	Liquide céphalorachidien	LCR
DAT	Direct antiglobulin test	Test à l'antiglobuline direct (Coombs direct)	TAD
DNA	Deoxyribonucleic Acid	Acide désoxyribonucléique	ADN
DNR	Do not resuscitate order	Ordre de ne pas réanimer	DNR
DOB	Date of Birth	Date de naissance	DDN

English		Français	
EDTA	Ethylenediamine tetraacetic acid	Éthylène diamine tétraacétate	EDTA
ERC	Erythrocyte	Érythrocyte / Globule rouge	GR
ESR	Erythrocyte sedimentation rate	Vitesse de sédimentation érythrocytaire	VSE
FOB	Faecal Occult Blood	Sang occulte dans les selles	
G6PD	Glucose-6-phosphate	Glucose-6-phosphate	G6PD
GGT	Gamma-glutamyl Transferase	Gamma-glutamyl transférase	GGT
GHS	Globally Harmonized System (in place of WHMIS)	Système général harmonisé (remplace SIMDUT)	SGH
GTT	Glucose Tolerance Test	Hyperglycémie provoquée <i>per os</i>	HGPO
H&E	Hematoxylin and eosin	Hématoxyline et éosine	H&E
HbA1C	Hemoglobin A1c, glycated hemoglobin	Hémoglobine A1c, hémoglobine glyquée	HbA1c
HCG	Human Chorionic Gonadotrophin	Gonadotrophine chorionique humaine	HCG
HCT	Hematocrit	Hématocrite	Ht
HDL	High-density Lipoprotein	Lipoprotéine de haute densité	HDL
HDN	Hemolytic disease of the newborn	Maladie hémolytique du nouveau-né	MHNN
HGB	Hemoglobin	Hémoglobine	Hb
HIV	Human Immunodeficiency Virus	Virus de l'immunodéficience humaine	VIH
IAT	Indirect antiglobulin test	Test à l'antiglobuline indirect (Coombs indirect)	TAI
INR	International normalized ratio	Rapport international normalisé	RNI
LAP	Leukocyte alkaline phosphatase	Phosphatase alcaline leucocytaire	PAL
LD	Lactate dehydrogenase	Lactate-déshydrogénase	LD
LDL	Low-density Lipoprotein	Lipoprotéine de basse densité	LDL
LIS	Laboratory information system	Système d'information de laboratoire	SIL
LKS	Leukocytes	Leucocytes / Globule blanc	GB
MCH	Mean corpuscular hemoglobin	Teneur globulaire moyenne en hémoglobine	TGMH
MCHC	Mean corpuscular hemoglobin concentration	Concentration-globulaire moyenne en hémoglobine	CGMH

English		Français	
MCV	Mean corpuscular volume	Volume globulaire moyen	VGM
MSDS	Material Safety Data Sheet	Fiche signalétique	FS
NPO*	Nothing by mouth	Ne rien administrer par voie orale	NPO*
NRBC	Nucleated red blood cell	Globule rouge nucléé / érythroblaste	
ONPG	Ortho-nitrophenyl B-galactopyranoside	Ortho-nitrophénol B-galactopyranoside	ONPG
PCR	Polymerase chain reaction	Réaction en chaîne de la polymérase	PCR
PEA	Phenylethyl Alcohol Agar	Gélose Phényl Éthyle Alcool	PEA
PKU	Phenylketonuria	Phénylcétonurie	PKU/PCU
PLT	Platelet	Plaquette	Plaq
POCT	Point of Care Testing	Analyse hors-laboratoire	AHL
PPE	Personal Protective Equipment	Équipement de protection individuelle	EPI
PST	Plasma Separator Tube	Tube avec gel séparateur de plasma	PST
PT	Prothrombin time	Temps de prothrombine/Temps de Quick	TP/TQ
PYR	Pyrrolidonyl-B-Naphthylamide	Pyrrolidonyl-B-Naphthylamide	PYR
O&P	Ova and Parasites	Recherche de parasites (oeufs et vers)	
QA	Quality assurance	Assurance de la qualité	AQ
QC	Quality control	Contrôle de la qualité	CQ
QSE	Quality Systems Essentials	Éléments essentiels du système de gestion de la qualité	
RBC	Red blood cell	Globule rouge	GR
RDW	Red cell distribution width	Indice de distribution du volume érythrocytaire	IDVE
RNA	Ribonucleic Acid	Acide ribonucléique	ARN
RT	Room Temperature	Température ambiante	
SAF	Sodium acetate fixative	Fixateur acétate de sodium, acide acétique, formaline	SAF
SD	Standard deviation	Écart-type	SD
SOP	Standard operating procedure	Procédure opérationnelle normalisée	PON
SPS	Sodium polyanethol sulphonate	Polyanétholsulfonate de sodium	SPS



English		Français	
STAT**	Immediately	Immédiatement	STAT**
SST	Serum Separator Tube	Tube avec gel séparateur de sérum	SST
T3	Triiodothyronine	Triiodothyronine	T3
T <sub>4</sub>	Thyroxine	Thyroxine	T4
TAT	Turnaround Time	Délai d'exécution/Délai de traitement	
TB	Tuberculosis	Tuberculose	BK
TDG	Transport of Dangerous Goods	Transport de marchandises dangereuses	TMD
TRALI	Transfusion-related acute lung injury	Complication pulmonaire post-transfusion	TRAILI
TIBC	Total iron binding capacity	Capacité totale de fixation du fer	TIBC/CTFF
TSH	Thyroid-stimulating hormones	Hormones stimulant la thyroïde	TSH
WBC	White blood cell	Globule blanc	GB
WHMIS	Workplace Hazardous Materials Information System	Système d'information sur les matières dangereuses utilisées au travail	SIMDUT

\*NPO: also known as nil per os (npo or NPO), a Latin phrase whose English translation is most literally, "nothing through the mouth" / NPO: du latin nil per os, locution latine signifiant rien par la bouche ou ne rien administrer par voie orale

\*\*STAT: derived from the Latin word *Statim*, meaning immediately / STAT: dérivé du mot *Statim* en latin, qui signifie immédiatement



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