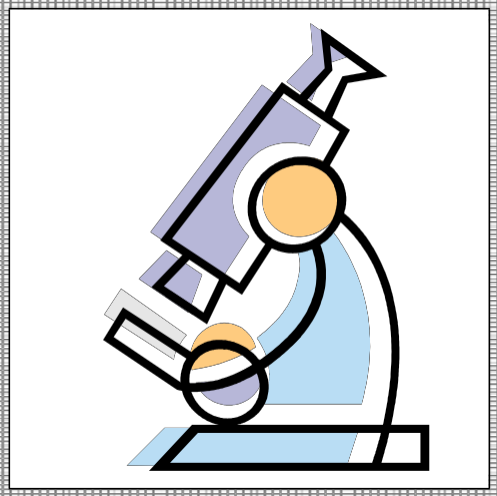

Clinical Practice Guide

Medical Laboratory Science Program

British Columbia Institute of Technology
School of Health Sciences
3700 Willingdon Avenue, Burnaby BC Canada V5G 3H2
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Clinical Coordinator (2021)

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Preface

The intent of this manual is to provide clinical agencies with information pertinent BCIT and the Medical Laboratory Science Program, specifically for all parties participating in the clinical rotations.

The parties include the students, the clinical agency, and the BCIT Medical Laboratory Science program.

This manual is organized in four sections:

***Section** 1* provides an overview of the mission and mandate of BCIT as well as some of the relevant policies and regulations of this educational institution.

Section 2 describes competency-based education that is the underlying foundation of the Medical Laboratory Science program. Additionally, this section presents the curriculum overview and the goals for the graduate of this program.

Section 3 delineates the roles and responsibilities of the students, the BCIT clinical coordinator, and the clinical trainer. Additionally, this section provides guidelines for evaluation.

Appendices provide more information to support that provided in the first three sections.

Section 1

Mandate and Mission

Our Mandate

BCIT will:

- prepare dynamic, highly-skilled members of the work force by delivering full- and part-time courses of study, including:
  - certificate, diploma, and degree studies in technologies and trades;
  - contracted industry training and upgrading courses.
- conduct technology transfer activities by providing opportunities for innovation, industrial assistance, and contracted applied research.
- be a province-wide, innovative organization specializing in advanced technology training and focusing on those initiatives that increase the level of economic activity, entrepreneurial activity, and employment for the province.

Our Mission

To build pathways for career success in the global marketplace through teaching excellence and applied education and research.

Selected Policies and Regulations

Insurance Plan

BCIT has arranged an accident insurance plan to cover all registered students (excluding apprenticeship and general interest students) who are actively attending classes or participating in a BCIT-approved course of activity.

Coverage will be in effect for all eligible students while on BCIT property or premises, participating in approved BCIT activity, or traveling directly to or from a BCIT approved or organized activity.

This policy is not intended to replace the BC Medical Service Plan (MSP).

The insurer will only reimburse an insured person for expenses in excess of, or not insured under personal, group, or provincial hospital or medical plan insurance for which the insured is eligible, whether enrolled in the plan or not.

Provincial Workers' Compensation Board Coverage

WorkSafe BC (Worker's Compensation Board of British Columbia) coverage is in place for all students while participating in a required practicum at a recognized work site. Provincial Workers' Compensation Board coverage is in place during classroom, lab, and shop instruction for student apprentices only; it will not be in place for any other students.

Admissions Policy

Prompt and equitable attention will be given to all applications. In those programs where the number of applications exceeds available seats, BCIT will select those applicants deemed to have the best opportunity for success. Applicants will be considered for one program at a time.

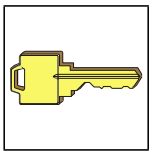
BCIT's primary purpose is to provide high quality post-secondary technology and vocational education and training to the residents of British Columbia and Canada. BCIT offers programs with a variety of levels of certification: certificates, diplomas and advanced studies, including degrees. Over 18,000 full-time students enroll annually.[1]

Applicant priority is given first to BC residents who are Canadian citizens or landed immigrants and who have lived in BC for 12 months immediately prior to enrolment. Second priority is given to out-of-province Canadian citizens or landed immigrants. Third priority is given to applicants without Canadian citizenship or landed immigrant (permanent resident) status.

All applicants must provide official proof that they meet Institute and program prerequisites. Applicants lacking specific prerequisite courses or required grades will be advised of deficiencies in entrance requirements.

It is the applicant's responsibility to upgrade deficiencies to required standards for the program for which they are applying. All applicant documentation must be supplied in the English language. Translations into English are at the applicant's expense.

https://www.bcit.ca/about/facts.shtml [1]



Applicant documentation will not be returned to applicants and becomes the property of BCIT. Copies should be retained by the applicant for future use.

Final acceptance or non-acceptance by BCIT is the decision of the Registrar. BCIT reserves the right to accept only those applicants who appear to have the greatest capability to succeed in their chosen programs.

Fraudulent Documents

It is a serious offence to submit fraudulent documents when applying for admission or registration. This includes submission of information constituting misrepresentation. Applicants who submit fraudulent documents will be dealt with severely with the minimum penalty for such conduct being non-enrolment at BCIT for one year and the maximum penalty being an indefinite ban from enrollment.

Harassment and Discrimination Policy

BCIT and its management, together with the unions and Student Association, are committed to providing an environment where the individual differences of all students and employees are valued and respected — an environment free from harassment and discrimination.

Definitions

BCIT's Harassment and Discrimination Policy prohibits discrimination or harassment on the following grounds: race, color, ancestry, place of origin, political belief, religion, marriage or family status, sexual orientation, physical or mental disability, gender, age, and unrelated conviction.

Harassment

Harassment is a form of illegal discrimination that can occur on any of the grounds mentioned above.

Sexual Harassment

Sexual harassment includes unwelcome sexually-oriented conduct including innuendo, offensive remarks, jokes, or physical conduct.

Personal Harassment

Personal harassment includes misuse of authority or abuse of power by an individual or group of individuals intended to demean or intimidate.

Discrimination

Discrimination is the refusal to employ or continue to employ a person on the grounds described above. It also refers to the denial, on the above grounds, of any benefit or opportunity that is customarily available to the public.

BCIT Harassment and Discrimination Policies and Guidelines (including guidance for reporting incidents) can be found at: https://www.bcit.ca/harassment/policy/

Conduct and Attendance

It is assumed that all students enrolled at the British Columbia Institute of Technology are interested in pursuing an intense program of studies and are prepared to conform to all regulations.

1. The Institute is committed to creating and maintaining an environment that is conducive to learning. In doing so, students are expected to conduct themselves appropriately at all times, respecting other's rights, property, environment, health, and safety, and are held responsible for their individual and collective actions. An instructor who believes a student's conduct in the classroom is detrimental to the course goals, objectives, and learning outcomes may assign the student a failing grade for the course. For misconduct outside the classroom, the Dean may recommend to the President suspension from further attendance. The President has the final power to suspend or expel a student for disciplinary reasons. A student expelled or suspended for misconduct will not be permitted on Institute grounds or in Institute buildings.

2. It is the policy of BCIT to rely on the judgment of students to maintain a reasonable standard of dress and appearance. The choice of dress is left to the individual student, subject to the following consideration:
    - Programs requiring uniforms or specialized dress associated with safety and/or industry standards are expected where indicated by instructors and/or industry supervisors

    BCIT faculty believes that there is a positive relationship between general dress standards and employment of graduates. Faculty is prepared to advise students in the area of acceptable attire.

3. **Honesty** is expected and required for all students. This implies fairness, straightforwardness of conduct, academic integrity, adherence to the facts, and trustworthiness. Acts of cheating, plagiarism, and dishonesty are not tolerated; the degree of punitive action may range from a written warning to expulsion from the Institute. These penalties may also be applied to students who knowingly contribute to the act of dishonesty, cheating, or plagiarism.

Definitions

3.1 **Cheating**: means to knowingly violate rules designed to ensure academic honesty and includes, but is not limited to:

a) the copying or other use by one person of another person's work during an examination, test, or other form of assessment;
b) the unauthorized use of materials or information whether physically or electronically stored during an examination, test, or other form of assessment;
c) the bringing into an examination, test, or other form of assessment any unauthorized information or materials and having ready access to same.

3.2 **Plagiarism**: means the presentation by a student of materials or work prepared by another person or persons as the student's own work and without reference credits. It includes, but is not limited to:

a) literary theft;
b) presenting as new and original an idea or product derived from an existing source;
c) failing to expressly acknowledge research or preparation conducted in whole or in part in respect of a term paper, project, report, or other form of assessment other than the student claiming authorship to the term paper, project, report, or other form of assessment.

3.3 **Dishonesty**: includes but is not limited to any unauthorized action or conduct of a student in a clinical, industry, or laboratory work situation where the student allows other person(s) to complete his or her tasks and fails to report or explain same to his or her supervisor or instructor.

4. The Institute is not responsible for debts incurred by student organizations.

5. If, through carelessness or negligence, a student damages Institute property, the student will be held responsible. If the damage is caused by students whose names are not known, the cost of repairing the damage may be assessed equally among all student enrolled at the Institute.

6. A student will not be permitted to borrow or remove any apparatus or tools except by written authority of the President or his delegate.

7. General supervision over all forms of entertainment given under the auspices of a student organization comes under the jurisdiction of the President.

Attendance Policy

Regular attendance in lectures, seminars, labs, shop periods and clinical is seen as critical to student success and will be monitored by faculty and clinical educators.

Student Responsibility

Attendance/Illness:

In case of illness or other unavoidable cause of absence or lateness, the student must communicate as soon as possible with their BCIT Clinical Coordinator (or the BCIT Clinical Coordinator's alternate or Program Head), the clinical site Student Coordinator and the clinical site department Clinical Educator indicating the reason for the absence. Prolonged illness of three or more consecutive days requires a medical certificate.

Excessive absence may result in failure or immediate withdrawal from the course or program. Please see Policy 5101 - Student Regulations, and accompanying procedures

The Medical Laboratory Science program defines **excess absence for the clinical placement (Level 4&5)** to be either **10% per clinical rotation**, or **a combined absence of two** (or more) **weeks (**i.e.: **10 scheduled training days** or more**)** throughout the entire clinical placement.

Failing to give an acceptable reason for being absent or late will result in the student having an “unexcused absence” for that day.

Appeals

Students may appeal decisions through the normal academic channels. Please refer to BCIT Policy 5104, Academic Integrity and Appeals and Policy 5104-PR1, Academic Decision Review. For more information on appeal procedures, please review Student Regulations and Academic Requirements and Standards on the BCIT web-site and/or contact the Student Life Office at 604-451-6863. Also see section Examinations, Grading, and Marks, this calendar.

Technology Program Dress Code

In some field trips and laboratory situations, safety considerations require that special head gear, shoes, or other clothing and other safety equipment must be worn.
Where programs involve regular periods of scheduled experience in industry or hospital, for example, students may be required to wear uniforms or otherwise dress in the appropriate manner acceptable to the affiliating agency.

WHMIS Compliance Policy and Procedures

Outline

The Workplace Hazardous Materials Information System (WHMIS) is a nationwide program designed to provide employees and employers in Canada with specific information about hazardous materials used in the workplace. Representatives of industry, labor, and the federal, provincial, and territorial governments participated in the development of WHMIS.

The regulations require essential information about hazardous material (known as "controlled products" in the legislation) from suppliers and importers to employers and, in turn, to employees who use those materials in the workplace. The key elements of WHMIS are cautionary labelling of controlled products, provisions of detailed information about the controlled products by way of Material Safety Data Sheets, and enactment of worker education programs. WHMIS also includes a mechanism for ruling on claims for exemption from disclosure of confidential business information on the label and Material Safety Data Sheets.

Compliance Policy

The British Columbia Institute of Technology will comply with the Workplace Hazardous Materials Information System (WHMIS) regulations as detailed in the BC Workers' Compensation Board Industrial Health and Safety Regulations.

Research Ethic

Purpose

This document contains BCIT's policy and procedures for review of ethical considerations arising from research involving human subjects.

There is a professional responsibility of researchers to adhere to the ethical norms and codes of conduct appropriate to their respective disciplines. When researchers are engaged in research supported by BCIT, the Institute may, in some circumstances, be liable for research conducted by these researchers. Furthermore, most funding agencies require ethics review of research proposals which involve the use of human subjects. For these reasons, policy and procedures are required to ensure that appropriate safeguards are provided. This policy will enable BCIT to conduct research on human subjects of a standard acceptable to all of the major granting agencies and regulatory bodies.

Policy Statement

Norms for the ethics of research involving human subjects are developed and refined within an ever-evolving societal context, elements of which include the need for research and the research community, more imperatives and ethical principles, and the law. Research at BCIT must demonstrate that appropriate methods will be used to protect the rights and interests of the subjects in the conduct of research.

Research involving human subjects is premised on a fundamental commitment to advancing human welfare, knowledge and understanding, and to examining cultural dynamics. Researchers undertake or fund research involving human subjects for many reasons. An ethic of research involving human subjects should include two essential components: (1) the selection and achievement of acceptable ends, and (2) the acceptable means to those ends. The first component is directed at defining acceptable ends in terms of the benefits of research for subjects, for associated groups, and for the advancement of knowledge. The second component is directed at ethically appropriate means of conducting research.

Guiding Principles

The principles that follow are based on the guidelines of the Tri-Council Policy Statement on Ethical Conduct for Research Involving Humans. The principles have been widely adopted by diverse research disciplines. As such, they express common standards, values, and aspirations of the research community: respect for human dignity, respect for free and informed consent; respect for vulnerable persons, respect for privacy and confidentiality, respect for justice and inclusiveness, balancing harms and benefits, and maximizing benefit.

Medical Laboratory Science Program Policies and Guidelines

Admission to the Program

- Students are required to fill out a Student Acknowledgement of Program Requirements Form.
  (See Appendix A.)
- Basic First Aid certificate and CPR Health Provider (HCP) {Highly Recommended}

Student Illness

Notification

1. Students who will be absent from practicum must notify their clinical site Student Coordinator, their department lead preceptor and the BCIT Clinical Coordinator as soon as possible. If the illness is sudden, then the student must notify the Training Coordinator prior to the beginning of the shift and then the Clinical Coordinator at BCIT.

2. If a student expects to have a prolonged absence due to illness, then he/she must notify the BCIT Clinical Coordinator.

Return to Clinical After Illness

1. The student must notify the BCIT Clinical Coordinator and the agency of his/her intention to return to the practicum in advance of the experience.

2. If a student has been absent from the practicum due to a serious illness, injury, or surgery, then he/she must obtain a letter from the involved physician.

3. The student must present the physician's note to the BCIT Clinical Coordinator prior to returning to the practicum setting.

Guidelines for Injury to Students or Faculty in the Practicum

If a student or employee is injured in the practicum area, they may be eligible for compensation through Workers' Compensation Board (WCB). To be eligible, they must report and file a claim. The procedure for reporting and filing follows.

Coordinator. This person or department may give directions on agency policy regarding treatment of the injury.

1. If *a doctor is seen immediately* (as in an emergency), tell the doctor that it is a WCB claim and the doctor will complete the Form * (Doctor's First Report). Then the injured will report the injury and the medical attention to First Aid on the North BCIT campus (604-432-8872). First Aid records the injury in the Accident Report book and completes Form 7 (Employer's Report).

2. *If a doctor is **not** seen immediately*, report the injury to First Aid on the North BCIT campus (604-432-8872). First Aid records the injury in the Accident Report book.

3. Injured individuals have one (1) year to seek medical attention because of the injury. When they see a doctor about the injury, they must tell the doctor that it is a WCB claim and the doctor will file a Form 8 at that time. Once medical attention is obtained for the injury, the individual must report this to BCIT First Aid (604-432-8872) so that a Form 7 can be completed.

4. Students may be asked to complete WCB forms at the clinical agency. However, BCIT cannot assume that the WCB form(s) completed at the clinical agency is (are) the appropriate one(s) so students are directed to report through BCIT First Aid, even if forms have been completed at the agency. A copy of the form completed at the clinical agency must be forwarded to the BCIT Clinical Coordinator as soon as possible.

5. When a WCB claim number is issued, individuals may submit accident costs to WCB. Therefore, save all receipts and bills until that time.

Accidental Exposure to Blood and Body Fluids

Exposure to blood or body fluids places the student at risk for contracting diseases, including but not limited to HIV and Hepatitis B.

What Constitutes Exposure?

Massive Exposure

- transfusion of blood
- injection of large volume of blood/body fluid
- exposure to laboratory materials or research specimens.

Definite Exposure

- injection of blood/body fluid not included in massive exposure
- deep injury with blood/body fluid-contaminated needle
- laceration or similar wound produced by a visibly blood/body-fluid-contaminated instrument which causes spontaneous bleeding in the worker
- visible laceration or similar flesh wound inoculated with blood/body fluid

Probable Exposure

- superficial injury with blood/body-fluid-contaminated needle or instrument
- a wound produced by a blood/body-fluid-contaminated instrument which does not cause spontaneous bleeding
- mucous membrane exposure with blood/body fluid

Possible Exposure

- superficial injury with a needle or device contaminated with non-infectious non-bloody body fluids
- superficial wound produced by non-bloody-fluids-contaminated instrument which does not cause visible bleeding
- prior wound or skin lesion contaminated with non-infectious body fluid.
- mucous membrane exposure with any blood/body fluid

Non-Exposure

- intact skin visibly contaminated with any blood/body fluid

Procedure Following Accidental Exposure to Blood and Body Fluids

Hepatitis B Immune Globulin (HBIG) and Hepatitis B vaccine, if required, should be given as soon as possible (must be given within seven days of exposure).

If antiretrovirals for HIV exposure are indicated, they are most effective if initiated within two hours of exposure. Delays in presenting to an emergency department should be avoided.

Exposures Occurring in Clinical Area

In the event that a student or staff member is working in a clinical area and has an accidental exposure to blood or body fluids, the hospital or clinical area protocol should be followed.

Contact BCIT clinical coordinator or BCIT Medical Services to ensure adequate follow-up occurs.

Exposures Occurring at BCIT

1. Scrub injury site for 10 minutes with any available skin detergent. Promote vigorous bleeding. If contaminated area is mucous membranes, irrigate for 15 minutes with normal saline or water.

2. BCIT Medical Services will document the following information:
   - date and time of exposure
   - route of exposure and precautionary measures used
   - source (blood or body fluid; from Red Cross or other agency)
   - volume of inoculum
   - type and promptness of step 1
   - health status and anxietylevel of client
   - immunization status of Hepatitis B andtetanus.

3. Documentation
   - chart
   - WCB accident record and first aid form if required.

4. Provide Hepatitis B and tetanus immunization if required.

5. **Refer client to nearest hospital emergency room *as soon as possible*** for assessment of Hepatitis B and HIV exposure: Burnaby Hospital is the nearest hospital to BCIT:
   - Notify Emergency Department by telephone.
   - Use Medical Services physician as referring doctor (if client consents).
   - Send above information with client.

Withdrawal of a Student from Clinical for Unsafe Practice

The Medical Laboratory Science Program (which includes the clinical agencies) reserves the right to determine unsafe practices and to prohibit a student's access to the clinical setting when performance during a clinical course is judged to be unsafe. The determinants for safe and unsafe practice are derived from the National Standards for Practice.

Procedure

1. If a student's clinical performance is perceived to be endangering patient safety, the student may be removed from the clinical site for the remainder of the day, remainder of the term and/or fully withdrawn from the Medical Laboratory Science program.

   Examples of unsafe practices include but are not limited to:

   - not knowing own limits and not seeking help appropriately;
   - failure to focus on patient(s) needs;
   - inadequate preparation for patient care;
   - dishonesty;
   - performing procedures without prior teaching, adequate supervision, or in violation of program or agency policy;
   - inappropriate behavior towards patients, staff, or instructors, e.g., rude, aggressive, dismissive, avoidance or omission of care;
   - implementing unsafe care;
   - illness which interferes with assumption of responsibilities; e.g., skin infections, cold sores, unmanaged anxiety, other unmanaged conditions which result in excessive absences

2. When a student is removed from the clinical site, the Student (Training) Coordinator documents the student's performance and notifies the BCIT Clinical Coordinator.

3. The BCIT Clinical Coordinator informs the Program Head and the Associate Dean. The BCIT Clinical Coordinator and/or the BCIT Program Head, and/or the BCIT School of Health Sciences (SoHS) Associate Dean will discuss the student's performance with the student.

4. The outcome will be a recommendation for remediation or removal from the clinical setting.

   a. If the recommendation is remediation, the BCIT Clinical Coordinator, in collaboration with the clinical site Student Coordinator, will develop a remediation plan. The plan is reviewed with the student. The BCIT Clinical Coordinator and/or the BCIT Program Head and/or the BCIT SoHS Associate Dean and the student endorse the agreement.

b. If the recommendation is removal from the clinical setting, the recommendation will be made in consultation with the clinical site Student Coordinator, the BCIT Clinical Coordinator, the BCIT Program Head and the BCIT SoHS Associate Dean. The recommendation will be based on the following factors:

- the seriousness of the incident(s);
- the risk of further unsafe practice;
- the level of supervision required by the student in question

5. The BCIT Clinical Coordinator and/or the BCIT Program Head will then inform the student of the withdrawal, the reasons for the decision, and the options available to the student. A record of this discussion will be placed on the student's file. The student will receive a grade of unsatisfactory (U) in the course.

6. If the student has unresolved questions and/or concerns then he/she may make an appointment with the Associate Dean.

7. In alignment with BCIT Policy 5104, Academic Integrity and Appeals and Policy 5104-PR1, Academic Decision Review; the student is entitled to engage in BCIT's Appeals and Marks Review Process. The processes for marks review and appeals can be found on the BCIT web-site under policy 5104 and 5104-PR1.

Section 2

Competency-Based Educational Program

Competency-Based Learning

There have been many directions in competency-based education over the last few years, and it is very much a major societal trend that requires health professionals and other professionals to be competent in order to ensure public safety. The public is moving beyond the patient role into a more egalitarian role with health care professionals. The challenge to professionals, educators, and regulatory bodies is to recognize the evolution of new roles as a natural development occurring across our society and the health care system. Competence means the skills, knowledge, attributes, and clinical judgment required for safe and professional practice.

A competency-based program is based on specific competencies. The starting point is the national (Appendix C) competency standards. From these competency standards, the educational program is designed to best suit the needs and the characteristics of the learners, organization, and industry.

The essence of competency-based education is:

- being clear about what graduates need to be able to do
- basing education on those identified competencies; and
- ensuring that graduates can actually do the specified competencies.

The specified competencies need to be converted into learning outcomes. What needs to be identified are the skills, knowledge, and attributes required for competent practice. Several outcomes can be clustered into various courses in order to promote efficient learning. This helps to minimize repetition and overlap as well as assisting with the sequencing of learning experiences which help the learner build competence incrementally, and therefore promotes effective learning.

Facilitating Learning

In a competency-based program, faculty can be freed to move away from solely dispensing information through the use of learner-centered materials in order to engage the student in rich learning. This approach can also provide the teacher with more time to spend at the student's point of need and at the time they desire such assistance.

Learning activities are an integral part of course design. The writing of the learning experiences offers goals and the development of criteria, and is used to guide designing, selecting, and critiquing of the learning experience.

Generally, learning activities are intended to provide the learner with active experiential learning. They provide the context for student-centered learning. Learning activities have three aspects: information, operation, and validation. These need not occur in any given order and the process is not a linear one.

Operation is the active part of a learning experience. It is the opportunity to engage the mind in ways that motivate and spark interest. The operational phase is an issue, a problem, a puzzle, a conundrum. The ability of the teacher to invoke reality imaginatively, to simulate a problem, and to raise real and relevant questions and issues is the key element of a learning experience. The operational aspect is most efficient when students are given some structure in the amount of time and the types of questions to be explored and the issues to raise. This is done most effectively in small groups followed by a large group discussion.

The *information* aspect of a learning activity is usually more passive where the learner is asked to read or acquire information about the topic. If the information aspect does not occur, and this lack of information flows over into the discussions and dialogue that frequently characterize the operational phase, the students can pool their ignorance rather than build on their knowledge.

Validation is the testing aspect when students see what they can do. The most useful validations are clinical experiences. Others include writing papers that take a position and defending it. Simulated problem-based situations are also critical to helping a student become competent.

Criteria for Critiquing Learning Activities

- Does it require the student to become involved? Does it have a "hook" that will engage the student?
- Does it ensure relevance of material for the learner?
- Does it ensure meaningfulness of material for the learner?
- Does it facilitate reflecting, self-evaluating, discussing, dialoguing, debating, imagining, and inquiring?
- Does it allow for personal and subjective experiences and meanings?

- Does it enable learners to utilize previous learning and integrate concepts from other courses?
- Does it allow for group influences on learning?

Evaluation Strategies Appropriate for Competency-Based Curriculum

- observation of learning performing activity
- assessment of performance under simulated conditions
- assessment of performance in the clinical setting
- observation of group discussion
- evaluation of group presentation
- oral questions put to an individual and/or group
- assessment of journal summaries and/or logs
- assessment of paper and pencil test to include short written answers, long essay written answers, assignments or written papers, and the use of case studies.
- assessing profiles and other personal documents.

Assessment strategies need to be congruent with the curriculum and standards on which they are based. They need to be criteria based and concerned with underlying cognitive processes, knowledge, attitudes, and value systems. They need to be integrated and holistic, covering a range of assessment outcomes.

Assessments

- need to be problem oriented.
- require an appropriate level of analytical ability.
- need to be interdisciplinary, in that a variety of bodies of descriptions, skills, knowledge and attitudes are brought together.
- need to combine both theory and practice (Bevis and Watson, 1989; Harris et al., 1995).

Aim of the Medical Laboratory Science Program

The aim of the Medical Laboratory Science Program is to prepare graduates for employment as entry-level medical laboratory technologists in a variety of laboratory settings.

Program Goals

The goals of the Medical Laboratory Science Program are to:

- provide the health care community with confident, competent and caring graduates who possess the skills, knowledge, and attributes to think critically and continually adapt to the changing health care environment.
- provide, through collaboration with the health care community, practice-based learning opportunities to facilitate the integration of theory and practice.
- prepare graduates for national certification.
- provide a flexible, accessible, and learner-focused program to meet diversified student needs.

Program graduates will be able to:

- communicate effectively using oral and written skills and technology.
- resolve conflict with others.
- adapt to the changing health care environment.
- engage in and pursue lifelong learning in order to achieve personal and career goals.
- maintain competence through professional development.
- use computers to analyze data and manage information.
- use safe work practices at all times in the laboratory.
- work independently, as part of a laboratory team, and as an interdisciplinary health team member.
- perform as a professional within the laboratory and health care setting.
- solve problems and make responsible decisions using critical and creative thinking.

Program Matrix

Level 1		Credits
BHSC 1116	Anatomy and Physiology for Medical Laboratory Science	6.5
BHSC 1139	Applied Immunology	3.5
BHSC 1150	Self and Others	2.5
COMM 1171	Communications for Medical Laboratory Science 1	5.0
MLSC 1009	Foundations of Clinical Microbiology	3.0
MLSC 1103	Clinical 1	3.0
MSLC 1104	Specimen Procurement	2.5
MLSC 1218	Integrative Medical Laboratory Studies 1	8.5

Level 2		Credits
MLSC 1014	Molecular Diagnostic Techniques 1	3.0
MLSC 1105	Microanatomy	4.0
MLSC 1223	Transfusion Science 1	4.0
MLSC 2008	Clinical Microbiology 1	8.0
MLSC 2114	Hematology 1	5.0
MLSC 2116	Clinical Chemistry 1	8.0

Level 3		Credits
MLSC 0301	MLS Inter-Professional Education	0.0
MLSC 1115	Histology	8.0
MLSC 2014	Molecular Diagnostic Techniques 2	2.5
MLSC 2223	Transfusion Science 2	5.5
MLSC 3008	Clinical Microbiology 2	8.0
MLSC 3114	Hematology 2	6.5
MLSC 3116	Clinical Chemistry 2	8.0

Level 4		Credits
MLSC 2213	Clinical 2	30.0
MLSC 2218	Integrative Medical Laboratory 2	3.0

Level 5		Credits
MLSC 3213	Clinical 3	27.0
MLSC 3218	Integrative Medical Laboratory Studies 3	2.5

Total Credits	**167.5**

References

Bevis, E.O., & J. Watson. (1989). *Toward a Caring Curriculum: A New Pedagogy for Nursing.* NLN.

Harrison, R., H. Guthrie, B. Hobart, & D. Lundberg. (1995). *Competency-based Education and Training: Between a Rock and a Whirlpool.* University of South Australia. National Centre for Vocational Education Research.

Section 3

Clinical Rotation

Roles and Responsibilities of the Student Coordinator (Clinical Site)

Description

A Student Coordinator is a mentor, teacher, facilitator, motivator, observer, and evaluator who can effectively:

- model ethical and professional behaviors in a practical setting.
- orient students to unit staff, layout, policies, and attitudes.
- plan learning experiences to meet practicum objectives.
- assist students to correlate course theory with practical experience.
- assess students' goals, knowledge, skills, and attitudes.
- provide opportunities for students to practice new skills.
- provide verbal and written feedback to students regarding their performance on a regular basis.
- support and encourage students as they are learning (Moore, p. 1.7).

The clinical site Student Coordinator is responsible for:

- monitoring the progress of the student
- retaining responsibility for the student's practical experience at that agency even if instruction is shared with other clinical educator's
- ensuring all student evaluations (CompTracker Forms and Competencies) are submitted and approved by clinical educator's in a timely manner
- supporting BCIT's Medical Laboratory Science program's continuous quality improvement processes by attending Clinical Liaison and ad hoc meetings and participating in the program's post clinical survey
- liaising with the BCIT Clinical Coordinator as needed

The First Meeting(s)

The student orientation may be completed in one meeting or may require several meetings. After introductions and some sharing of personal information, background, and expectations, the clinical site Student Coordinator should familiarize the student with the department by giving an overview of:

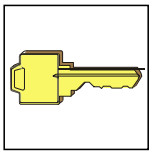
- organization and layout
- functions and services
- rules and regulations
- acceptable standards of behavior

- describe the health region.

- review and revise the planned schedule.
- explain how the student will be supervised and evaluated.
- inform the student about the relevant policies, for example, employee safety on the job, attendance etc..
- discuss the importance for, and policies for, confidentiality. (The student will submit a signed *Pledge of Confidentiality*. See Appendix D for a sample form.)
- ask the student for questions about the clinical and form information about his/her own learning objectives.

Instruction

Teaching students is challenging and rewarding, as they get accustomed to the routine of the department. Try to provide the best possible training session **given the resources available**.



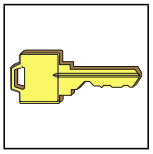
Remember that the purpose of the clinical rotation is to give students insight into the real world, not to demonstrate the ideal department. Variations in workload, staff illness, unexpected meetings, etc. which cause schedule changes are part of the real world — they provide the unique opportunity for students to learn adaptability.

After an observation period, the student's level of involvement can gradually increase until the student is able to work independently under supervision.

The first time the student performs a procedure:

- give the student instructions (principles and steps).
- allow the student to perform the procedure under close supervision.
- refer to your departmental policy and procedure manuals if applicable.
- give feedback (include compliments as well as suggestions for improvement).

Exercise professional judgment as to when a student is ready for more independent performance.



Remember that students are not replacement staff and, therefore, should always be under some degree of supervision when performing procedures and other activities.

Student Conduct and Attendance

Situations which may be grounds for removal of the student from the clinical placement site and potentially from the course and/or program include but are not limited to:

- unsafe behavior
- inappropriate behavior
- excess absence
- failure to follow directions
- breach of confidentiality

If the student displays unsafe or inappropriate behavior toward the public or co-workers, the clinical site Student Coordinator should immediately intervene and the BCIT Clinical Coordinator should be contacted.

The student must comply with health agency policies regarding behavior. The health agency procedure for reporting incidents or unusual occurrences should be followed if applicable.

If the student fails to attend the clinical rotation regularly and punctually in accordance with BCIT policy; the BCIT Clinical Coordinator needs to be advised. The Medical Laboratory Science program defines **excess absence for the clinical placement (Level 4&5)** to be either **10% per clinical rotation**, or **a combined absence of two** (or more) **weeks (**i.e.: **10 scheduled training days** or more**)** throughout the entire clinical placement.

If the student is absent for more than 10% per clinical rotation, or a combined absence of two (or more) weeks throughout the entire clinical placement, the BCIT Clinical Coordinator will issue a written warning prior to initiating steps which may result in failure and/or withdrawal of the student from the course and/or program.

If the student fails to follow directions and/or is found to have breached confidentiality; the Student Coordinator should intercede and the BCIT Clinical Coordinator should be promptly notified.

Evaluation Strategy

The following tools form a comprehensive strategy to evaluate students during clinical rotation.

1. **Student Goal Checklist (CompTracker)**
   Purpose: To outline goals/expectations for each clinical rotation.
   Use: Students check off the goals when they feel they have achieved them. The goals aid the student by keeping them on track throughout their training rotation and further provide a platform for self-evaluation and reflection. They also serve as a mechanism for clinical educators to monitor ongoing student progress and offer an opportunity for early verbal and documented feedback.

2. Assessment of Clinical Performance

Purpose: To formally evaluate the student's individual performance in completing CSMLS competencies in each discipline rotation.

Use: Clinical Educators assess student competency against the Skills, Clinical Judgment and Standards for each discipline rotation as denoted in the CompTracker tool. Students electronically submit competencies to their Clinical Educator(s) for final evaluation. Evaluations are discussed with the student prior to final approval. Students also electronically submit the Professional Performance Evaluation (minimum one per rotation) as a component of the full review. Students must complete all Goals, successfully meet all Competencies and achieve a passing evaluation on the Professional Performance Evaluation(s) before the program recommends the student to the Canadian Society for Medical Laboratory Science (CSMLS) as eligible to write the National Certification Examination.

Evaluation Guidelines

The BCIT Clinical Coordinator may be able to assist you in the evaluation process.

Clinical evaluations help to:

1. determine how well goals have been achieved.
2. provide a focus for students to build on their strengths.
3. provide the opportunity to practice both technical and problem-solving skills.
4. provide constructive feedback.
5. discuss practical applications of knowledge and skills.
6. share knowledge and experience
7. create practice opportunities for students
8. ask questions that stimulate problem solving
9. demonstrate skills for students.

The five **least helpful** teaching behaviors are to:

1. question students in an intimidating manner.
2. correct student's errors in front of peers, other educators or members of the public.
3. base judgments on indirect evidence
4. fail to adhere to teaching schedule
5. not recognize extra effort

Feedback:

Feedback is an essential part of effective learning. It helps students understand the subject being studied and gives them clear guidance on how to improve their learning.
https://www.reading.ac.uk/internal/engageinfeedback/Whyisfeedbackimportant/

General principles will make your feedback more effective:

- Be specific, objective, and direct
- Be descriptive; give examples
- Ask the student to validate the message
- Give feedback about important, changeable behaviors
- Give feedback promptly
- Talk in private
- Discuss both good and unacceptable performance
- Use "I" statements.
  (Moore, p. 3.20)

Some other guidelines to follow for feedback and evaluation include:

- Remember that your expectations should match the student's level in the program.
- Evaluate each procedure initially and throughout the rotation, considering attitude as well as knowledge and performance.
- Keep records (specific, written, prompt, dated) to substantiate your observation.
- Document the reasons for unsatisfactory ratings or areas where no rating has been given.
- Discuss student progress with the BCIT Clinical Coordinator at regular intervals or as needed.
- Use well-stated specific questions to promote critical thinking and self-evaluation.
- Document any time missed during the session.
- Obtain input from the technologist(s) directly involved in working with the student before finalizing evaluations.
- Provide opportunities for student input into evaluation.

On completion of each clinical rotation, the Clinical Educator should discuss with the student; their performance on the competencies and the assessments given in the Professional Performance Evaluation.

Feedback is an integral part of the educational process. It provides learners with a comparison of their performance to educational goals with the aim of helping them achieve or exceed their goals.

(A Schartel, Scott. (2012). Giving feedback - An integral part of education. Best practice & research. Clinical anesthesiology. 26. 77-87.)

Roles and Responsibilities of the Student

Description

During the clinical, students are purposefully gaining competencies so they can work independently in the health field. Their role is a combination of learner and practitioner.

Students are expected to:

- Represent BCIT and the Medical Laboratory Science Program through commendable behaviour.
- function to the best of their ability and accept responsibility for work done.
- complete assigned tasks competently and willingly.
- interpret and apply instructions carefully.
- ask for clarification and feedback promptly when required.
- follow the department's policies and procedures.
- accept constructive feedback as an aid to improvement.
- provide input into the evaluation process.
- keep the (clinical) Student Coordinator apprised of his/her progress in accomplishing the planned objectives.

Confidentiality and Ethics

Students should be constantly aware of the Professional Code of Conduct as presented in Appendix F.

Confidentiality is an important aspect of professional ethics and includes the following expectations:

- Keep all information about routine inspections and complaints strictly confidential. Names must not be used in reports or in discussions outside the health agency.
- Sign the *Pledge of Confidentiality* form provided by the health agency and submit it to your clinical site Student Coordinator at your first meeting (see Appendix D).

Appearance

Presenting a professional appearance is an important part of the job:

- Follow the dress code of the health agency.
- Be meticulous in matters of personal hygiene. Clients are sensitive to scents, such as perfume.
- Apply professional standards in relation to hair, jewelry, makeup, and fingernails.

Conduct

The student must comply with health agency policies regarding behavior. Unsafe or inappropriate behavior may be grounds for removal of the student from clinical and potentially the course and/or program.

Attendance

Attendance is critical to get the most out of the clinical experience. Attend regularly and punctually. Non-compliance to **BCIT attendance Policy 5101 - Student Regulations, and accompanying procedures** and/or non-compliance to **expectations set out by the BCIT Medical Laboratory Science Program for attendance at the clinical site** may result in a standing grade for the course of Unsatisfactory (U) and/or withdrawal from the course and/or program.

Students are expected to:

- Report all absences to the clinical site Student Coordinator, the BCIT Clinical Coordinator (or his/her alternate), and the department Clinical Educator as soon as possible — at least 1 hour prior to starting time.
- Arrange to make up time lost at the convenience of the agency.
- Schedule medical and dental appointments outside of clinical hours.
- Observe the working hours and break periods as assigned.
- Work the hours assigned by the clinical site Student Coordinator.

Roles and Responsibilities of the BCIT Clinical Coordinator

- The Clinical Coordinator is responsible for ensuring clinical partner sites are oriented and refreshed on the framework for BCIT student training including:
  - review of BCIT Clinical Practice Guide
  - review of CompTracker Evaluation Tool
  - provide guidance to ensure standardized approach to student training across clinical partner sites, i.e., evaluation strategies and best practices
  - review processes to ensure that students are provided with appropriate opportunities for remediation when required.
- The Clinical Coordinator is responsible for maintaining consistent communication with clinical sites and students.
- The Clinical Coordinator is responsible for ensuring that student safety incidents are reported to BCIT OHS/First Aid after receiving incident report documentation from clinical sites.
- The Clinical Coordinator is responsible for liaising between clinical partners and BCIT faculty.
- The Clinical Coordinator is responsible for providing opportunities for Clinical Educator education related to student training.
- The Clinical Coordinator is responsible for facilitating matters of student performance, when required.
- The Clinical Coordinator acts a student advocate, when required.
- The Clinical Coordinator is responsible for chairing Clinical Liaison meetings and ensuring that action items are addressed.

References/Bibliography

BCIT. (January 1993). *Cardiology Program Practicum Manual*. BCIT: Burnaby, BC.

BCIT. (January 2000). Environmental Health, Bachelor of Technology Program. *Practicum Manual for ENVH 7500 and ENVH 8500*. BCIT: Burnaby, BC.

Canadian Society for Medical Laboratory Science. (May 1998). *Competencies Expected of an Entry-Level Medical Laboratory Technologist*. Canadian Society for Medical Laboratory Science: Hamilton, ON.

Moore, Pru. (1991*). Clinical Teaching in Health Sciences* ADHS 5110 BCIT Health Part Time Studies: Burnaby, BC.

Appendices

Appendix A: Program Requirements for Admission

1. **Academic Requirements**
   Minimum: High school graduation with the following courses and course standing:

   English: two years of education in English in an English-speaking country with **one** of the following:
   English 12 (73%) or
   3.0 credits of post-secondary **English, humanities or social sciences** (73%) from a **recognized institution**

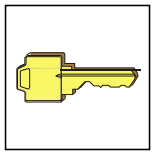
   Math: one of the following (or equivalent), completed within the past five years:
   Pre-Calculus 12 (73%) or
   MATH 0001 - Technical Mathematics (73%) or
   MATH 0120 - Math 12 Competency Test (73%) or
   3.0 credits post-secondary math (linear algebra, pre-calculus or calculus) at 100 level or higher (73%) from a **recognized institution**

   Biology: one of the following (or **equivalent**), completed within the past five years:
   Biology 12 (73%), or
   BHSC 0100 - Human Biology (73%), or
   BHSC 0110 - Foundational Human Anatomy and Physiology (73%) or
   BHSC 0012 - Biology 12 Challenge Exam (73%)
   3.0 credits of **post-secondary human biology** (73%) from a **recognized institution**

   Chemistry: one of the following (or equivalent), completed within the past five years:
   Chemistry 12 (73%), or
   CHEM 0120 - Chemistry 12 Challenge Exam (73%)
   3.0 credits of post-secondary chemistry (73%) from a **recognized institution**

   Physics: one of the following (or equivalent):
   Physics 11 (67%), or
   PHYS 0309 - Pre-Entry Physics 1 (67%), or
   PHYS 0110 - Physics 11 Challenge Exam (67%)
   3.0 credits post-secondary physics at 100 level or higher (67%) from a **recognized institution**

   Please Note: Recency Requirements
   Academic course requirements must have been completed in the past five years. If longer than five years has elapsed, individual assessment will be required.



The above academic requirements are the minimum requirements for entrance. Because admission to this program is very competitive, most applicants who are accepted will have completed at least one year of post-secondary education.

2. **Additional Requirements**:

All applicants must complete and include w their online submission; a **Program Requirements Form** acknowledging the nature of this training and the physically demanding aspects of this work.
https://www.bcit.ca/files/admission/pdf/mlab_physical_requirements_form.pdf

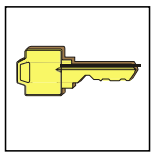
In addition to the above requirements, the following attributes are recommended to ensure the best possible chance of success in this program:

- Proficient level of English reading, writing, speaking, and listening skills in order to communicate effectively with patients and the health care team.
- Strong problem-solving skills, good interpersonal skills, and the ability to function as part of a team.
- The ability to work quickly and accurately under pressure and to make decisions which directly affect the diagnosis and treatment of disease.
- A strong sense of responsibility, a caring and professional attitude, meticulous work habits, good hand-eye coordination, fine motor skills, and good manual dexterity.
- Physical stamina: Medical laboratory work is physically demanding and requires standing for long periods of time.
- The ability to clearly differentiate colors.
- Strong computer skills which are required during the program training and for eventual employment working with laboratory and hospital information systems.
- Basic First Aid certificate and CPR Health Provider (HCP) {Highly Recommended}

Selection Process

There is significant competition for acceptance into the Medical Laboratory Science program. In order to ensure fairness to the applicants and to graduate a high caliber of technologist the following selection process is followed:

- Applicants must have their prerequisites completed. Obtaining minimum requirements does not mean automatic acceptance. Selection is dependent on overall merits of the applicant.
- All applications are reviewed and the most eligible are invited to participate in the Multiple Mini Interview (MMI) Process.
- Selection into the program will be based on overall strength of the candidate's application and scores achieved during the MMI process.



Note: BCIT chooses those applicants considered to have the best chance for success in the program based on the above requirements.

Please refer to the BCIT Medical Laboratory Science program web page for detailed admissions information: https://www.bcit.ca/study/programs/6580diplt#entry

Appendix B: BCIT Medical Laboratory Science Program Accreditation Body

The BCIT Medical Laboratory Science Program is fully accredited through Accreditation Canada (EQual Canada).

Appendix C: National Competencies

Competencies for an Entry-Level Medical Laboratory Technologist can be found on the website www.csmls.org.

Appendix D: Pledge of Confidentiality

Health Authority/Clinical Laboratory
Partners and Affiliates May Use this Document or
Provide Their Own Confidentiality Agreements

This is to certify that I will respect the confidentiality of all matters pertaining to the public, colleagues, and other health care workers. I agree to follow the related policies, procedures, and regulations established by the health agency.

Health Agency/Clinical Laboratory Affiliate

_____

Student Name (please print)

_____

Student Signature

_____

Date

_____

Appendix E: Canadian Society for Medical Laboratory Science Code of Professional Conduct

1. 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.
2. Medical laboratory professionals work with other health care professionals to provide effective care.
3. 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.
4. Medical laboratory professionals shall protect the confidentiality of all patient information.
5. Medical laboratory professionals shall take responsibility for their professional acts.
6. Medical laboratory professionals shall practice within the scope of their professional competence.
7. 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.
8. Medical laboratory professionals shall share their knowledge with colleagues and promote learning.
9. Medical laboratory professionals shall be aware of the laws and regulations governing medical laboratory technology and shall apply them in the practise of their profession.
10. 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.

Canadian Society for Medical Laboratory Science: Hamilton, Ontario.

https://www.csmls.org

Appendix F: Canadian Society for Medical Laboratory Science Code of Ethics

The Canadian Society for Medical Laboratory Science (CSMLS) has developed a Code of Ethics in consultation with its members. The Code serves to define and expand the inherent ethical concepts[7] contained in the CSMLS Code of Professional Conduct, to document expectations of ethical behaviour for all medical laboratory professionals (MLPs), and to provide a framework during professional and personal self-evaluation.

The ethical principles contained herein are not listed in order of importance, but rather, should be considered in relation to each other during their application within situations involving ethical dilemmas.

MLPs shall practise in compliance with all current provincial and federal legislation for the protection and integrity of patients and their specimens, colleagues, health care providers, society, the environment and one's self. Within this practice, on a fundamental level, they will conduct themselves in a manner that is conscientious, compassionate, honest and equitable.

MLPs shall uphold the vision of the CSMLS Code of Ethics by adhering to the following principles of ethical conduct, as well as the underlying concepts.

Safe Practices

1.1 Practise only those disciplines within the medical laboratory profession for which CSMLS certification has been achieved.

1.2 Practise only those procedures for which qualification has been achieved or officially delegated by an appropriate institutional authority, where the member has the current requisite knowledge, skills and judgment to ensure and demonstrate competence.

1.3 Recognize risk prone situations in order to minimize harm to patients, staff and self.

1.4 Utilize professional and institutional mechanisms to intervene when witness to unsafe, incompetent or unethical practices.

1.5 Assume responsibility for errors one has committed or observed and take immediate action to prevent or minimize associated harm.

1.6 Advocate for working environments that support safe, competent and ethical practices.

Confidentiality

2.1 Understand and comply with applicable privacy legislation and policies regarding the collection, use and disclosure of confidential information.

2.2 Preserve and protect the confidentiality of any information, either medical or personal, acquired through professional contact (in person, through collegial conversations, via medical records etc.) to safeguard patients.

2.3 Abstain from using confidential information to the detriment of a patient, or with direct or indirect intent to benefit oneself or another person.

2.4 Access information relevant only to the professional task being performed.

2.5 Communicate and release information only with written or formal authorization, or where so ordered or expressly authorized by law.

2.6 Recognize and disclose conflicts of interest and resolve them in a manner which maintains the integrity of personal health information and protects the best interest of patient care.

Professional Development

3.1 Reflect on one's fitness to practise and expand one's knowledge, skills, judgments and attitudes through continued professional development.

3.2 Contribute to the development of the profession by sharing one's knowledge and experience.

3.3 Participate in interprofessional collaborative and educational processes, and the development of partnerships which contribute to positive patient outcomes.

3.4 Contribute to the advancement of the profession by:

- improving the body of knowledge,
- adopting scientific advances that benefit the patient, and
- maintaining high standards of practice and education.

Accountability

4.1 Be responsible first to the patient, then to society and the environment for safe and lawful practice and the sustainable use of resources.

4.2 Advocate one's role as a leader in the promotion of health and delivery of quality care.

4.3 Be responsible for the quality, integrity and reliability of the laboratory services one provides.

4.4 Ensure organizational consent processes are followed, including:

- Patients have the right to be informed
- Patients have the right to refuse or withdraw from procedures

Behaviour and Attitude

5.1 Provide service with dignity and respect to all, regardless of race, religion, sexual orientation, sex, gender identity, age, health status, or mental or physical disability.

5.2 Prioritize one's work to ensure that each patient receives optimum care.

5.3 Encourage the trust and confidence of the public through high standards of professional competence, conduct and deportment.

5.4 Be reasonably accessible within the confines of your duties.

5.5 Collaborate with patients, colleagues and other healthcare providers to provide effective patient care.

Footer

CSMLS graciously acknowledges the usage of ethical codes originated by our organizational partners, including: Newfoundland and Labrador College for Medical Laboratory Science, College of Medical Laboratory Technologists of Alberta, Saskatchewan Association of Combined Laboratory and X-Ray Technicians, Ordre professionnel des technologistes médicaux du Québec, American Society for Clinical Laboratory Science, The Danish Association of Biomedical Laboratory Scientists, and Canadian Association of Medical Radiation Technologists. CSMLS reviewed all medical laboratory provincial regulators' Code of Ethics and therefore, similarities in codes may be identified.

CSMLS commits to reviewing the Code of Ethics bi-annually to ensure its relevance and applicability to an ever evolving society and profession.

Approved by the CSMLS Board of Directors (September 2015 - Reaffirmed November 2020)

See the Code of Ethics Guidance Document for source references