



# **Nursing**

## **NTQF Level III**

### **Learning Guide # 32**

**Unit of Competence: Performing Basic Nursing Care Procedures and Techniques**

**Module Title: Performing Basic Nursing Care**

**LG Code: CON MAS2 M01 L06-06**

**TTLM Code: CON MAS2 TTLM 0112v1**

**LO 6:** Collect patient specimen from admitted patient

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics –

6.1. Specimen collection

- 6.1.1 Urine specimen
- 6.1.2 Stool specimen
- 6.1.3 Blood specimen
- 6.1.4 Sputum specimen
- 6.1.5 Other body discharges

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to –

- Identify at least three reasons for laboratory examination of urine.
- Demonstrate correct collection of the following urine
- Specimens: midstream, 24-hours, fractional and indwelling urine catheter.
- Explain at least one reason for collecting specimen like sputum, blood or stool.
- Demonstrate correct collection of a stool specimen.
- Demonstrate correct collection of a sputum specimen.

**Learning Instructions:**

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described
3. Read the information written in the “Information Sheet” Accomplish the “Self-check
4. Ask from your teacher the key to correction (key answers) or you can request your teacher to correct your work. (You are to get the key answer only after you finished answering the Self-check ).
5. If you earned a satisfactory evaluation proceed to “ next Information Sheet”. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity.
6. Submit your accomplished Self-check. This will form part of your training portfolio.
7. Read the information written in the “Information Sheet ”. Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.
8. Accomplish all self chck

<b>Information Sheet</b>	<b>Key terminology</b>
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## 6.1 Key Terminology

**Leukocyte-** white blood cell: a white blood cell (*technical*)

**Stroke** - Stoppage of blood flow to brain: a sudden blockage or rupture of a blood vessel in the brain resulting in, e.g. loss of consciousness, partial loss of movement, or loss of speech. *Technical name* cerebrovascular accident

**Hemoglobin-** oxygen-transporting substance in blood: an iron-containing protein in red blood cells that transports oxygen around the body

**Hematocrit-** percentage of blood that is cells: the percentage of a blood sample that consists of red blood cells, measured after the blood has been centrifuged and the cells compacted

**Occult** – Medicine difficult to see: not visible to the naked eye, and only detectable by microscope or chemical testing

**Urinalysis-**chemical analysis of urine: the analysis of the physical, chemical, and microbiological properties of urine, carried out to help diagnose disease, monitor treatment, or detect the presence of a specific substance

**Stroke** - Stoppage of blood flow to brain: a sudden blockage or rupture of a blood vessel in the brain resulting in, e.g. loss of consciousness, partial loss of movement, or loss of speech. *Technical name* ,cerebrovascular accident

## 6. Specimen Collection

Specimen collection refers to collecting various specimens(samples), such as, stool, urine, blood and other body fluids or tissues, from the patient for diagnostic or therapeutic purposes. Various types of specimen collected from the patient in the clinical settings, either in outpatient departments (OPD) or in-patient units, for diagnostic and therapeutic purposes. These includes, stool, urine, blood and other body fluid or tissue specimens.

### General Considerations for Specimen Collection

When collecting specimen, wear gloves to protect self from contact with body fluids.

1. Get request for specimen collection and identify the types of specimen being collected and the patient from which the specimen collected.
2. Give adequate explanation to the patient about the purpose, type of specimen being collected and the method used.
3. Assemble and organize all the necessary materials for the specimen collection.

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4. Get the appropriate specimen container and it should be clearly labeled have tight cover to seal the content and placed in the plastic bag or racks, so that it protects the laboratory technician from contamination while handling it.

- The patient's identification such as, name, age, card number, the ward and bed number (if in patient).
- The types of specimen and method used (if needed).
- The time and date of the specimen collected.

6. Put the collected specimen into its container without contaminating outer parts of the container and its cover. All the specimens should be sent promptly to the laboratory, so that the temperature and time changes do not alter the content.

### **6.1 Collecting Stool Specimen**

#### ***Purpose***

- For laboratory diagnosis, such as microscopic examination, culture and sensitivity tests.

#### ***Equipments required***

Clean bedpan or commode

- Wooden spatula or applicator
- Specimen container
- Tissue paper
- Laboratory requests
- Disposable glove, for patients confined in bed
- Bed protecting materials
- Screen

### **6.2 Collecting Urine Specimen**

Types of urine specimen collection

1. Clean voided urine specimen (Also called clean catch or midstream urine specimen)

2. Sterile urine specimen

3. Timed urine specimen

- It is two types

Short period → 1-2 hours

Long period → 24 hours

#### ***Purpose***

- For diagnostic purposes
- Routine laboratory analysis and culture and sensitivity tests

#### ***Equipments Required***

- Disposable gloves
- Specimen container
- Laboratory requisition form (Completely filled)
- Water and soap or cotton balls and antiseptic solutions (swabs).

For patients confined

- Urine receptacles (i.e. bedpan or urinals)
- Bed protecting materials
- Screen (if required)

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### ***Collecting sterile Urine Specimen***

Sterile urine specimen collected using a catheter in aseptic techniques (The whole discussion for this procedure presented on the catheterization part)

### ***Collecting a Timed Urine Specimen***

#### ***Purpose***

- ✓ For some tests of renal functions and urine compositions, such as:- measuring the level of or hormones, such as adrenocortico steroid hormone creatinine clearance or protein quantization tests.

#### ***Equipments Required***

- Urine specimen collecting materials (usually obtained from the laboratory and kept in the patient's bathroom.)
- Format for recording the time, date started and end, and the amount of urine collected on each patient's

### **6.3 Collecting Blood Specimen:**

The hospital laboratory technicians obtain most routine blood specimens. Venous blood is drawn for most tests, but arterial blood is drawn for blood gas measurements. However, in some setting nurses draw venous blood.

#### ***Purpose***

Specimen of venous blood are taken for complete blood count, which includes Hemoglobin and hemotocrit measurements

- Erythrocytes (RBC) count
- Leukocytes (WBC) count
- Differential counts

#### ***Equipment***

- Sterile gloves
- Tourniquet
- Antiseptic swabs
- Dry cotton (gauze)
- Needle and syringe
- Specimen container with the required diluting or preservative agents, for example: anticoagulant.
- Identification/ labeling: name, age address, etc.
- Laboratory requisition forms

### ***6.4 Collecting sputum specimen***

Sputum is the mucus secretion from the lungs, bronchi and trachea, but it is different from saliva. The best time for sputum specimen collection is in the mornings up on the patient's awaking (that have been accumulated during the night). If the patient fails to cough out, the nurse can obtain sputum specimen by aspirating pharyngeal secretion using suction.

#### ***Purpose***

Sputum specimen usually collected for:

- Culture and sensitivity test (i.e. to identify the microorganisms and sensitive drugs for it)
- Cytological examination
- Acid fast bacillus (AFB) tests
- Assess the effectiveness of the therapy

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***Equipments Required***

- Disposable gloves
- Specimen container
- Laboratory requisition form
- Mouth care (wash) tray

<b>Operation sheet 1</b>	<b>Collecting Stool specimen</b>
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***Procedure***

1. for ambulatory patient

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Give adequate instruction to the patient to

- Defecate in clean bedpan or commode (toilet)
- Avoid contaminating the specimen by urine, menstrual period or used tissue papers, because these may affect the laboratory analysis.
- Void before collecting the specimen
- Transfer the sample (specimen) to the container using spatula or applicator

2. for patients confined in bed

- Prepare the patient's unit
  - ✓ Provide privacy by drawing screen, closing windows and doors (To provide privacy)
- Prepare the patient
  - ✓ Put on gloves
  - ✓ Position the patient
  - ✓ Place bed protecting materials under the patient's hips
  - ✓ Assist the patient and place the bed pan under the patient's buttocks (follow the steps under "Giving and removing bedpan")
  - ✓ Give patient privacy by leaving alone, but not far
  - ✓ Instruct the patient about how to notify you when finished defecation.
  - ✓ Remove the bedpan and keep on safe place by covering it
  - ✓ Recomfort the patient

Step3. Obtain stool sample

- ✓ Take the used bedpan to utility room/toilet container using spatula or applicator without contaminating the outside of the container.
- ✓ The amount of stool specimen to be taken depends on the purpose, but usually takes.
  - ❖ 3.5 gm sample from formed stool
  - ❖ 15.30 ml sample from liquid stool
- ✓ Visible mucus, pus or blood should be included into sample stool specimen taken.

Step 4. Care of equipments and the specimen collected.

- Handle and label the specimen correctly
- Send the specimen to the laboratory immediately, unless there is an order for its handling. Because fresh specimen provides the most accurate results.
- Dispose the bedpan's content and give proper care of all equipments used.

Step 5. Documentation and report

Operation sheet 2

**Collecting urine specimen**

### ***Procedure***

i) For ambulatory patients

Give adequate instruction to the patient about

- The purpose and method of taking specimen

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- Assist the patient to move to the toilet
- ii) For patient confined in bed
1. Prepare the patient unit providing privacy
  2. Prepare the patient
    - Put on gloves
    - Place bed protecting materials under patient's hips
    - ✓ Assist the patient to position in bed and in positioning the receptacles
    - ✓ Assist the patient or clean the vulva or penis thoroughly using soap and water or antiseptic swabs (Follow the steps of giving and receiving bed pan/urinal and cleaning the genitalia)
- Obtain urine specimen
- Ask patient to void
  - Let the initial part of the voiding passed into the receptacle (bed pan or urinal) then pass the next part (the midstream) into the specimen container.
  - Hold the vulva or penis apart from the specimen container while the patient voids to decrease urine contamination.
  - Don't allow the container to touch body parts
  - Collect about 30-60 ml midstream urine
  - Handle the outside parts of the container and put on the cover tightly on specimen container
  - Clean the outside parts of the container with cotton if spillage occurs
  - Remove the glove
4. Recomfort the patient
  5. Care of the specimen and the equipment
    - Handle and label the container correctly
    - Send the urine specimen to the laboratory immediately together with the completed laboratory requested forms
    - Empty the receptacles content properly
    - Give appropriate care for the used equipments
  6. Document pertinent data and report, such as
    - ✓ Specimen collected, amount, time and date.
    - ✓ Consistency of the urine
    - ✓ Patients experience during voiding



**Procedure**

## 1. Patient preparation

- Adequate explanation to the patient about the purpose of the test, when it begins and what to do with the urine
- Place alert signs about the specimen collection at the patient's bedside or bathroom
- Label the specimen container to include date and time of each voiding as well as patient's identification data
- Containers may be numbered sequentially (e.g. 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> etc) in case of 24-hours urine collection.

## 2. Collecting the urine

- Usually it begin in the morning
- Before you begin the timing, the patient should void and do not use this urine (It is the urine that has been in the bladder some time)
- Then all urine voided during the specified time (e.g. the next 24 hours) is collected in the container
- At the end of the time (e.g. 24 hours period) the patient should void the last specimen, which is added to the rest.
- Ensure that urine is free of faces

**Procedure**

## 1. Patient preparation

Instruct the pt what to expect and for fasting (if required)

- Position the pt comfortably

## 2. Select and prepare the vein sites to be punctured

- Put on gloves
- Select the vein to be punctured. Usually the large superficial veins used such as, brachial and median cubital veins.
- Place the veins in dependent positions
- Apply tourniquet firmly 15-20 cm about the selected sites. It must be tight enough to obstruct vein blood flow, but not to occlude arterial blood flow.
- If the vein is not sufficiently to dilate massage (stroke) the vein from the distal towards the site or encourage the pt to clench and unclench repeatedly.
- Clean the punctured site using antiseptic swabs

## 3. Obtain specimen of the venous to blood

- Adjust the syringe and needles
- Clean/disinfect the area with alcohol swab, dry with sterile cotton swab
- Puncture the vein sites
- Release the tourniquet when you are sure in the vein
- Withdraw the required amount of venous blood specimen
- Withdraw the needle and hold the sites with dry cotton (to apply pressure)
- Put the blood into the specimen container
- Made sure not to contaminate outer part of the container and not to distract the blood cells while putting it into the container

## 4. Recomfort the patient

## 5. Care of the specimen and the equipment

- Label the container
- Shake gently (if indicated to mix)
- Send immediately to laboratory, accompanying the request
- Give care of used equipments

## 6. Documentation and reporting

**Procedure**

## 1. Patient preparation

- Before collecting sputum specimen, teach pt about the difference between sputum and saliva, how to cough deeply to raise sputum.
- Position the patient, usually sitting up position and splinting may help. Also postural drainage can be used.
- Give oral care, to avoid sputum contamination with microorganisms of the mouth. Avoid using tooth paste because it alters the result.

## 2. Obtain sputum specimen

Put on gloves, to avoid contact with sputum particularly if hemoptysis (blood in sputum) present.

- Ask pt to cough deeply to raise up sputum
- Take usually about 15-30 ml sputum
- Ask pt to spit out the sputum into the specimen container
- Make sure it doesn't contaminate the outer part of the container. If contaminated clean (wash) with disinfectant

Cover the cap tightly on the container

## 3. Recomfort the patient

- Give oral care following sputum collection (To remove any unpleasant taste)

## 4. Care of the specimen and the equipments used

- Label the specimen container
- Arrange or send the specimen promptly and immediately to laboratory.
- Give proper care of equipments used

5. Document the amount, color, consistency of sputum, (thick, watery, tenacious) and presence of blood in the sputum.

<b>Self-Check</b>	
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**Instructions:** Perform the following tasks. Write your answers in the answer sheet provided:

1. Explain at least three reasons for laboratory examination of urine.
2. Explain at least one reason for collecting specimens like sputum, blood or stool.
3. Mention purposes for sputum specimen collection.
4. Describe the process how to draw venous blood for laboratory investigation.
5. How can you obtain sterile urine specimen?

**Short answers**

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## List of Reference Materials

