



Medical Laboratory Science Council of Nigeria

Guideline on Staffing Requirements of Medical Laboratory Science Practitioners

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Policy Statement	MLSCN shall continue to pursue quality service delivery in all Medical Laboratory Services and considers deployment of adequate number and quality Medical Laboratory Professionals in all health facilities as critical requirement and hence, this Guidelines on Staffing Requirements of Medical Laboratory Science Practitioners.

ACRONYMS

DMLS	- Director, Medical Laboratory Science
DDMLS	- Deputy Director, Medical Laboratory Science
ADMLS	- Assistant Director, Medical Laboratory Science
AMLSCN	- Associate of Medical Laboratory Science Council of Nigeria
BMLS	- Bachelor in Medical Laboratory Science
FMLSCN	- Fellow of Medical Laboratory Science Council of Nigeria
MLS	- Medical Laboratory Science
WISN	- Workload Indicators of Staff Need
WHO	- World Health Organisation

DEFINITIONS

HUMAN RESOURCES

People who make up the workforce of an organisation, business sector or economy

HEALTH WORKFORCE

All persons or staff involved in carrying out activities in health sector. It is all peoples engaged in actions whose intent is to enhance health (WHO, Health report 2006).

“Medical Laboratory Science”-

- a) Means the practice involving the analysis of human or animal tissues, body fluids, excretions, production of biologicals, design and fabrication of equipment for the purpose of medical laboratory diagnosis, treatment and research; and
- b) includes medical microbiology, clinical chemistry, chemical pathology, haematology, blood transfusion science, virology, histopathology, histochemistry, immunology, cytogenetic, exfoliative cytology parasitology, forensic science, molecular biology, laboratory management; or any other related subject as may be approved by the Council;

“Scientist” means a person qualified for enrolment with the Council as a Fellow or as an Associate, as the case may be but does not include any person entitled in an honorary capacity.

Subject to the provision of the MLSCN Act 11 of 2003 Section 18, Sub-section 2, “no person not being a fully registered medical laboratory scientist under this Act shall be entitled to hold any appointment in the Public Service of the Federation or state or any public or private establishment, body or institution, if the holding of such appointment involves the performance by him in Nigeria or any act pertaining to the profession of medical laboratory sciences for gain”.

INTRODUCTION

Medical Laboratory workforce includes multiple categories of medical laboratory science practitioners' who have various levels of education and training ranging from Medical Laboratory Assistant, Medical Laboratory Technician to Associate (AMLSCN), BMLS and graduates of professional degrees (Fellows – FMLSCN).

Medical Laboratory Testing is an integral testing with accurate and reliable results is a product of proper human resources management with appropriate workload, functional equipment and conducive environmental condition.

Therefore, this guideline is meant to give direction towards maintaining the goal of human resources management and planning vis-a-vis the right number of person to conduct specific number of tests, right skills, in the right place, and time, with the right attitude doing the right work at the right cost.

Staffing decisions for MLS profession had to consider two main issues:

- (a) Existing departments and Work stations/benches in a facility.
- (b) Workload indices with available working time for carrying out each activity.

SCOPE

The scope of this Document covers all medical laboratory facilities where testing is carried out.

RATIONALE

The rationale of this document is to:

1. Assess the workload pressure of Medical Laboratory Science practitioners' in a given facility.
2. Determine the number of Medical Laboratory practitioners required to cope with the workload in a given facility.

STEPS TO DETERMINE STAFFING NEED (See table 1 below)

1. Calculate available working time (An average of eight (8) hours per day).
2. Define workload components.
 - a). Number of samples to be examined within eight (8) hours.
 - b). Availability of functional equipment.
 - c). Availability of appropriate consumables.
 - d). Conducive working environmental conditions.
 - e). Trained, knowledgeable and skilled staff.
3. Set activity standards.
 - a) Engage Qualified and Licensed Medical Laboratory Practitioners as stipulated in the Scheme of Service for appropriate administrative duties, supervision and testing.

MEDICAL LABORATORY TECHNICIAN CADRE

1. POSTS AND SALARIES:

- 1.1 Medical Laboratory Technician Grade Level 07
- 1.2 Higher Medical Laboratory Technician Grade Level 08
- 1.3 Senior Medical Laboratory Technician Grade Level 09
- 1.4 Principal Medical Laboratory Technician Grade Level 10
- 1.5 Assistant Chief Medical Laboratory Technician Grade Level 12
- 1.6 Chief Medical Laboratory Technician Grade Level 13

2. DUTIES

2.1 Medical Laboratory Technician, Grade Level 07

- 2.1.1 Collecting, examining and analyzing specimen from patients to provide the information required by Medical Officer for diagnosis and treatment.
- 2.1.2 Preparing chemical solutions, reagents, microscope slides and culture media for laboratory tests.
- 2.1.3 Caring for and maintaining laboratory equipment
- 2.1.4 Carrying out microscopic examination of specimen for pathogens.
- 2.1.5 Analyzing body fluids, classifying and processing blood to determine types and to separate stain from blood cells.

2.2 Higher Medical Laboratory Technician, Grade Level 08

- 2.2.1 Maintaining stains and cultures; performing biochemical staining and examining fibers for bacteria and other pathogens

- 2.2.2 Preparing butter solutions, fluids, Glemsa's Leishman's stains and preserving parasites and arthropods vectors.
- 2.2.3 Carrying out declassification and preparation of paraffin.
- 2.2.4 Analyzing urine and cerebrum spinal fluid, quantitative estimation of any lass, glucose.

2.3 Senior Medical Laboratory Technician, Grade Level 09

- 2.3.1 Identifying of malaria parasites, trypanosomes, spirochetes and other protozoa by using concentration methods.
- 2.3.2 Preparing anticoagulants used in blood transfusion and carrying out other supervisory duties as may be assigned.
- 2.3.3 Treating blocks before cutting, preparation and use of Erlich's Harries flames and Weigert Haematoxyline.
- 2.3.4 Supervising a number of Medical/Veterinary Laboratory Technicians, Assistants and Attendants.
- 2.3.5 Ensuring that laboratory equipment and glassware are properly sterilized and maintained in good condition.

2.4 Principal Medical Laboratory Technician, Grade Level 10

- 2.4.1 Taking charge of routine investigation.
- 2.4.2 Producing and testing of vaccines and taking charge of the production of special media for diagnostic work.
- 2.4.3 Organizing training programmes for students and junior staff.

2.5 Assistant Chief Medical Laboratory Technician, Grade Level 17

- 2.5.1 Taking charge of the Laboratory services in any of the specialties.
- 2.5.2 Advising on policy matters relating to laboratory services.
- 2.5.3 Supervising the activities of Junior Officers in the various sections of laboratory.
- 2.5.4 Organizing training programmes for laboratory personnel.

2.6 Chief Medical Laboratory Technicians, Grade Level 13

- 2.6.1 Coordinating the duties of all the Medical/Laboratory Technicians and assigning other responsibilities might arise from time to time.
- 2.6.2 Procuring laboratory equipment, media, stains and chemical reagents
- 2.6.3 Maintaining technical data and records in the research and service laboratory and assuming total responsibility for all laboratory technicalities.

MEDICAL LABORATORY SCIENTIST CADRE

1 POSTS AND SALARIES

- 1.1 Medical Laboratory Scientist Grade II Grade Level 08
- 1.2 Medical Laboratory Scientist Grade I Grade Level 09
- 1.3 Senior Medical Laboratory Scientist Grade Level 10
- 1.4 Principal Medical Laboratory Scientist Grade Level 12
- 1.5 Assistant Chief Medical Laboratory Scientist Grade Level 13
- 1.6 Chief Medical Laboratory Scientist Grade Level 14
- 1.7 Assistant Director Medical Laboratory Services (ADMLS) Grade Level 15
- 1.8 Deputy Director Medical Laboratory Services (DDMLS) Grade Level 16
- 1.9 Director Medical Laboratory Services (DMLS) Grade Level 17

2. DUTIES

2.1 Medical Laboratory Scientist Grade II, Grade level 08

- 2.1.1 Performing, under the supervision of Senior Officers, the following duties;
- 2.1.2 Preparing stains, reagents and simple media for cultivation of bacteria to perform cross-matching; compatibility tests of blood for blood transfusion and simple serological tests.
- 2.1.3 Performing tests in Chemical Pathology, Histopathology, Haematology, Parasitology and Medical Microbiology.
- 2.1.4 Carrying out quantitative simple, chemical analysis of food, drugs, cosmetics and medical devices.
- 2.1.5 Carrying out minor repairs of laboratory equipment.
- 2.1.6 Supervising the works of a number of laboratory staff in his unit.

2.2 Medical Laboratory Scientist Grade I, Grade Level 09

- 2.2.1 Performing advanced test in Medical Microbiology, Histopathology Haematology, Chemical Pathology, Parasitology and Blood Transfusion.
- 2.2.2 Maintaining and carrying out minor repairs of laboratory equipment.
- 2.2.3 Identifying for stores and Medical equipment from the Medical Store.
- 2.2.4 Taking charge of a large hospital or Public health Laboratory Department and Blood Bank.
- 2.2.5 Assisting in the training and supervision of junior staff in the laboratory.

2.3 Senior Medical Laboratory Scientist, Grade level 10

- 2.3.1 Producing and testing vaccines.
- 2.3.2 Producing special media for vaccines and diagnostic work.
- 2.3.3 Maintaining stains and cultures.
- 2.3.4 Caring breeding laboratory animals.
- 2.3.5 Taking charge of a number of sub-units of a research laboratory or a number of field laboratories.

- 2.3.6 Organizing training programmes for junior staff.
- 2.3.7 Indenting and supplying stores and equipment
- 2.3.8 Supervising and coordinating the activities of a number of laboratory Scientists and other junior staff in a unit

2.4 Principal Medical Laboratory Scientist, Grade Level 12

- 2.4.1 Assisting in supervising coordinating the activities of junior officers in the various Units of the laboratory.
- 2.4.2 Taking charge of a specialized aspect of a research project.

2.5 Assistant Chief Medical Laboratory Scientist, Grade Level 13

- 2.5.1 Assisting in the Administration of laboratories in the Section
- 2.5.2 Assisting in rendering appropriate reports on the activities of the Laboratory
- 2.5.3 Assisting in co-ordinating the training programmes for laboratory staff.

2.6 Chief Medical Laboratory Scientist, Grade Level 14

- 2.6.1 Taking charge of the general administration of laboratory services in a Section.
- 2.6.2 Organizing, planning and ensuring execution of training programmes for laboratory personnel.
- 2.6.3 Advising on policy matters relating to Medical Laboratory Technology
- 2.6.4 Rendering appropriate reports on the activities of the laboratories
- 2.6.5 Maintaining technical data and records in the service laboratories
- 2.6.6 Budgeting and ordering for laboratory equipment and chemical reagents.

2.7 Assistant Director Laboratory Services GL 15

- 2.7.1 Assigning responsibilities to and supervising subordinates
- 2.7.2 Ensuring maintenance of quality control and standards in service laboratories
- 2.7.3 Collating and reviewing annual reports
- 2.7.4 Evaluating and monitoring reports on epidemiological surveys.
- 2.7.5 Assisting in employment and ensuring adequate and continuous training of Medical Laboratory Personnel.
- 2.7.6 Advising on policy matters relating to Medical Laboratory Services.
- 2.7.7 Taking charge of a branch
- 2.7.8 Assisting in the general administration of the department

2.8 Deputy Director/ Director (States) GL 16

- 2.8.1 Taking Charge of a Division/ Department (States)
- 2.8.2 Ensuring execution of adequate training programs for Medical Laboratory Personnel

- 2.8.3 Organizing periodic seminar and conferences on Laboratory techniques and management
- 2.8.4 Taking responsibility for medical laboratory services development planning.
- 2.8.5 Maintaining quality control of standard techniques and results
- 2.8.6 Exercising general supervision on laboratory matters
- 2.8.7 Undertaking resource planning and utilization
- 2.8.8 Assisting in the general administration and policy formulation on Medical Laboratory Services
- 2.8.9 Advising on the formulation, execution and review of medical laboratory policy and programmes

b) All specified activities carried with standard operating procedures (SOP).

- 4. Establish standard workload (That is, number of samples per Medical Laboratory Science Practitioner per bench within the eight (8) hours).
- 5. Calculate allowance factor (salaries and other approved allowances)
- 6. Determine staff requirement.

MINIMUM STAFF REQUIREMENTS BY DEPARTMENTS

A	B	C	D	E	F
DEPARTMENTS	WORKBENCHES (Facility specific, may vary)	ESTIMATED NUMBER OF TESTERS PER BENCH 8HOURS	ESTIMATED WORKLOAD (AVERAGE NUMBER OF SAMPLES PER BENCH PER 8HOURS)	TOTAL NO OF SAMPLES/ 8HRS/DEPARTMENT	RECOMMENDED STAFF REQUIRED
				(BXD)	(BXC)
MICROBIOLOGY	5	2	20	100	10
CLINICAL CHEMISTRY/CHEMICAL PATHOLOGY	6	2	30	180	12
HAEMATOLOGY	4	2	20	80	8
HISTOLOGY	3	2	30	90	6
VIROLOGY	2	2	20	40	4
FORENSIC LABORATORY	5	1	5	25	5
Administrative Cadre/ Supervisors - As needed					

FOOTNOTE:

TABLE 1

Column A: Department within the medical Laboratory Science Profession (Not exhaustive)

Column B: The average workstations or benches in each department (This may vary according to the facility)

Column C: It is estimated that a minimum of 2 Scientist or 1 Scientist with a Technician will be able to man a workstation/work bench daily.

Column D: The estimated workload is calculated from the estimated time it could take to process 1 Sample on a workstation multiplied by the available work time of 8hrs excluding approved break time of 1hr.

Therefore, available work time becomes 7hrs. (e.g if it takes 20 minutes to read a thin blood film, in 7hrs how many slides can a Scientist report on.

7hrs = 420 minutes = 21 Slides Per day(average)

Therefore the estimated workload haematology per day per bench is approximately 20 Samples.

Column E: The total number of Samples for all workstations in the department is gotten by multiplying the estimated individual workstations load by the number of workstations.

e.g for Haematology

4(workstations) x 20(samples) i.e. $B \times D = 80$ Samples per day

For Microbiology- 5(workstations) X 20(samples) i.e. $B \times D = 100$

Column F: The minimum recommended number of Staff required is a combination of the workstation, testers and the workload average per 8hrs

Example-Microbiology

WorkStation= 5

Testers/bench= 2

Workload average/8hrs (20 Samples)/1 day

= $5 \times 2 \times 1 = 10$ Staff

If workload/8hrs increases to 40 Samples

= $5 \times 2 \times 2 = 20$ Staff

As a facility workload increases above the recommended no of samples, there will be need to increase the number of testers.

REFERENCES

- i. MLSCN Act,2003 LFN CAP 25.
- ii. WHO, 2010. Workload Indicator of Staffing Need(WISN), User's Manual.
- iii. Federal Republic of Nigeria Schemes of Service

For further enquiries/ clarifications, contact MLSCN DPRS.