
SCOPE OF PRACTICE FOR MEDICAL LABORATORY TECHNOLOGY PROFESSIONALS - 2021



KINGDOM OF BHUTAN

BHUTAN MEDICAL AND HEALTH COUNCIL
ROYAL GOVERNMENT OF BHUTAN

SCOPE OF PRACTICE FOR MEDICAL LABORATORY TECHNOLOGY PROFESSIONALS



KINGDOM OF BHUTAN

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Preamble

Under the power vested in the General Body by the Chapter VI Section (i) of the Medical and Health Council Act 2002, Kingdom of Bhutan, the General Body of the Council during its 14th General Body Meeting held on 25th August 2021 approved this document.

Short Title

Scope of Practice for Laboratory Technology Professionals (2021).

Commencement

This document shall come into effect from 1st January 2022.

Supersession

This document shall supersede the provisions of existing guideline, notifications and circulars that are inconsistent with this Scope of Practice.

Application

This document describes the scope of practice applicable to all the registered Medical Laboratory

Technology Professionals in the country to maintain standard of practice within their scope.

Statement

This scope of practice for the Medical Laboratory professionals sets out the procedures, actions and processes that the registered or licensed medical laboratory professional is allowed to perform. Medical laboratory professionals perform, analyze, interpret, report and clinically correlate test results in the areas such as microbiology, parasitology, biochemistry, haematology, immunology, cytology, histopathology and transfusion medicine. The medical laboratory professionals play a significant role in diagnosis, treatment, prevention and prognosis of the disease. Additionally, they are also responsible for carrying out disease surveillance and

research. The medical laboratory profession includes Diploma in Medical Laboratory Technology (Medical Laboratory Technician), Bachelors in Medical Laboratory Technology (Medical Laboratory Technologist) and Masters in Laboratory Technology (specialized in specific areas in clinical laboratory).

Competency

Medical laboratory professionals must be able to demonstrate a set of attributes such as:

- ◆ **Safe work practice-** conducts professional practice according to established laboratory protocols, safety guidelines and existing legislation.
- ◆ **Data collection and specimen procurement-** verifies all the laboratory data and ensures that appropriate specimens are collected.
- ◆ **Analysis of specimens and validation of results-**analyzes specimens and validates test results as per the laboratory protocols.
- ◆ **Analytical techniques-**understands the principles of analysis and accordingly perform the analysis to obtain precise and accurate test results.
- ◆ **Interpretation and reporting of results-** use knowledge, skills and experiences to interpret and report the test results.
- ◆ **Quality management-** effectively implement the principles of laboratory QMS.
- ◆ **Critical thinking-** apply critical thinking to solve laboratory problems.
- ◆ **Applied investigations-** demonstrate research skills to solve the problems through evidence gathering.
- ◆ **Resource management-** to implement both HR, material and financial management to ensure optimal laboratory performance.
- ◆ **Effective communication and interaction-** effectively

interacts with clients/patients to ensure optimal usage of the diagnostic services

- ◆ **Professionalism-** strictly practice the profession as per the legal and ethical requirements to ensure the efficient and safe diagnostic services.

They must use professional judgement to practice within their scope of practice. The professional competency assessment will be based on the scope of the practice (inclusive of expanded practice) of the professional. The one who assesses the professional's competency should have adequate insight, skill and experience to assess the competence of its laboratory workforce effectively.

Roles and Responsibilities

Medical laboratory professionals perform a full range of laboratory tests in microbiology, parasitology, biochemistry, haematology, immunology, molecular biology, cytology, histopathology and transfusion medicine. Some of the common roles involve;

- Perform and evaluate pre-analytical, analytical, and post-analytical procedures to ensure the quality of test results.
- Perform laboratory tests, analyse, verify and report results.
- Explain the principles and methods used in laboratory tests.
- Explain the clinical significance of test results in diagnosis, treatment and prevention of diseases.
- Evaluate patient results and suggest or conduct appropriate additional testing.
- Determine the priority of test requests and arrange the workload for optimal patient care and efficiency.
- Obtain acceptable samples for laboratory tests using standard sample collection procedures.
- Implement quality assurance principles and practices to ensure the accuracy and reliability of test results.
- Perform preventive and corrective maintenance of

- equipment.
- Apply major principles and practices of laboratory management.
 - Explain and apply principles of effective test utilization.
 - Comply with all safety regulations and monitor changes in safety regulations.
 - Use educational methods to present information and develop instructional materials.
 - Use effective information management systems to produce documents, research information, communicate with others and enter and retrieve laboratory information.
 - Demonstrate professional conduct with laboratory personnel, other health care professionals, patients and the public.
 - Demonstrate ethical standards in all matters related to medical information and patient care.

The detailed and specific responsibilities of different levels of laboratory professionals are outlined in the annexure.

Accountability

Medical laboratory professionals are accountable both legally and professionally to the patient, public, regulatory body, their employer and any relevant supervisory authority for their practice, decisions and the consequences of those decisions undertaken independently or collectively as a member of the healthcare team. Medical laboratory professionals should justify their decisions in the context of legislation, professional standards and guidelines, evidence-based practice and professional and ethical conduct. They are also accountable for maintaining competency as per the changing needs.

Continuous Professional Development (CPD)

Medical Laboratory professionals are expected to keep up to date on the most recent advances in laboratory science to maintain high standards of competence in terms of knowledge, skills, and behavior. An effective CPD

programme is critical to ensure that the laboratory professionals:

- retain core competencies to practice safely and effectively
- develop individually and remain updated with best practices
- reiterate prior learning
- advance in order to be able to guide and train new professionals effectively
- expand on individual competencies to pursue interests which may be independent or complement their current role and/or scope of practice
- enhance the quality of their practice to provide better service.

Continuous professional development may be accomplished through self-study, web-based learning, hands-on workshops and training in the special areas.

Delegation and Supervision

Delegation and supervision shall take place within the scope of practice by the authorized and registered medical laboratory professional to another licensed person to perform selected acts, tasks, or functions. The delegator must be available to provide the necessary and appropriate level of supervision required by the delegate. A medical laboratory personnel who is supervising subordinates must ensure that s/he communicates continuously and effectively with those being supervised; is available on a regularly scheduled basis to review the practice of those being supervised, review records, and further educate those being supervised in the performance of their tasks. Supervision may include overseeing, directing, guiding, supporting and evaluating the personnel who are being supervised by them. When delegating a particular role or activity, the medical laboratory professionals should take account of following principles:

- ensure that the primary motivation for delegation is to serve the interests and needs of the patient

- assess the degree of risk involved in the delegation
- take into account the level of experience, competence, role and scope of practice of the person taking on the delegated task
- not delegate to junior colleagues if it is beyond his/her scope of practice or competency
- ensure appropriate assessment, planning, implementation, monitoring and evaluation of the delegated role or activity
- communicate the details of the role or activity in a clear and understandable way
- decide on the level of supervision and feedback required
- ensure that the practice setting supports the delegated role or activity

Practice Setting

Medical Laboratory professionals' practice in various settings such as public or private healthcare centres, nursing homes, diagnostic centres, research labs etc. which are equipped with testing facilities. They also have diverse roles as direct service provider, educator, manager, researcher and consultant.

Collaborative Practice

The Medical laboratory professionals collaborate with other healthcare professionals (doctors, nurses, etc.) to share their specialized knowledge and expertise which adds value in diagnosis, treatment, and disease management. Medical laboratory professionals collaborate with relevant healthcare programmes to support effective programme implementation resulting in a contribution to better healthcare services. They also collaborate in a general screening of communities, workshops and continuous medical education, and research.

Expanded practice

Medical laboratory professionals have opportunities to expand their scope of practice through relevant credentials and training, and after obtaining registration from the Bhutan Medical and Health Council (BMHC). The professionals with expanded practice possess special knowledge and skills to perform special tests and advance testing procedures in the laboratory.

1. Appendix - Scope of practice

Level	Technical Role	Education	Experience Level	Certification
Level I	<p><u>Pre-Analytical</u></p> <ol style="list-style-type: none"> 1. Registry 2. Phlebotomy 3. Specimen collection, storage & transport 4. Sample shipment 5. Order Entry–Accessioning 6. Sample processing before analysis 7. Sterilization and decontamination <p><u>Analytical</u></p> <ol style="list-style-type: none"> 1. Quality assurance and standardization 2. Routine biochemistry sample processing and validation 3. Routine haematology sample processing and validation 4. Routine blood bank testing 5. Basic Histopathological sample processing 6. Cytopathological sample processing, screening and reporting 	Certificate/ DMLT/ BMLT/ Masters	Entry level	Certificate /DMLT/ BMLT/ Masters

	<p>7. Operation of photometer</p> <p>8. Routine microbiology sample processing and reporting</p> <p>9. Immuno-chromatography test</p> <p>10. Basic laboratory staining and microscopic examination</p> <p>11. Preparation of media & basic reagents</p> <p>12. Infection control procedures</p>			
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Level	Technical Role	Education	Experience Level	Certification
Level II	<p><u>Biochemistry</u></p> <p>1. Automated Chemistry sample processing and validation of results*</p> <p>2. Immuno-Chemistry sample processing and validation of result, TDM*</p> <p>3. Prepare sample for analyzing Therapeutic Drugs in TDM analyzer*</p>	Certificate/ DMLT / BMLT/ Masters	Relevant experience (5 years is required)	<p>Certificate/ DMLT/ BMLT/ Masters in relevant field</p> <p>*additional training/ education may be required with certificates obtained for carrying out special tests</p> <p>*In country, Ex-country and On job training</p>

	<p><u>Haematology</u></p> <ol style="list-style-type: none"> 1. Haematology special test, sample processing and validation of test results* 2. Operation of Automated haematology analyser. 3. Advance coagulation studies. 4. PBS screening and reporting*. 5. Immuno-phenotyping: sample processing, result interpretation * and dispatch 6. Haemoparasite microscopy* <p><u>Blood Banking **</u></p> <ol style="list-style-type: none"> 1. Blood donation procedures 2. Blood component preparation 3. Basic Immunohematology testing 4. Haemovigilance system* <p><u>Histopathology</u></p> <ol style="list-style-type: none"> 1. Frozen section and staining 2. Special stain techniques and reagent preparation 3. Immunohistochemistry (IHC) 4. Direct Immunofluorescence (DIF) 			
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	<p><u>Cytology</u></p> <ol style="list-style-type: none"> 1. Thin-prep-Liquid Based Cytology 2. Cyto immunochemistry <p><u>Microbiology</u></p> <ol style="list-style-type: none"> 1. Pathogen Cultures, identification and AST 2. Microscopic and Macroscopic screening for parasites (bacterial, fungal and TB) including DST 3. Identification of aerobes, anaerobes, or mixed cultures 4. Recognition of potential organisms 5. Confirmatory testing and sub-culturing 6. Culture media selection 7. Inoculation/loading of automated equipment <p><u>Quality Assurance</u></p> <p>QC material preparation, processing, interpretation and troubleshooting*</p>			
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Level	Technical Role	Education	Experience Level	Certification
Level III	<p>*Advanced techniques</p> <ol style="list-style-type: none"> 1. Advanced techniques in Microbiology 2. Advance technique in blood banking 3. Advanced techniques in Immuno-haematology. 4. Advanced techniques in haematology 5. Advanced techniques in Biochemistry 6. Advanced techniques in Histopathology 7. Blood donation screening and procedures 8. Simple DNA Probes, Gene Xpert 9. Advanced molecular testing 10. Troubleshooting 11. Research and development 12. Epidemiology 13. Test Development 	Certificate/ DMLT/ BMLT/ Masters	Relevant experience is required	<p>*Certificate/ *DMLT/ *BMLT/ Masters in relevant field</p> <p>*additional training/ education may be required with certificates obtained for carrying out special tests</p> <p>*In country, Ex-country and On job training</p>

Level	Management Role	Education	Experience Level	Certification
Level IV	*MANAGEMENT	DMLT/ BMLT/ Masters	Relevant experience	*Masters/ *BMLT/ *DMLT
	<ol style="list-style-type: none"> 1. Management of the laboratory 2. Quality Management 3. Troubleshooting 4. Information Management 5. Personnel Management 6. Productivity and performance monitoring 7. Inter and Intra disciplinary management 8. Technical Management 9. Research protocols 10. Data Management and Problem Solving 11. Equipment and reagent selection 12. Engage in planning and set priorities 			*require essential skills for management and domain knowledge

2. Definitions

1. **Accountability**

It means being answerable for the decisions made in the course of one's professional practice.

2. **Collaborative practice**

It is the professional relationship between different healthcare professionals which involves respectful, effective communication and appropriate documentation which are essential elements in providing safe, quality health care to patients and in identifying and managing risks.

3. **Competence**

A distinct composite of knowledge, skill, attitude and value that is essential to the practice of the profession.

4. **Continuous professional development**

Lifelong learning process to augment the knowledge, skills and attitude for enhancement of practice, education, leadership and research in an ever-changing healthcare environment.

5. **Delegation**

It is the transfer of responsibility for the performance of a task to another licensed professional while retaining the accountability for the outcome.

6. **Expanded practice**

Broadened role of laboratory practice after obtaining additional qualification/ training that have not previously been within their scope of practice, but are within the overall scope of practice.

7. **Practice setting**

The practice setting refers to the place in which the health professionals work and the nature of the working environment.

8. Roles and Responsibilities

The obligation to perform duties, tasks or roles using sound professional judgement and being answerable for the decisions made in doing this.

9. Scope of Practice

The range of roles, functions, responsibilities and activities which a registered health professional is educated, competent and has authority to perform.

10. Supervision

It is overseeing, directing, guiding, supporting and evaluating trainees by the senior employee/supervisor.

3. Abbreviations

1. BMLT: Bachelor of Science in Medical Laboratory Technology
2. CPD: Continuous Professional Development
3. Certificate level: Laboratory Technicians with certificate level qualification
4. DMLT: Diploma in Medical Laboratory Technology

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