



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

# Competency Profile Diagnostic Cytology

Competencies Expected of an Entry-Level Diagnostic Cytology  
Medical Laboratory Technologist

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Effective with the June 2017 examination

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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 Diagnostic Cytology MLT exams are based on this plan

Categories		Mark %
1. <b>Safe Work Practices</b>		2-4%
2. <b>Data Collection and Specimen Procurement/Receipt</b>		2-4%
3. <b>Specimen Preparation and Pre-analytical Processing</b>		4-8%
4. <b>Equipment, Instruments and Reagents</b>		2-4%
5. <b>Assessment and Analysis</b>	5.01, 5.04, 5.07	45-55%
	5.02, 5.03, 5.05	6-8%
	5.06, 5.08	6-8%
6. <b>Recording and Reporting</b>		7-10%
7. <b>Quality Management</b>		6-8%
8. <b>Critical Thinking</b>		2-4%
9. <b>Communication and Interaction</b>		2-4%
10. <b>Professional Practice</b>		2-4%

# Assumptions About Medical Laboratory Science

## The Cytotechnologist

Upon successful completion of both an accredited program/CSMLS prior learning assessment **and** the CSMLS national certification examinations: The Diagnostic Cytology Medical Laboratory Technologist (Cytotechnologist):

- has developed a broad knowledge base and practical skills that enable them to prepare specimens for diagnostic interpretation, perform microscopic interpretation of those specimens, and issue reports according to institutional policies and professional standards
- applies critical thinking and problem-solving strategies to ensure best practices
- practices and promotes the principles of continuous quality improvement including professional development and using personal initiative to improve laboratory practice
- practices to ensure the safety of patients, colleagues, self, and the environment
- contributes to the health care and education of the public, promotes patient welfare and respects patient diversity, dignity, and confidentiality
- is an integral member of the health care team who shares knowledge that is essential to the prevention, diagnosis, treatment and monitoring of disease, promotes learning, and collaborates with other professionals in providing effective patient care
- is responsible and accountable for professional acts and practices according to standards of practice as well as legislation and regulations governing the profession
- abides by the CSMLS Code of Professional Conduct
- uses effective interpersonal skills to maintain a professional relationship with colleagues, patients/clients and health care professionals
- uses all available resources to provide service in a timely, accurate, and cost-effective manner.

## The Client/Patient

The client/patient is any individual who interacts with the Cytotechnologist e.g. patient, patient representative, health care professionals, other laboratory professionals.

## The Environment

The Cytotechnologist is prepared to work in a variety of settings including, but not limited to, hospitals, private and government laboratories, industry, and educational institutions.

The Cytotechnologist practices in a safe environment that is dynamic and evolving.

## Diagnostic Cytology MLT Competency Categories

Categories	Description
<b>1. Safe Work Practices</b>	The Cytotechnologist conducts professional practice according to established protocols, safety guidelines and existing legislation.
<b>2. Data Collection and Specimen Procurement/Receipt</b>	The Cytotechnologist verifies that specimens are procured according to established protocols and verifies relevant data.
<b>3. Specimen Preparation and Pre-analytical Processing</b>	The Cytotechnologist understands and performs preparatory techniques on specimens that originate from a variety of sources according to established protocols.
<b>4. Equipment, Instruments and Reagents</b>	The Cytotechnologist uses laboratory equipment and prepares reagents according to established protocols.
<b>5. Assessment and Analysis</b>	The Cytotechnologist applies scientific knowledge and skills to critically evaluate specimens and to provide an accurate diagnosis according to established protocols.
<b>6. Recording and Reporting</b>	The Cytotechnologist uses appropriate terminology, documents and reports laboratory results according to established protocols.
<b>7. Quality Management</b>	The Cytotechnologist practises and promotes the principles of quality management.
<b>8. Critical Thinking</b>	The Cytotechnologist applies critical thinking skills to constructively solve problems.
<b>9. Communication and Interaction</b>	The Cytotechnologist interacts using effective communication, teamwork skills and interprofessional collaboration with clients and other health care professionals.
<b>10. Professional Practice</b>	The Cytotechnologist meets the legal and ethical requirements of practice and protects the patient's right to a reasonable standard of care. Professional practice encompasses scope of practice, accountability and professional development.

## Category 1 Safe Work Practices

The Cytotechnologist conducts professional practice according to established protocols, safety guidelines and existing legislation.

Number	Competency
1.01	Applies the principles of standard precautions
1.02	Uses appropriate personal protective equipment, e.g. gloves, gowns, masks, face shields and aprons
1.03	Applies appropriate laboratory hygiene and infection control practices
1.04	Minimizes possible dangers from biological specimens, laboratory supplies, and equipment
1.05	Utilizes laboratory safety devices in an appropriate manner, e.g. biological safety cabinets, fume hoods, safety pipetting devices, safety containers and carriers, safety showers, eye washes
1.06	Labels, dates, handles, stores, and disposes of chemicals, dyes, reagents, and solutions according to WHMIS and existing legislation
1.07	Handles and disposes of sharps-appropriately
1.08	Stores, handles, transports and disposes of biological and other hazardous material according to existing legislation
1.09	Selects and utilizes the appropriate method for items to be disinfected/sterilized
1.10	Minimizes the potential hazards related to disinfection/sterilization methods
1.11	Applies appropriate measures in response to laboratory accidents/incidents
1.12	Applies appropriate spill containment and clean up procedures for biological materials and chemicals
1.13	Responds appropriately to all emergencies
1.14	Reports and documents all incidents related to safety and personal injury, in a timely manner
1.15	Applies proper ergonomic principles to minimize risk of injury

## Category 2

### Data Collection and Specimen Procurement/Receipt

The Cytotechnologist verifies that specimens are procured according to established protocols and verifies relevant data.

Number	Competency
2.01	Verifies that client demographic data on the requisition corresponds with the specimen
2.02	Provides information to the client on specimen procurement, collection, transportation and storage
2.03	Verifies that the required clinical information (e.g. specimen source) is on the requisition
2.04	Delivers specimens appropriately, considering priority and specimen stability for interdepartmental testing
2.05	Verifies specimen suitability, including adequate amount/volume and integrity, for evaluation
2.06	Accessions specimens into the laboratory information system
2.07	Identifies discrepancies in specimen procurement and/or documentation and initiates corrective action
2.08	Complies with existing guidelines for specimen retention, storage, transportation and disposal

## Category 3

### Specimen Preparation and Pre-analytical Processing

The Cytotechnologist understands and performs preparatory techniques on specimens that originate from a variety of sources according to established protocols.

Number	Competency
3.01	<p>Prioritizes specimen preparation, e.g. stat, urgent, routine</p> <ul style="list-style-type: none"> <li>• Maximizes efficient use of resources, e.g. time, equipment</li> <li>• Organizes workflow, as required, to accommodate changes in priority</li> </ul>
3.02	Verifies specimen identification is traceable throughout sample preparation
3.03	<p>Prepares specimens for current and future analysis e.g. gynecological and nongynecological, grossing, immunohistochemistry, molecular, and flow cytometry</p> <ul style="list-style-type: none"> <li>• Correlates the clinical information and adjusts preparatory techniques accordingly</li> </ul>
3.04	Performs tissue preparation techniques to produce paraffin and frozen sections for microscopic examination
3.04.01	Operates and maintains instruments/equipment
3.04.02	Assesses the quality of the preparation and initiates corrective action as required
3.05	Performs techniques to demonstrate cellular and non-cellular components in tissue and body fluids
3.05.01	Operates and maintains instruments/equipment
3.05.02	Assesses quality of staining and initiates corrective action as required
3.06	Applies the principles of preservation, fixation, staining and coverslipping
3.07	Assesses the quality of specimen preparation and initiates corrective action when optimum results are not produced
3.08	Complies with existing guidelines for slide retention, storage, transportation and disposal



## Category 4 Equipment, Instruments and Reagents

The Cytotechnologist uses laboratory equipment and prepares reagents according to established protocols.

Number	Competency
4.01	Applies the principles of microscopy to specimen analysis (e.g. bright field, digital, fluorescence, dark field, polarizing, electron).
4.02	Operates and maintains standard laboratory equipment (e.g. microscope, centrifuge, biosafety cabinet, microtome, micropipette and various automated systems.)
4.03	Recognizes malfunctions in equipment and initiates corrective action
4.04	Prepares reagents
4.05	Operates a computer for job related activities

## Category 5 Assessment and Analysis

The Cytotechnologist applies scientific knowledge and skills to critically evaluate specimens and to provide an accurate diagnosis according to established protocols.

Number	Competency
5.01	Recognizes the relationship between clinical information, laboratory analyses, screening techniques, diagnoses, review of previous patient material and various modes of treatment and their impact on patient care
5.02	Performs microscopic assessment of specimens for adequacy
5.03	Recognizes altered morphology as a result of procurement and preparation techniques, e.g. poor fixation, over-staining, smearing errors
5.04	Identifies and evaluates the morphology of the cellular and noncellular entities of specimens <ul style="list-style-type: none"> <li>• Primary screening of cells and tissue</li> <li>• Differentiates between clinically significant and insignificant findings</li> <li>• Detects, selects and appropriately marks, with a high level of accuracy, the significant cellular and noncellular entities most representative of the pathologic process present</li> </ul>
5.05	Demonstrates an understanding of molecular testing
5.06	Analyzes routine, special and ancillary stains and techniques e.g. Papanicolaou, H&E, telepathology, flow cytometry, FISH, PCR and EM
5.07	Develops differential diagnoses based on: <ul style="list-style-type: none"> <li>• clinical information</li> <li>• morphology</li> <li>• ancillary techniques</li> <li>• method limitations, e.g. specificity, sensitivity</li> <li>• knowledge of pathology</li> </ul>
5.08	Performs and assesses results of Human Papilloma Virus (HPV) testing

## Category 6

### Recording and Reporting

The Cytotechnologist uses appropriate terminology, documents and reports laboratory results according to established protocols.

Number	Competency
6.01	Issues a final report for gynecological specimens that are diagnosed as Negative for Intraepithelial Lesion or Malignancy using the current Bethesda reporting system for Gynecologic Cytology
6.02	Refers relevant specimens, to the designated individual with an initial diagnosis
6.03	Communicates information regarding final diagnoses to the appropriate client (health care professional)
6.04	Utilizes current and appropriate medical terminology and nomenclature
6.05	Recognizes CSC guidelines for record retention

## Category 7 Quality Management

The Cytotechnologist practises and promotes the principles of quality management.

Number	Competency
7.01	Provides accurate and timely results to the client (health care professional)
7.02	Follows established protocols as defined in policy and procedure manuals
7.03	Performs and assesses quality control measures (internal and external) e.g. equipment and reagents
7.04	Participates in quality assurance programs (internal and external)
7.05	Identifies and reports deficiencies in the workplace that may affect the quality of testing
7.06	Follows established preventive maintenance programs and maintains instrument/equipment records
7.07	Applies continuous quality improvement techniques and risk management processes to ensure quality clinical laboratory services

## Category 8 Critical Thinking

The Cytotechnologist applies critical thinking skills to constructively solve problems.

Number	Competency
8.01	Demonstrates an open inquiring mind and self-directed learning processes in resolving analytical, workplace and career challenges
8.02	Demonstrates the ability to adapt to rapidly changing situations, e.g. responds appropriately to critical situations, retains composure in stressful situations, applies existing skills to new situations
8.03	Demonstrates knowledge of the health care system and professional laboratory organizations and responsibilities
8.04	Demonstrates knowledge of the determinants of health and their implications for the laboratory system
8.05	Recognizes that change initiated in one area will impact on other areas of health care services
8.06	Demonstrates strategies to resolve workplace challenges
8.06.01	Effectively analyzes and interprets data to arrive at a conclusion or solve a problem.
8.06.02	Develops recommendations based on conclusions

## Category 9

### Communication and Interaction

The Cytotechnologist interacts using effective communication, teamwork skills and interprofessional collaboration with clients and other health care professionals.

Number	Competency
9.01	Practices effective communication with clients and other health care professionals, including: <ul style="list-style-type: none"> <li>• Active listening</li> <li>• Verbal communication</li> <li>• Non-verbal communication</li> <li>• Written communication</li> <li>• Identifying barriers to effective communication</li> <li>• Using technology appropriately to facilitate communication</li> </ul>
9.02	Demonstrates interpersonal skills when interacting with clients and health care professionals
9.02.01	Recognizes signs of individual and group stress
9.02.02	Demonstrates empathy in assisting colleagues to deal with stress
9.02.03	Demonstrates the use of conflict resolution skills
9.03	Demonstrates effective teamwork skills
9.04	Demonstrates interprofessional collaboration in dealings with other health care professionals

## Category 10

### Professional Practice

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

Number	Competency
10.01	Takes responsibility, is accountable for professional behaviour and is aware that breaches of standards of practice may lead to disciplinary and/or legal action
10.02	Promotes the image and status of Cytotechnologists as members of the health care team by maintaining high standards of practice
10.03	Clarifies the roles and responsibilities of the Cytotechnologist to other health professionals
10.04	Promotes an awareness and understanding of the contribution that the Cytotechnologist provides to the client (health care professional) and the public
10.05	Participates in training and professional development, and shares new knowledge with other health care professionals
10.06	Provides for the health care needs of the public, keeping the welfare and confidentiality of the patient paramount at all times and respects the dignity, values, privacy and beliefs of the individual
10.07	Complies with legislation governing medical laboratory technology
10.08	Recognizes how moral and ethical issues in health care may affect the Cytotechnologist and client (health care professional)
10.09*	Recognizes when asked to perform beyond scope of practice or competence and seeks appropriate guidance
10.10	Recognizes the Cytotechnologist's right to refuse to participate in potentially dangerous situations
10.11	Practises in a manner that contributes to the efficient use of health care resources and prioritize workflow to optimize patient outcomes e.g. human resources, time management, change management, reagents, supplies.
10.12	Practices evidence informed decision-making skills e.g. current literature review, collect and analyze data, research methodologies

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