



[TYPE THE COMPANY NAME]

Medical Laboratory Service NTQF Level III

Learning guide #52

Unit of Competence: Perform urinalysis Tests


Module Title: Performing urinalysis Test

LG Code: HLT MLS3 Lo4-LG52

TTLM Code: HLT MLS3 TTLM 0919 V- 1

LO4. Maintain laboratory records

Medical Laboratory Level III	Vision :01 Sep. 2019:	Page 1 of 22
	Copyright Info/Author: Federal TVET Agency	

	Learning guide #49	Unit	Performing Urine and Body Fluid analysis
		Module	Maintain laboratory records

Welcome to the module “Performing Urine and Body Fluid analysis”. This learner’s guide was prepared to help you achieve the required competence in “**Medical laboratory services Level-III** this will be the source of information for you to acquire knowledge and skills in this particular occupation with minimum supervision or help from your trainer.

Summary of Learning Outcomes

After completing this learning guide, you should be able to:

LO4. Maintain laboratory records

1. Entering of data on report forms or into computer systems
2. Maintaining log of Instruments
3. Recording of received urine
4. Maintaining Security and confidentiality
5. Maintaining Laboratory data and records

Learning-instructions

1. Read the contents of this Learning Guide. It is divided into sections that cover all the skills and knowledge that you need.
2. Read the information written in the “Information Sheet #1, #2, and # 3”.
3. Accomplish the “Self-check #1 on page 15 &16, #2 on page 20, and #3 on page 23
4. If you earned a satisfactory evaluation on self-check proceed to next learning Guide. However, if your rating is unsatisfactory, see your teacher for further instructions.

5. Read the “Operation Sheet” and try to understand the procedures discussed.
6. Practice the steps or procedures as illustrated in the operation sheet. Go to your teacher if you need clarification or you want answers to your questions or you need assistance in understanding a particular step or procedures

Instruction Sheet #1	Learning Guide #49
---------------------------------	---------------------------


This learning guide is developed to provide you the necessary information regarding the

Following content coverage and topics –

- Entering of data on report forms or into computer systems
- Maintaining log of Instruments
- Recording of received urine
- Maintaining Security and confidentiality
- Maintaining Laboratory data and records

Learning Activities

1. Read the information written in the “Information Sheets”.
2. If you earned a satisfactory evaluation proceed to next module. However, if your rating is unsatisfactory, see your teacher for further instructions.
3. Read the “Operation Sheet” and try to understand the procedures discussed.
4. Practice the steps or procedures as illustrated in the operation sheet. Go to your teacher if you need clarification or you want answers to your questions or you need assistance in understanding a particular step or procedure

	Information sheet #1	LG #52	Performing urine & body fluids analysis
		Topic	Maintain laboratory records

LO4. Maintain laboratory records

4.1. Record keeping/information transcription

Increasingly, service providers are expected to keep records of interventions with clients. While this can seem time-consuming and difficult, good record keeping is:

- Key to an effective service.
- help in monitoring and improvement of your service delivery.
- Help you in obtaining funding - they are a way of demonstrating the work you do and the successes you have.

Minimum Standards of records

- The provider has policies and procedures for handling information about clients, including confidentiality and data protection
- Record keeping systems are maintained and regularly monitored.
- Staffs are trained in the operation of recording systems and understand the scope of their authority to access information.
- Staffs understand and work in line with the requirements of the Data Protection Act.
- Clients are aware of their rights to access information and are enabled to exercise these rights.
- There are policies and procedures for sharing information with external agencies and clients are made aware of this on admission.
- Records are written in a clear, concise and impartial manner and are dated and signed by the author
- Statistical data is made available to inform development of local homelessness strategy.
- Most health service providers keep records in order to provide better support to clients.

5.1.1. Types of records

Service providers keep a large quantity of information relating to individual clients, often of a sensitive nature, contained in all or any of the following records:

- Referral and admission forms.
- Key working notes, agreements, needs assessments, and plans
- Resettlement agreements and plans
- Needs assessments
- Risk assessments and management plans
- Minutes of meetings with clients
- Records of warnings, exclusions and bans
- Correspondence on behalf of or about clients.

These records are usually combined to form a 'client file'.

Some services have revolutionized the system of the client or client file by allowing people to look after their own file.

In day centers this system is probably best administered where the worker takes copies for a central 'staff' file, but this is with the consent and sign off of the client. This system is felt to

be empowering to the clients, and encourage real partnership working on key work/support plans.

- Other records need to be kept of daily operations in:
- Log book (day book)
- Diary
- Hand-over records
- Medication records
- Accident book (health and safety)
- Incident reporting file.

4.2. Characteristics of records

1 Recordkeeping should be Compliant

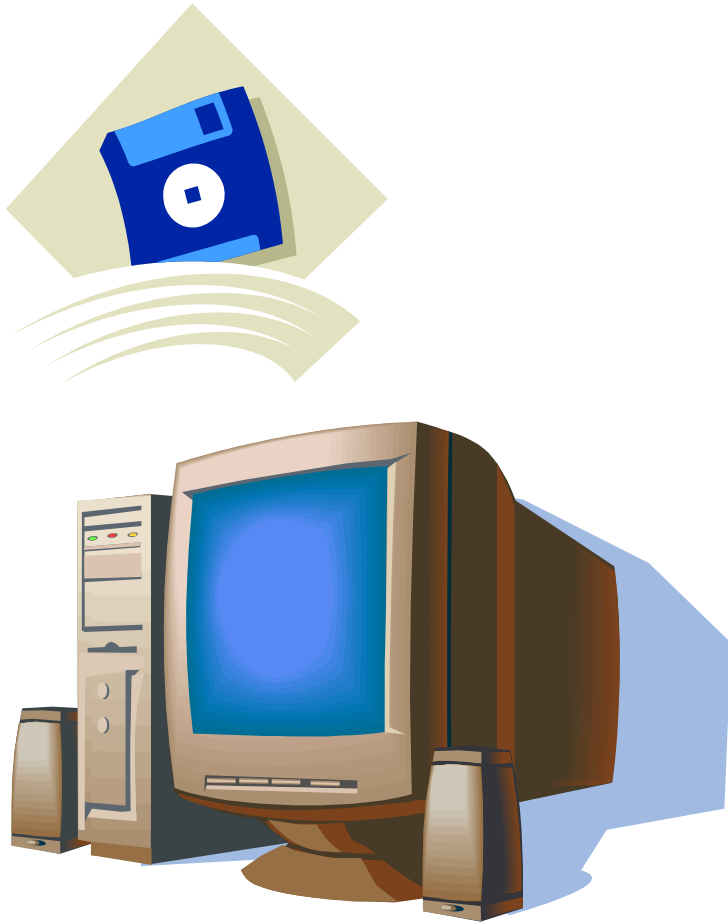


2 Record keeping should be Reliable

Record keeping systems, procedures and practices should work reliably to ensure that records are credible and authoritative.

3 Recordkeeping should be Systematic

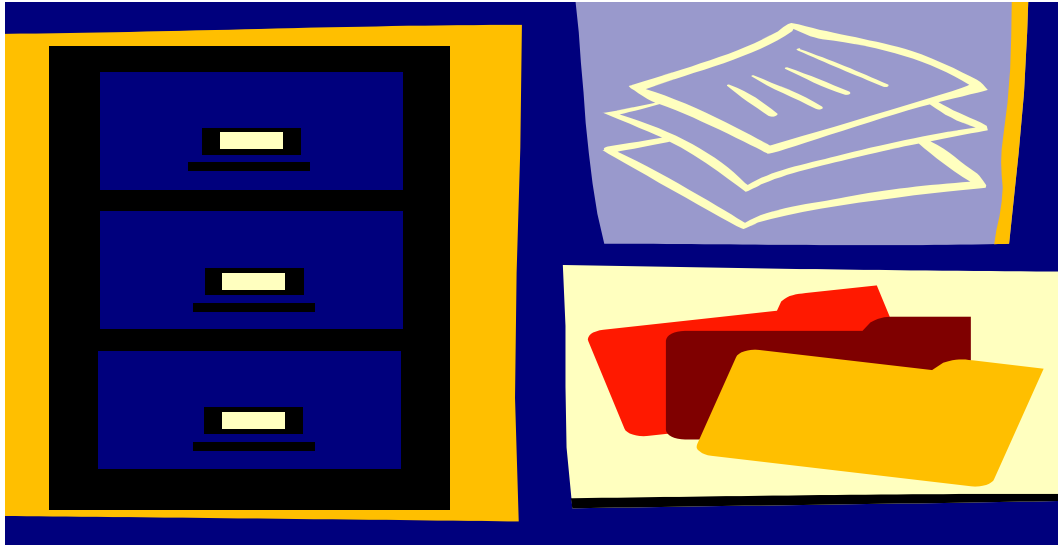
Records should be made, maintained and managed systematically.



4 Recordkeeping should be Managed

Record keeping must be managed through an identifiable records management program.

Recordkeeping systems must have accurately documented policies, assigned responsibilities, and formal methodologies for their management. This applies equally to dedicated recordkeeping systems and to business application systems functioning as recordkeeping systems.



5 Recordkeeping should be Audited

Record keeping systems, procedures and practices should be audited to ensure compliance with regulatory requirements.

Recordkeeping practices, systems and procedures of public sector bodies operate within a regulatory regime. This regime may consist of standards and requirements to ensure the creation, management and disposal of full and accurate records. It is essential that the recordkeeping practices, systems and procedures are audited on a regular basis. The audits will:

- Identify areas of non-compliance within existing regulatory requirements
- Identify problem areas for public sector bodies, thus allowing for internal corrective actions
- Improve the quality and reliability of public records.



6 Recordkeeping should be Routine

Record keeping systems should be used when transacting business.



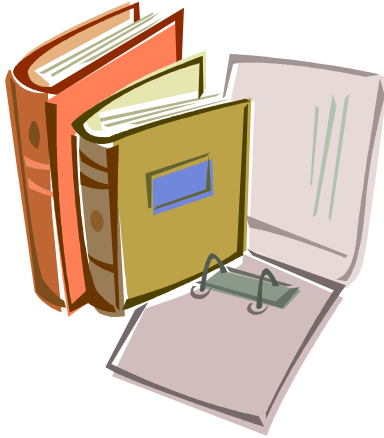
7 Records should be made

Records should be made to document and facilitate the transaction of business and captured into recordkeeping systems.



8 Records should be retained

Records should be retained for as long as they are needed.



9 Records should be Complete

A record should contain not only the content, but also the structural and contextual information necessary to document a transaction. It should be possible to understand a record in the context of the organizational processes that produced it and of other, linked records.

A record comprises content, structure and context. The elements that make up the structural and contextual parts of the record are known as recordkeeping metadata.

10 Records should be Comprehensive

Records should document the whole of the business of a public sector bodies.

Records should be made of all facets of the public sector body's operations. Recordkeeping should not be selective, so that some parts of the business have no records at all. Recordkeeping should take place in all technological environments in which the organization carries out its business.

11 Records should be Adequate

Records should be adequate for the purposes for which they are kept.

Records are kept to support future business activity and to meet accountability requirements. A record must be adequate to the extent necessary to:

- facilitate action by employees (including agents and contractors) at any level and by their successors
- make possible a proper scrutiny of the conduct of business by anyone authorized to undertake such scrutiny, and
- Protect the financial, legal and other rights of the organization, its clients and any other people affected by its actions and decisions.

12 Records should be Accurate

Records should correctly reflect what was communicated, decided or done.

Recordkeeping procedures and practices must be designed to ensure that a record correctly reflects what occurred. Business processes and systems should be designed to make it easy, or even automatic, to make accurate records of transactions.

Falsifying information in a record is illegal.

13 Records should be Authentic

Records should be what they purport to be.

It must be possible to prove that records are what they purport to be and that their purported creators, including the senders of communications, indeed created them. The recordkeeping system must operate so that the records derived from it are credible and authoritative. It should be possible to show that the recordkeeping system was operating normally at the time the records were captured by the system.



14 Records should be Useable

Records should be identifiable, retrievable, accessible and available when needed.

To be able to be used, records must be maintained in such a way that they can be quickly and easily identified and retrieved when they are required. Availability is different, however, from accessibility. Records are not available unless retrieval systems are adequate, but access to records may be tightly restricted (for example, for security or privacy reasons). It is not necessary that access to records be unrestricted to comply with this principle.

15 Records should be Inviolable

Records should be securely maintained to prevent unauthorized access, destruction, alteration or removal.

Records should be kept using facilities, materials and methods which promote their survival undamaged for as long as they are needed. Records should be protected from tampering, unauthorized alteration, and from accidental or intended damage or destruction. The protection can include the physical security of premises, the selection of appropriate materials and systems, and procedures which hinder loss or unauthorized alteration.

Patient confidentiality

Confidentiality is the right of an individual to have personal, identifiable medical information kept private.

Patient confidentiality means that personal and medical information given to a health care provider will not be disclosed to others unless the individual has given specific permission for such release.

Because the disclosure of personal information could cause professional or personal problems, patients rely on physicians to keep their medical information private. It is rare for medical records to remain completely sealed, however. The most benign breach of confidentiality takes place when clinicians share medical information as case studies. When this data is published in professional journals the identity of the patient is never divulged, and all identifying data is either eliminated or changed. If this confidentiality is breached in any way, patients may have the right to sue.

The greatest threat to medical privacy, however, occurs because most medical bills are paid by some form of health insurance, either private or public. This makes it difficult, if not impossible, to keep information truly confidential.

LO5. Maintain a safe work environment

Common hazards in health laboratories

The following are important hazards that require assessment and management in health laboratories:

- Naked flames
- Microbial hazards
- Chemical hazards
- Unreliable water supply
- Equipment hazards
- Explosions
- Infestation by ants,
- Glassware hazards
- Sharps hazards

Common causes of accidents in health laboratories

Hazards	
<p>Types of laboratory hazards</p>	<p>Injury from chemicals – When chemicals with irritating fumes are used in a laboratory with Inadequate ventilation. – When hazardous chemicals are stored on high shelves or on the floor Under benches.</p> <p>Injury from equipment: – When electrical equipment has faulty earthing or insufficient ventilation. – when unsafe adaptors or extension leads are used because there are Insufficient electric wall points. – when the laboratory has no preventive maintenance schedules and</p>

	<p>equipment is not inspected regularly for defective insulation, corrosion, And loose connections.</p>
Naked flames	<p>Injury from fire caused by lighted Bunsen burners, spirit burners, tapers, matches, alcohol swabs, ring burners, stoves:</p> <ul style="list-style-type: none"> – When a lighted burner is placed in sunlight, making the flame difficult to see – When a Bunsen burner, ring burner, match, or taper is lit too close to a Flammable chemical. – When a lighted taper is carried across the laboratory close to where a flammable stain or reagent is being used or stored
Chemical hazards	<p>Toxic or harmful chemicals causing serious ill health, injury, or irritation:</p> <ul style="list-style-type: none"> – When toxic or harmful chemicals are swallowed by being mouth- Pipetting. – When fumes from irritant chemicals are inhaled in poorly ventilated areas of the laboratory – When no protective goggles or gloves are worn and harmful chemicals enter the eye or come in contact with the skin <p>Flammable chemicals causing fire:</p> <ul style="list-style-type: none"> – When flammable chemicals are used or stored near a naked flame – When a lighted ‘swab’ is used to heat stain in the Ziehl-Neelsen method and ignites nearby flammable chemicals – When the neck of a bottle containing a flammable chemical is

	<p>accidentally flamed</p> <ul style="list-style-type: none"> – When a flammable chemical is spilled near a flame <p>Corrosive chemicals causing serious injury and burns:</p> <ul style="list-style-type: none"> – When corrosive reagents are ingested by being mouth-pipetted – When strong acids are accidentally knocked from shelves or spilled – When intense heat is produced during the dilution or dissolving of a strong acid or alkali or when water is added to a concentrated acid – When a corrosive chemical comes into contact with the skin, or the eyes are splashed when opening and pouring a corrosive chemical
<p>Equipment hazards</p>	<p>Electric shock:</p> <ul style="list-style-type: none"> – When equipment is not reliably earthed or electrical circuits are faulty – When touching live wires in attempting to repair equipment or replace components, e.g. lamp, without first disconnecting the equipment from the mains – When handling electrical equipment with wet hands or standing on a wet floor <p>Fire:</p> <ul style="list-style-type: none"> – When cables and electrical equipment overheat due to overloading of conductors – When there is overheating caused by the overuse of adaptors – When insulation is inadequate or becomes damaged – When thermostats fail and there is no temperature cut-out device to prevent overheating – When electrical sparking or arching causes flammable material

	<p>to ignite</p> <ul style="list-style-type: none"> – When preventive maintenance is not carried out to check for corrosion, wear, and loose connections. <p>Injury from moving parts:</p> <ul style="list-style-type: none"> – When an open hand-centrifuge is used in a part of the laboratory where it can easily injure a person. – When a person opens a centrifuge lid and tries to stop the motor manually (where the equipment does not have a safety device to prevent this) – When a centrifuge is not balanced, resulting in the buckets and trunnions spinning off the rotor, particularly when there is corrosion
--	---

General factors that contribute to the occurrence of accidents

- Inexperience and insufficient training and supervision of staff and lack of health and safety awareness by senior laboratory officers
- Untidy working, allowing the bench to become cluttered and not using racks to avoid spillages
- Too heavy a workload for the size of laboratory and number of staff
- Rushing to finish work ‘on time’
- Loss of concentration due to a noisy working environment, constant interruptions, and excessive heat particularly in small poorly ventilated outreach laboratories
- Fatigue due to frequent emergency work during night hours.

Many of these factors can be remedied by:

- On-going health and safety training in the workplace
- Good laboratory practice and common sense
- Changing the work attitudes of laboratory staff
- Increasing health and safety awareness in the laboratory by frequent discussions on safety issues and displaying appropriate safety symbols and notices
- Monitoring and improving the working conditions of district laboratory personnel as part of total quality management

Safe working environment

- Rules concerning access to the laboratory and displaying of safety signs and notices for staff, patients, and visitors to the laboratory
- Procedures to follow to maintain local laboratory security
- How to keep the laboratory clean
- How to separate and dispose of general waste, broken glass and other 'sharps', contaminated materials, and different specimens
- Decontamination procedures
- Washing of reusable specimen containers, needles, syringes, lancets, slides, cover glasses, pipettes
- Disinfectants and their use in the laboratory
- Sterilization procedures
- Ventilation of the laboratory
- How to check the laboratory for structural damage and wear that may lead to accidents or make the premise less secure
- Maintenance schedules and routine cleaning of equipment

- Inspecting electrical equipment for damage to insulation and loose connections in plugs
- Rules for the storage and labeling of chemicals and reagents and how to keep an inventory of chemicals
- Regulations covering the safe packing and transport of specimens
- Procedure for the reporting of faults

Safe working practices

- Personal hygiene measures and wearing of safe footwear
- Regulations concerning the wearing, storing, decontamination and laundering of protective clothing
- Preventing laboratory acquired infection including regulations to avoid the accidental:
 - Ingestion of pathogens
 - Inhaling of pathogens
 - Inoculation of pathogens
- What to do when there is a spillage of a specimen or liquid culture
- Safety rules concerning the handling and storage of chemicals and reagents that are flammable, oxidizing, toxic, harmful, irritant, and corrosive, and how to manage chemical spillages
- What to do when there is a glass breakage
- How to pipette and dispense safely
- Safe operation of manual, electrical, and battery operated laboratory equipment
- Working tidily, use of racks, and rules to prevent the floor and benches from becoming cluttered and exits obstructed
- Use of protective gloves, goggles, face shield dust mask, eyewash bottle

- How to control noise levels and other causes of loss of concentration

Safe laboratory working environment

The safety of the working environment must take into consideration:

- Type of work being performed, i.e. specimens which the laboratory handles and pathogens which may be encountered
- Working practices including the procedures and equipment used
- Number of staff and workload
- Laboratory's location, climatic conditions, and security of premise

The following are important points in making the workplace safe:

- ✓ Laboratory premise that is structurally sound and in good repair with a reliable water supply and a safe plumbing and waste disposal system. Drainage from sinks must be closed and connected to a septic tank or to a deep pit. *Note:* If there is a shortage of piped water, provision must be made for the storage of water, e.g. collection of rain water in storage tanks. It is not safe for a laboratory to function without an adequate water supply
- ✓ Adequate floor and bench space and storage areas. The overall size of the laboratory must be appropriate for the workload, staff numbers, storage and equipment requirements
- ✓ Well constructed floor with a surface that is nonslip, impermeable to liquids, and resistant to those chemicals used in the laboratory. It should be bevelled to the wall and the entire floor should be accessible for washing. The floor must not be waxed or covered with matting. Floor drains are recommended
- ✓ Walls that are smooth, free from cracks, impermeable to liquids, and painted with washable light colored paint
- ✓ When practical, a door at each end of the laboratory so that laboratory staff will not be trapped should a fire break out. Doors should open outwards and exit routes must never be obstructed. Where fitted, internal doors should be

self closing and contain upper viewing panes. External doors must be fitted with secure locks

- ✓ Adequate ventilation supplied by wall vents and windows that can be opened. The windows should not face the prevailing winds to avoid excessive dust entering the laboratory in the dry season and the wind interfering with work activities. Windows should be fitted with sun blinds and insect proof screens, and when indicated secure window bars
- ✓ Sectioning of the laboratory into separate rooms or working areas. The area where blood samples are collected from patients must be away from the testing area of the laboratory. Seating should be provided for patients outside the laboratory. The specimen reception area must be equipped with a table or hatchway which has a surface that is impervious, washable, and resistant to disinfectants. There should also be a First Aid area in the laboratory containing a First Aid box, eyewash bottle and fire blanket
- ✓ Bench surfaces that are without cracks, impervious, washable, and resistant to the disinfectants and chemicals used in the laboratory. Benches, shelving, and cupboards need to be well constructed and kept free of insect and rodent infestation. Benches should be kept as clear as possible to provide maximum working area and facilitate cleaning
- ✓ Suitable storage facilities, including a ventilated locked store for the storage of chemicals and expensive equipment
- ✓ Where required, a gas supply that is piped into the laboratory with the gas cylinder stored in an outside weatherproof, well-ventilated locked store
- ✓ A staff room that is separate from the working area where refreshments can be taken and personal food and other belongings stored safely. Near to the staff room there should be a separate room with toilet and hand-washing facilities. There should be separate toilet facilities for patients.

- ✓ A hand basin with running water preferably sited near the door. Whenever possible, taps should be operated by wrist levers or foot pedals. Bars of soap should be provided, not soap dispensers. Ideally paper towels should be used. If this is not possible small cloth hand towels that are laundered daily should be provided
- ✓ Provision of protective safety cabinets and fume cupboards as required and when feasible
- ✓ Safe electricity supply with sufficient wall electric points to avoid the use of adaptors and extension leads
- ✓ Fire extinguishers sited at accessible points. These need to be of the dry chemical type. Several buckets of sand and a fire blanket are also required
- ✓ As good illumination as possible. Low energy tube lights are recommended. Window screens must be fitted to protect from direct sunlight and glare but these should not make the working areas too dark
- ✓ Provision of *separate* labeled containers for the decontamination of infected material, discarding of needles, syringes, lancets, glassware for cleaning, broken glass, and general laboratory waste. A warning symbol such as a red triangle can be used to mark containers in which infected material is placed.

Prepared By							
No	Name	Educational Background	LEVEL	Region	College	Email	Phone Number
1	Kalicha Boru	Laboratory	B	oromia	Nagelle HSC	boru9683@gmail.com	0912493885
2	Furo Beshir	Laboratory	A	Harari	Harar HSC	nebi.furo@gmail.com	0911739970
3	Motuma Chali	Laboratory	B	oromia	Nekemte HSC	lammiifcaalii@gmail.com	0938456753
4	Abdirahman Mahad	Laboratory	A	Somali	Jigjiga HSC	abdirahman7584@gmail.com	0911044715
5	Adisu Tesfaye	Laboratory	B	Somali	Jigjiga HSC	adistesfaye21@gmail.com	0931747320
6	Kebebe Tadesse	Laboratory	B	BGRS	Pawi HSC	no	0926841290

7	Tagel Getachew	Laboratory	A	Harari	Harar HSC	tagegetachew@gmail.com	0915746748
---	----------------	------------	---	--------	-----------	--	------------