Clinical Specimen Collection Reference Manual

GlobalONEHealth

The Ohio State University

Version Date: July, 2019

The Clinical Specimen Collection Manual provided by The Ohio State University is intended as general guidance and education to clinicians, laboratory personnel, and others involved in the collection of clinical specimens. Patient choice and clinical judgment must remain central to the selection of individual clinical specimen collection, diagnostic tests, and therapy. The clinical management and selection of culture specimens for an individual patient always rests upon the clinical decision making of their providers. This material is developed based on the context in Ethiopia. However, it contains materials that are pertinent to other countries and may be adapted to other nations and local conditions.

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This document was supported by the Cooperative Agreement Number GH001752, funded by the United States Centers for Disease Control and Prevention. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the United States Centers for Disease Control and Prevention nor the United States Department of Health and Human Services.

Clinical Specimen Collection Reference Manual

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List of Abbreviations and Acronyms

AMR	antimicrobial resistance
BSI	blood stream infections
CDC	Centers for Disease Control and Prevention
CLABSI	catheter-associated blood stream infection
CFU	colony-forming unit
CM	centimeter
CVC	central venous catheter
CVAD	central venous access device
CSF	cerebrospinal fluid
DOB	date of birth
EG	for example
EIA	enzyme immunoassay
HR	hour
ID	identification
IE	that is
MIN	minute
ML	milliliter
SOP	standard operating procedure
STAT	urgent or rush ,immediately
TB	tuberculosis

Definition of Terms

Aerobe	a micro organism that grows in the presence of air or requires oxygen for growth
Anaerobe	an organism that grows without air, or requires oxygen-free conditions to live
Antecubital	bend of the elbow
Central Venous Catheter	a tube that is passed through have into end upon the thoracic(chest)portion of the vena cava (the large vein returning blood to the heart) or in the right atrium of the heart; it may be inserted for the short term or long term (synonym: central line)
Inoculate (an infective agent) immunity	introduce (cells or organisms) into a culture medium; introduce in to an organism treat(a person or animal)with a vaccine to produce against a disease
Personal Protective Equipment	necessary items worn to minimize exposure to hazards that cause serious workplace injuries and illness; may include items such as gloves, safety glasses and shoes, earplugs or muffs, hard hats, respirators, or coveralls, vests and full body suits
Peripheral vein	a vein in the arms, hands, legs and feet that lead de oxygenated blood from the capillaries in the extremities back to the heart
Standard precautions	a set of infection control practices used to prevent transmission of diseases that can be acquired by contact with blood, body fluids, non-intact skin (including rashes), and mucous membranes
Vein puncture	the puncture of a vein as part of a medical procedure, typically to with draw a blood sample or for an intravenous injection (synonym: peripheral blood draw)

About the Clinical Specimen Collection Training Package

This Reference Manual is a component of the Clinical Specimen Collection Training Package developed by The Ohio State University.

Training Package Components

Reference Manual:
Designed for use in on-the-job training (group-based or self-study) of front-line health care workers responsible for the collection of clinical specimens. Contains all of the reference and instructional material for the Facility-level trainers and participants.

Trainers Manual:
Designed for use with the Training of Trainers course on Clinical Specimen Collection. Contains instructions, recommended course agenda, core modules, and assessment tools for both Master Trainers and participants (Facility-level trainers).The first sections of this manual will provide some guidance on the theories of adult learning and how to best teach learners at different levels. The appendices contain copies of the entire lecture slide set provided to prepare for on-the–job training.

Assessment Tools:
Assessment Tools and Competency Checklists are provided for trainers and participants to assess their understanding of the training sessions and materials. Each assessment may be administered following the completion of each module. Competency Checklists may also be administered to monitor improvement as a competency measure. Directions on how to administer the assessments are provided in each module.

Core Module PowerPoint Slides:
Presentation slides are available to be used as adjunct and supplement to the training sessions.

- Module 1: Specimen collection, transport and processing
- Module 2: Blood collection
- Module 3: Wound (skin and soft tissue)culture collection
- Module 4: Urine culture collection
- Module 5: Respiratory culture collection
- Module 6: Stool culture collection

Supplemental Module PowerPoint Slides:
Supplemental content for training Master Trainers and Facility-Level Trainers on Adult Learning Methods

- Theory of Adult Learning
- Generating an Environment for Effective Learning

Options for Implementation:
The Clinical Specimen Collection Training Package can be used in a variety of ways depending on the audience, time, and resources available for training.

Training of Trainer (Group-Based) Course:
A basic two-day course to be used in training Master Trainers and Facility-level Trainers responsible for cascading trainings on clinical specimen collection to healthcare workers at the pre-service, in-service, or national-levels. This group-based course combines lectures with demonstrations of proper methods including general instructions for specimen collection, transport, and processing, and specific instructions on blood, wound, urine, respiratory, and stool cultures. The course also provides the opportunity for group learning with role-playing and hands-on practice of the methods. Intended to use with the Trainer's Manual, Assessment Tools, Core Module PowerPoint Presentations, and Supplemental Module PowerPoint Presentations provided in Training Package. Additional information including recommended course agenda can be found in Trainer's manual, section: *Information for Master Trainers.*

On-the-Job Training Course (Group Based or Individual Review):
An in-service training for front-line health care workers responsible for the collection of clinical specimens. The course uses the Reference Manual, which contains basic instructions for specimen collection, transport, and processing and specific instructions on blood, wound, urine, respiratory, and stool cultures. May be used with Core Module PowerPoint Slides and Assessment Tools if time and resources permit. The participants can readily return to the materials for review or for use during specimen collection procedures.

This training course may be administered in a group-based setting or may be used in self-study and individual review. Using a modular approach, the course allows modules to be taught individually (stand-alone) or combined (full or partial course) based on participants' needs (type of specimen collection training needed) and time availability (e.g., 1 day, 4 hours, or 1 hour).Training sessions for healthcare workers may be as short as 50 minutes. The trainer may adapt the training schedule and outline according to the specific needs and time constraints of the audience.

Introduction

Congratulations on joining the important and fascinating world of clinical specimen collection! You are here because part of your job is to collect specimens from patients for microbiologic culture. Microbiologic culture is important because these tests can reveal what is making a patient sick and how best to make them better. We hope that this manual will serve as a guide, providing you with the information you need to collect different types of specimens, avoid common mistakes, and protect yourself and your patients. Materials are designed for healthcare staff (e.g. nurses and phlebotomists) with the responsibility for specimen collection but will be of value to anyone collecting patient specimens.

Goals of this manual are:

- To provide the reader with information on standard methods to obtain blood, wound, urine, respiratory, and stool samples for microbiologic culture
- To provide the reader with information on how to protect themselves, other healthcare workers, and patients from transmission of infectious agents

While this manual will give you a lot of information, providing patient care will sometimes lead to unexpected situations. When the unexpected happens just remember:

WHEN UNSURE

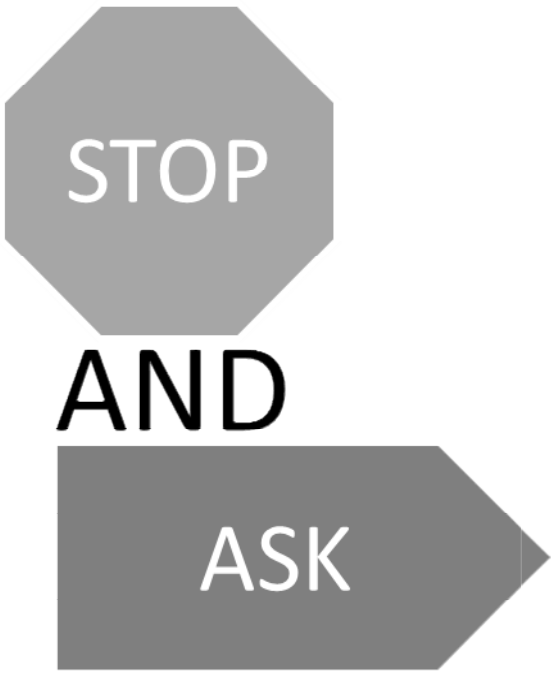


Table 1: Core Modules

Module	Description	Topics covered
1	Good Clinical Specimens	• Good Clinical Specimens • Keeping Specimens Free of Contamination • Collection Specimens at Right Time • Collecting Specimens in the Right Container • Collecting the Right Amount • Ensuring Specimens are Correctly Labeled • Transporting Specimens to the Laboratory
2	Blood Culture Collection	• Blood Cultures and Methods • Blood Culture Collection from Peripheral Vein • Blood Culture Collection from Central Venous Catheter
3	Wound (Skin and Soft Tissue) Culture Collection	• Wound Cultures • Collection Methods • Collection Procedures
4	Urine Culture Collection	• Urine Cultures • Contamination Prevention • Types of Collection ▪ Female ▪ Male ▪ Indwelling catheters ▪ Pediatric Patients
5	Respiratory Culture Collection	• Respiratory Cultures • Type of Collection ▪ Nares ▪ Nasopharyngeal ▪ Throat ▪ Lower Respiratory
6	Stool Culture Collection	• Overview of Stool and Gastrointestinal Tract Cultures • Stool Collection Kit • Stool Cultures and Collection

Module 1: Good Clinical Specimens

What you should learn:

- The importance of good specimen collection and correct transport of specimens to the lab
- Common mistakes made in specimen collection and specimen transport
- Basic principles of good specimen collection

A clinical specimen is material collected from a patient for medical testing. For microbiology, medical testing (e.g. culture) is usually trying to identify the microorganisms making the patient sick in order to inform treatment options. The quality of collected specimens is an important part of ensuring that the results from this testing are correct and that patients get the best possible treatment. Therefore, it is essential that good quality specimens are collected.

Good Clinical Specimens

Good clinical specimens are defined as being:

- Free of contamination: Micro organisms should not be accidentally introduced into a specimen during collection
- Collected at the right time
- Collected in the right container: Every specimen has a correct container and only that container should be used. If you do not know which container to use or cannot find the correct container –ASK
- The right amount
- Transported to the lab quickly: How quickly a specimen must get to the lab will depend on the type of specimen and the test ordered. In general, the faster you can get a specimen to the lab the better.
- Correctly labeled and with the right forms: While each laboratory request form is different it is important each form be completed clearly and correctly

While this manual will provide you with general guidance for good specimen collection, it is also important to follow the Standard Operating Procedures (SOPs) used where you work. When available, SOPs will provide details specific to specimen collection at your facility.

Specimen Types

This manual will discuss six (6) common specimen types:

Table 2: Specimen Types

Specimen	Description	Notes/Considerations
Blood	Considered a sterile body fluid – Should appear a consistent red color but can separate allowed to sit after collection	Usually drawn from a vein (vein puncture)
Pus / Purulent drainage	Drainage can be serous, sanguineous, and purulent. Thick consistency may appear "milky" in appearance; green, yellow, brown or white color.	Ideal specimens include actual drainage usually collected by syringe. A sterile swab can also be used.
Tissue	Necrotic, purulent, granulomas.	Must be kept moist
Urine	Color can range from pale yellow to dark brown and be clear or cloudy. Urine can appear pink/red if blood is present	Ensure clean catch specimens are free from contamination.
Stool	Stool can range from watery and loose to firm and well formed	Commonly collected after patient defecates into a clean/dry receptacle
Sputum	Sputum is generally thick, cloudy and yellow/green/white in color and is produced by the lower respiratory tract	Saliva is generally thin and clear, is produced in the mouth, and is not the same as sputum

Keeping Specimens Free of Contamination

A contaminant is a microorganism that was put in to a specimen when, or after, the specimen was collected. When contaminants are put into a specimen, that specimen has been contaminated microorganisms. Because are almost everywhere, special care must be taken to avoid contaminating the specimens you collected.

Contaminants are not what is making the patient sick and make understanding culture results difficult.

There are three main ways specimens are contaminated:

- From you, the person collecting the specimen
- From the patient, usually from the skin around where the specimen was collected
- From the collection container, usually because the container was broken or not stored properly

***Preventing contamination from you*:**

The best way to prevent microorganisms from you contaminating a specimen is to wash your hands with either soap and water (preferred) or using an alcohol-based hand rub. Gloves and other appropriate Personal Protective Equipment should be worn during specimen collection. Use of gloves does not serve as a substitute for hand washing, which should be done before and after coming in contact with the patient and patient surroundings.

Preventing contamination from the patient:

If appropriate, decontaminate the skin surface. Keep in mind that microorganisms live on the skin. If specimens are collected through the skin (e.g.blood) or may contact the skin (e.g., urine) the skin is cleaned to prevent microorganisms on the skin from contaminating a specimen. Table 3 provides agents commonly used agents used to clean and prepare skin for specimen collection.

Collect the specimen from the actual site of infection, avoiding contamination from adjacent tissues or secretions.

Table 3. Agents commonly used agents used to clean and prepare skin for specimen collection.

Agent	Contact time	Notes/Considerations
70-95% alcohol	Allow to dry. 30 sec.-2 min	The immediate antimicrobial activity of alcohol is stronger and kills more quickly than chlorhexidine gluconate or povid one iodine, but has no residual effect
2% chlorhexidine	Allow to dry. 30 sec.-2 min	Chlorhexidine binds to the top layer of the skin, which results in persistent activity and does not become inactivated in the presence of organic material
1-2% tincture of iodine	Allow to dry. 30 sec.-2 min	Iodine is inactivated by organic material so should only be applied to clean skin

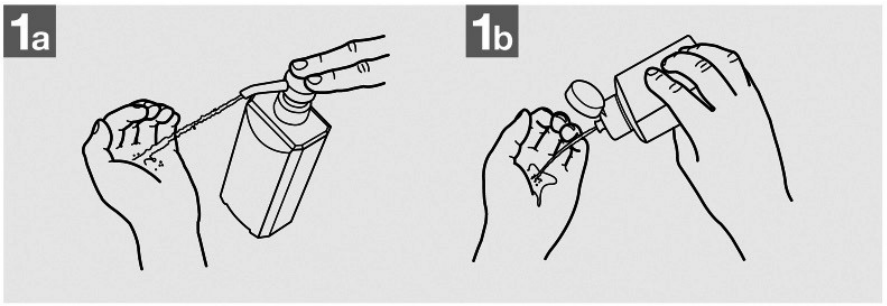
Figure 1: Hand Washing using Soap and Water

Duration of entire procedure: 40- 60 seconds

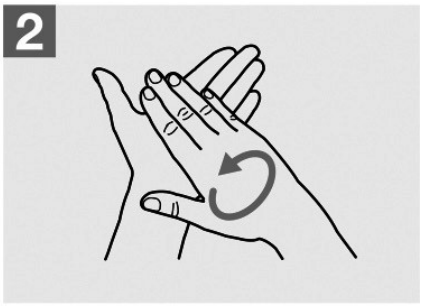
Figure 2: Hand washing using alcohol-based hand rub

Duration of entire procedure: 20 - 30 seconds

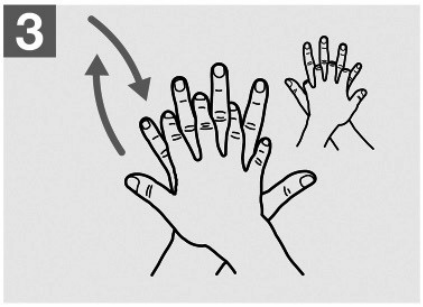
When decontaminating hands with an alcohol- based hand rub use an amount sufficient to cover all surfaces of hands. If hands are visibly soiled use soap and water to wash hands.



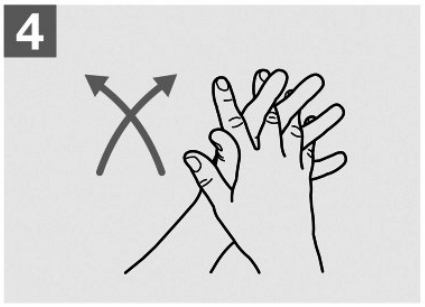
Apply a palmful of the product in a cupped hand, covering all surfaces;



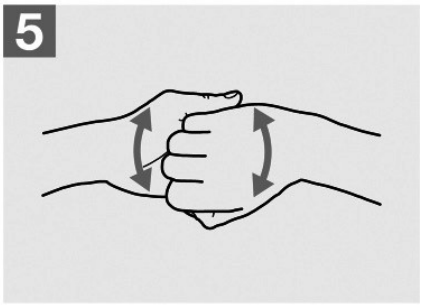
Rub hands palm to palm;



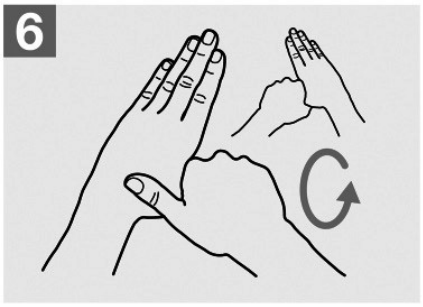
Right palm over left dorsum with interlaced fingers and vice versa;



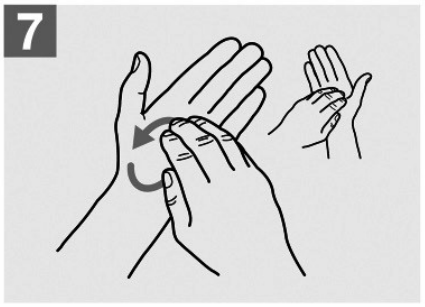
Palm to palm with fingers interlaced;



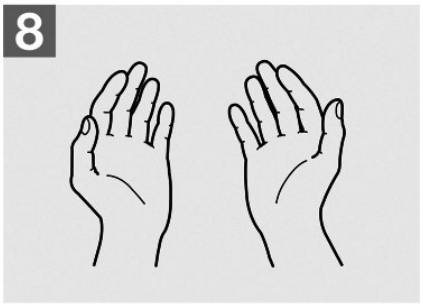
Backs of fingers to opposing palms with fingers interlocked;



Rotational rubbing of left thumb clasped in right palm and vice versa;



Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;



Once dry, your hands are safe.

Preventing contamination from the collection container:

The specimen collection container itself may become contaminated if that container has been opened before the specimen is collected or the container is broken. Do not use a specimen collection container, which:

- Has been previously opened, or was since it was last cleaned/sterilized (often a broken seal shows a container has been opened)
- Is cracked or does not close properly — Even a small crack in a container can allow contamination.
- Shows evidence of having gotten wet or other signs of poor storage.

Specimen collection containers are cheap when compared to a patient's wellbeing. Never put a patient at risk by collecting their specimen in a possibly contaminated container.

Collecting Specimens in the Right Container

The container used for specimen collection is often important. The shape of a specimen container can help prevent contamination and may limit specimen volume (amount). Certain specimen containers include chemicals that while needed for certain tests but will ruin the specimen for others. Additionally, certain microbiology specimens will require specific transport media to help protect microorganisms so they can be successfully cultured (grown) in the lab.

Every specimen must be collected in the appropriate, clean, leak proof-sterile containers. If a delay in processing is expected, contact the laboratory and receive instructions on what to do with the specimen. In these cases, a transport medium must be used that contain buffers to maintain constant pH, semisolid to minimize spills &oxidation, non-nutritive to prevent overgrowth of rapid growers, charcoal to neutralize toxic substances in the specimen, ex. Stuart's, Cary- Blair, Amie

Collecting the Right Amount

A sufficient quantity of the specimen must be collected to perform all the requested tests. The amount to collect will depend on the laboratory requirements. For some specimens (e.g., urine and purulent drainage) lack of specimen is generally not a problem. For specimens that are more difficult (e.g., sputum) and/or painful to collect (e.g., blood and cerebral spinal fluid), specimens that are too small are often an issue.

Small specimens are especially problematic. For blood where the sensitivity of culture (ability to find the organism) is directly related to the amount (volume) of blood submitted. For adults, the ideal volume of blood specimen for culture is usually 10 mL per bottle. If swabs are used to collect the specimen, a separate swab needs to be used for each body site or wound to be cultured and enough material must be submitted for Gram stain if required.

Always follow SOPs and when in doubt contact the laboratory to determine the amount of specimen that should be collected.

Collecting Specimens at the Right (Optimal) Time

The time at which a specimen is collected can affect how well the laboratory is able to detect an organism in a specimen. A few general rules:

- Collect specimens before antibiotics are given.
- Collect specimens during acute phases of illness (e.g., when a patient is febrile) as etiologic agents are more likely to be detected.
- Collect urine and sputum specimens early in the morning (right after waking) ideally as the first urination or productive cough of the day

While good to follow these general rules when possible, facility guidelines as well as physician orders should be followed. In some instances, it may not be ideal to wait for the next day since it may delay diagnosis and treatment.

Table 4. Optional collection times for commonly collected specimens.

Specimens for Culture	Optimal Time of Collection	Notes/Considerations
Urine	First morning specimen	Collect from start of urination and patient should not have urinated in at least the last hour
Blood	Prior to taking antibiotics	
Sputum	Early morning specimen preferred.	
Purulent drainage or aspirate	None	

Ensuring Specimens are Correctly Labeled and with the Right Forms

Labeling of the sample should occur at the time of collection. Before sending any specimen to the lab make certain that EVERY individual container has a label and that all request forms and paperwork are completed. Specimens received in the lab without labels or with missing/incomplete SHOULD be rejected.

As the person collecting a specimen it is your responsibility to apply specimen labels and complete all request forms correctly per your facility SOPs.

Properly label the specimen and complete the test request form. If the specimen requisition form is initiated by the ordering physician, it is then that the patient is identified and collection is done per clinician's order.

Identifying and Preparing the Patient

Prior to specimen collection, each patient needs to be properly identified to ensure the specimen is being collected from the correct patient.

Verify the patient's identity by ask the patient to state at least two (2) of the following patient identifiers which you will compare to the medical file or specimen request form:

- Patient name
- medical record number
- date of birth
- government-issued photograph identification (usually used in out patients)

If the patient is expected to collect the sample themselves (e.g. urine self-collection, the clinician should provide clear instructions on the procedures for collection with emphasis on steps to minimize contamination.

Transporting Specimens to the Laboratory

Frequently, specimens are collected outside the laboratory, and must be transported for testing. Generally, specimen transport involves only the short distance from the patient care area (unit) to the facility laboratory with transport done immediately after specimen collection. If a specimen cannot be taken to the laboratory immediately, the specimen must be stored correctly to protect the organisms that lab will later try to identify.

There are several common methods used to protect specimens that are not taken immediately to a laboratory for testing:

- **Refrigerated**: Specimen in placed in a refrigerator (about +4°C). No food should be stored in a refrigerator used to store specimens.
- **Frozen**: Specimen is kept frozen (below-20°C)
- **Placed in transport media**: Use appropriate transport media (anaerobe transport vials, universal transport media). Different transport media will be used depending on the specimen and organisms that will be tested for. The lab should provide you with the correct transport media if it should be used. Be aware that some specimen collection containers have transport media included.

Ideally, all specimens should be promptly transported to the lab within 2 to 24 hrs. However, certain specimens should be transported immediately (sterile body fluids- CSF).

Minimize transport time. If transport time increases, microorganisms can die and others can overgrow

Summary

The role of the health worker in collecting, labeling, and ensuring the timely and proper delivery of specimens to the laboratory is very important in the hospital setting. With this, the health worker should be knowledgeable enough about the hospital's policy and procedures for specimen collection. However, they should not only possess the right knowledge, but as well as the skill and understanding in performing necessary procedures in accordance with the organization's protocols, policies, and guidelines

Module 2: Blood Specimens forCulture

What you should learn:

- Best practices for the collection of specimens for blood culture
- Steps to avoid contamination

Introduction

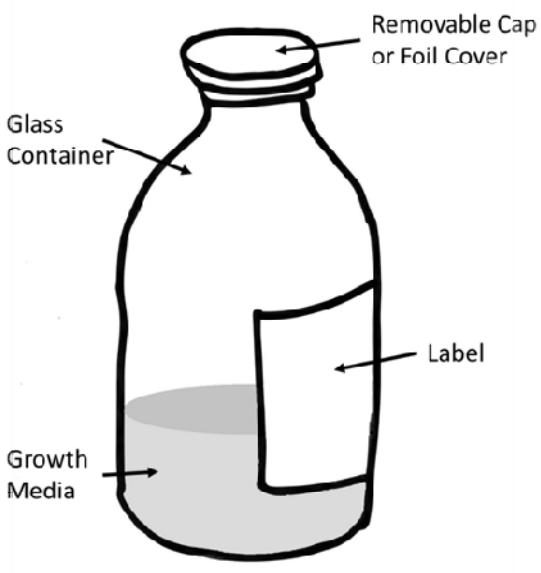
Bloodstream infections (BSI) are serious medical conditions that, if untreated, often result in death. Bloodstream infections are most commonly caused by bacteria (bacteremia), but can also be caused by yeasts/fungi (fungaemia). Blood culture is the laboratory tool used to identify the cause of a patient's blood infection and helps guide treatment.

Depending on the patient's condition, a physician may ask for a specific number of specimens (e.g., two (2) specimen bottles), collected at specific times (e.g., when the patient has a fever), and from specific places (e.g., different arms). It is important to follow these instructions carefully to help make sure that the laboratory team can find any microorganisms that may be in the blood.

The Blood Culture Bottle

Bottles may be made in-house or pre-manufactured (commercial).If manual bottles are used, ensure that the stopper is not loose, if it is, do not use the bottle. Use a different one that the sterility is not compromised.

Figure 3. Example of manual "in house" bottle



Number of Samples to Collect

Samples are usually collected in sets– except for some pediatric patients. A set is defined as:

- One(1)anaerobic and one(1)aerobic bottle(2 bottles total)
- OR two (2) aerobic bottles

Depending on the patient weight, the minimum number of blood culture sets that should be drawn per patient are two (2).

Volume to Collect

Volume to collect using blood bottles differs for pediatric patients from adult patients.

- For adults:8-10 ml per bottle (20–30 mL of blood per set)
- For children: an age- and weight-appropriate volume of blood should be cultured (see Table 5).

Table 5. Weight-appropriate volume of blood that should be collected for blood culture in pediatric patients.

Weight of Patient (kg)	Recommended Volume of Blood for Culture (mL)		Total Volume for Culture (mL)
	Culture set - Bottle #1	Culture set - Bottle #2	
≤1	2*	-	2
1.1–2	2*	2*	4
2.1–12.7	4*	2*	6
12.8–36.3	10	10	20
>36.3	20–30	20–30	40–60
* Because the low volume inoculates into a single a aerobic blood culture bottle.			

Avoiding Contamination

- If patient has a catheter, one collection should be via vein and the other via catheter.
- Peripheral vein samples should be collected first
- Disinfect the vein puncture site with 70% alcohol, allow alcohol to dry, and follow by applying povidone iodine or chlorhexidine.
- Do not palpate the vein after disinfecting the site to avoid contamination. If the site is touched, repeat the disinfection.
- Inoculate the blood into the blood culture bottle immediately and transport to the lab without refrigeration.

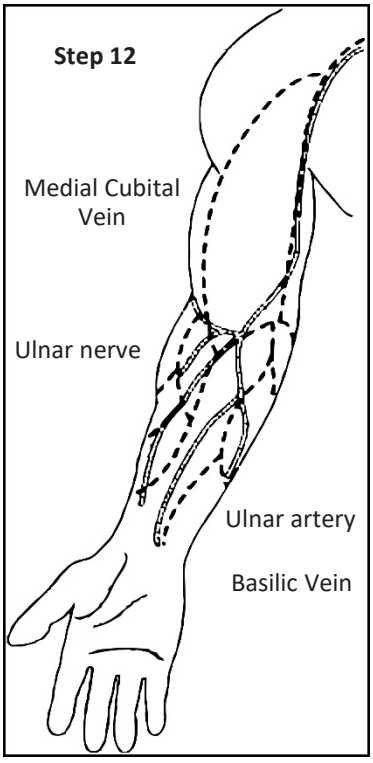
Equipment and Supplies

- Blood culture bottles (with labels)
- Gauze and adhesive bandages (e.g. BAND-AIDS)
- Material for skin disinfection: Iodine and70% alcohol, or Chlorhexidine
- 20 mL syringes (1 syringe for each set of blood cultures; lower volume for pediatric patient may be used)
- Sterile needles(gauge size depends on infants vs. adult patient)
- Gloves
- Tourniquet

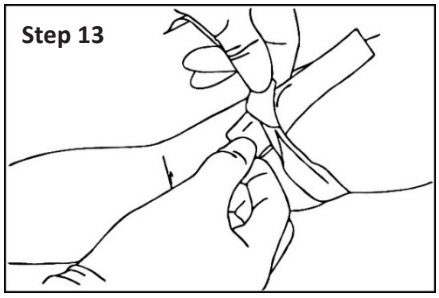
Blood Draw from Peripheral Vein

From Adult Patients

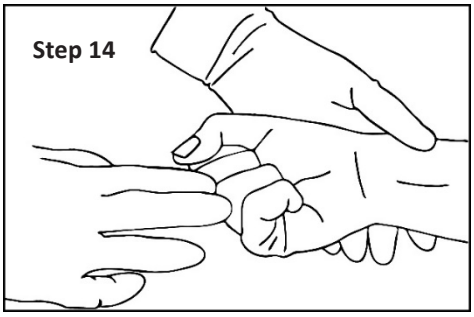
1. Fill the requisition by ordering physician prior to obtaining blood for culturing (physician orders, patient identified, sample collected and requisition form filled out indicating time of collection, site of collection, type of blood culture bottle filled (aerobic or anaerobic)
2. Prepare equipment and supplies.
3. A set of blood cultures comprise of one aerobic and one anaerobic bottle. Determine the type of culture bottles to utilize (aerobic and anaerobic). If necessary, discuss timing of cultures, sites, need for any special instructions etc., with the physician if blood collected by other health professional.
4. Explain the procedure to the patient and/or their significant other if present.
5. Verify the patient's identification by using two patient identifiers per policy.
6. Follow Standard Precautions for all patients. Use appropriate personal protective equipment (PPE) such as gloves, masks, and/or face shields.
7. Label all bottles with patient information date/time of blood collection
8. Wash hands thoroughly with soap and water, and dry hands with a clean towel.
9. Put on gloves.
10. Use alcohol to disinfect tops of blood culture bottles. Do not apply iodine to bottle tops. Allow to dry completely.
11. For ambulatory patients, position patient in a chair with a back
12. Select the site, preferably at the ante cubital area (i.e. the bend of the elbow). Warming the arm with a hot pack, or hanging the hand down may make it easier to see the veins. Palpate the area to locate the anatomic landmarks. DO NOT touch the site once alcohol or another antiseptic has been applied.



13. For vein puncture, identify the vein puncture site by tying a tourniquet around patient's arm to locate a vein. About 4–5 finger widths above the selected vein puncture site. Then untie the tourniquet.



14. Ask the patient to form a fist so that the veins are more prominent.



15. The vein puncture site must be properly disinfected to avoid contamination of the blood culture with skin flora.

16. Prepare the site by using either:

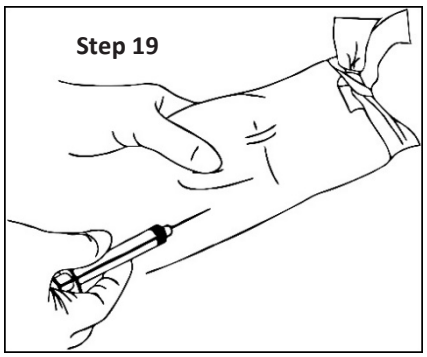
    - 70-95%alcohol
    - Chlorhexidine
    - 70% alcohol followed by 2% tincture of Iodine

17. Rub the site vigorously in a concentric manner, start at the center of the site and move outward. If using chlorhexidine perform back and forth motion.

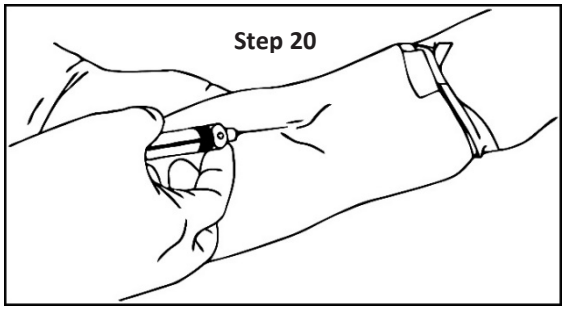
18. Wait at least 30 seconds for the area to dry.

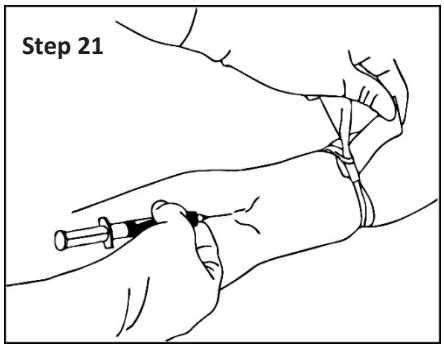
    - NOTE: Do not palpate the vein after disinfecting the site to avoid contamination. If the site is touched, repeat the disinfection.

19. Anchor the vein by holding the patient's arm and placing a thumb BELOW the vein puncture site

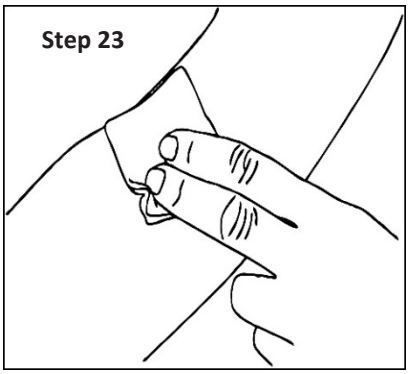


20. Enter the vein swiftly at a 30-degree angle.
21. Draw the required amount of blood using needle and syringe.





22. Once sufficient blood has been collected, release the tourniquet BEFORE withdrawing the needle.
23. Withdraw the needle gently and apply gentle pressure to the site with clean gauze. Cover gauze with clean bandage.

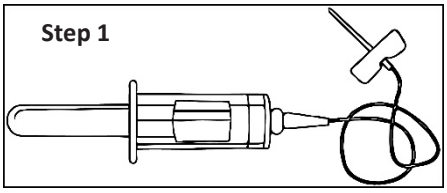


24. Inoculate the culture bottles by piercing the stopper on the culture bottle with the needle directly above the tube using slow, steady pressure. **Anaerobic always first.**Roll/shake bottles afterwards. Rubber stoppers need to be cleaned with alcohol wipe prior to inserting needle.
    - NOTE: If manual bottles are used, ensure that the stopper is not loose, if it is, do not use the bottle. Use a different one that the sterility is not compromised.
25. Discard the used needle and syringe into a puncture-resistant sharps container.
26. Discard the supplies used into the right disposal bin.
27. Remove gloves, wash hands thoroughly with soap and water. Dry hands with a clean towel as needed.
28. Fill out the requisition forms, check for accuracy.
29. Transport the blood cultures to the Laboratory promptly, if delayed; they can be at room temperature for not more than 12 hours.
30. Do not refrigerate.

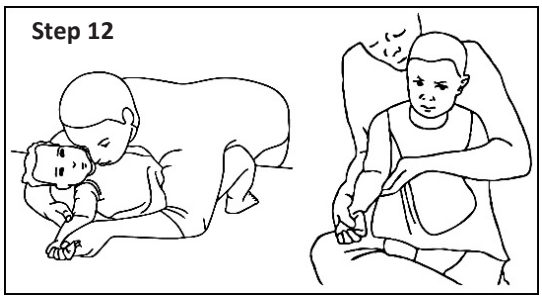
Blood Draw from Peripheral Vein

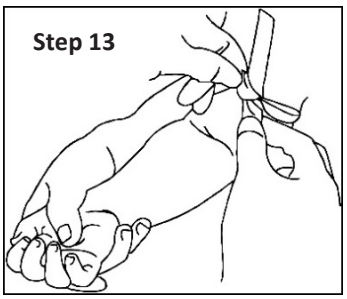
From Pediatric Patients

1. Fill the requisition by ordering physician prior to obtaining blood for culturing (physician orders, patient identified, sample collected and requisition form filled out indicating time of collection, site of collection, type of blood culture bottle filled (aerobic or anaerobic)

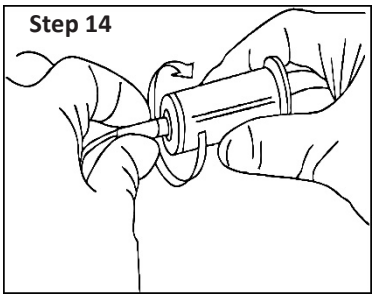


2. Prepare equipment and supplies.
3. Use a winged steel needle, usually 23 or 25 gauge, with an extension tube (butterfly). Keep the tube and needle separate until the needle is in the vein
4. Explain the procedure to the patient and/or parents.
5. Verify the patient's identification by using two patient identifiers per policy.
6. Follow Standard Precautions for all patients. Use appropriate protective equipment such as gloves, masks, and/or face shields.
7. A set of blood cultures comprise of one aerobic and one anaerobic bottle. Determine the type of culture bottles to utilize (aerobic and anaerobic). If necessary, discuss timing of cultures, sites, need for any special instructions etc., with the physician if blood collected by other health professional.
8. Label all bottles with patient information and date/time of blood collection.
9. Wash hands thoroughly with soap and water, and dry hands with a clean towel.
10. Put on gloves.
11. Use alcohol to disinfect tops of blood culture bottles. Do not apply iodine to bottle tops. Allow to dry completely.
12. Immobilize the baby or child
13. Put tourniquet on the patient about two finger widths above the vein puncture site

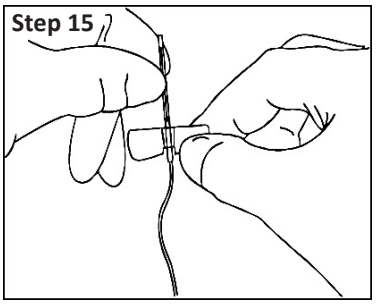




14. Attach the end of the winged infusion set to the end of the vacuum tube and insert the collection tube into the holder until the tube reaches the needle.

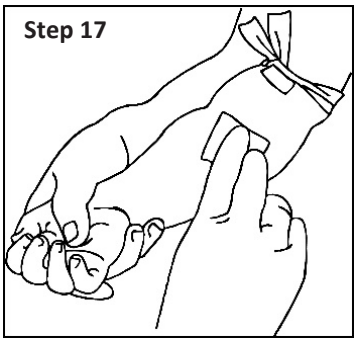


15. Remove the plastic sleeve from the end ofthe butterfly



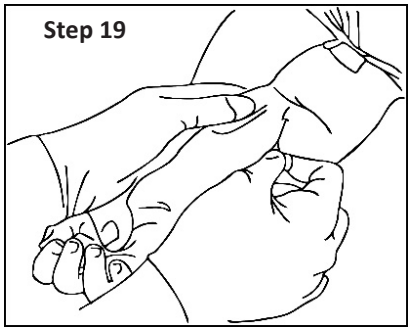
16. The vein puncture site must be properly disinfected to avoid contamination of the blood culture with skin flora. Prepare the site by using either: Chlorhexidine or 70% alcohol followed by 2% tincture of Iodine

17. Rub the site vigorously in a concentric manner, start at the center of the site and move outward. If using chlorhexidine perform back and forth motion.

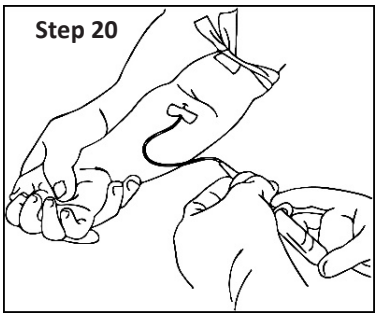


18. Wait at least 30 seconds for the area to dry.
    - NOTE: Do not palpate the vein after disinfecting the site to avoid contamination. If the site is touched, repeat the disinfection.

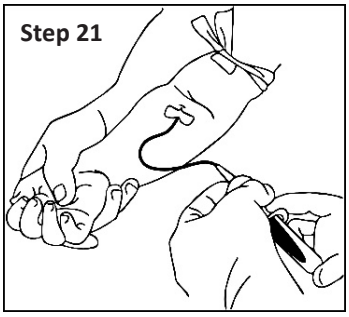
19. Use a thumb to draw the skin tight, about two finger widths below the vein puncture site.



20. Push the vacuum tube completely ontothe needle.



21. Blood should begin to flow into the tube. Fill the tube until it is full or until the vacuum is exhausted; if filling multiple tubes, carefully remove the full tube and replace with another tube, taking care not to move the needle in the vein.



22. After the required amount of blood has been collected, release the tourniquet.
23. Place gauze over the vein puncture site and slowly withdraw the needle. Ask parent to continue applying mild pressure
24. Remove butterfly from vacuum holder
25. Inoculate the culture bottles. Anaerobic always first. Rubber stoppers need to be cleaned with alcohol wipe prior to inserting needle. Pierce the stopper on the culture bottle with the needle directly above the tube using slow, steady pressure.
    - NOTE: If manual bottles are used, ensure that the stopper is not loose, if it is, do not use the bottle. Use a different one that the sterility is not compromised.
26. Discard the used needle and syringe in to a puncture-resistant sharps container.
27. Discard the supplies used into the right disposal bin.
28. Remove gloves, wash hands thoroughly with soap and water, and dry with a clean towel
29. Fill out the requisition forms, check for accuracy
30. Transport the blood cultures to the Laboratory promptly, if delayed; they can be at room temperature for not more than 12hours.
31. Do not refrigerate

Blood Draw from Central Venous Catheter

1. Fill the requisition by ordering physician prior to obtaining blood for culturing (physician orders, patient identified, sample collected and requisition form filled out indicating time of collection, site of collection, type of blood culture bottle filled (aerobic or anaerobic)
2. Prepare equipment and supplies.
3. Explain the procedure to the patient and/or their significant other if present.
4. Verify the patient's identification by using two patient identifiers per policy.
5. Follow Standard Precautions for all patients. Use appropriate protective equipment such as gloves, masks, and/or face shields.
6. A set of blood cultures comprise of one aerobic and one anaerobic bottle. Determine the type of culture bottles to utilize (aerobic and anaerobic). If necessary, discuss timing of cultures, sites, need for any special instructions etc., with the physician if blood collected by other health professional.
7. Catheter site must be properly disinfected to avoid contamination of the blood culture with skin flora.
8. Label all bottles with patient information and date/time of blood collection,
9. Wash hands thoroughly with soap and water, and dry hands with a clean towel.
10. Put on gloves.
11. Use alcohol to disinfect tops of blood culture bottles. Do not apply iodine to bottle tops. Allow to dry completely.
12. From central venous catheters (CVC)always clean the cap with alcohol for 15-30 seconds and allow cap to dry completely before accessing it.
13. Inoculate the culture bottles. **Anaerobic always first.** Roll/shake bottles afterwards. Rubber stoppers need to be cleaned with alcohol wipe prior to inserting needle. Pierce the stopper on the culture bottle with the needle directly above the tube using slow, steady pressure.
    - NOTE: If manual bottles are used, ensure that the stopper is not loose, if it is, do not use the bottle. Use a different one that the sterility is not compromised.
14. Discard the used needle and syringe in to a puncture-resistant sharps container.
15. Discard the supplies used into the right disposal bin.
16. Remove gloves, wash hands thoroughly with soap and water, and dry with a clean towel
17. Fill out the requisition forms, check for accuracy
18. Transport the blood cultures to the Laboratory promptly, if delayed; they can be at room temperature for not more than 12hours.
19. Do notrefrigerate

Four different methods can be used to draw blood from Central Venous Catheter (CVC) (see Table 6)

Table 6: Different methods of blood collection from CVC (procedure if prone to contamination)

Discard	Remove a specified amount of blood from CVC via a syringe. 10mL is ideal volume to be flashed. Use a new syringe for the sample. Flush the CVAD with sodium chloride 0.9%	Removes potential contaminants. No blood is returned that might introduce pathogens	Potential blood loss with frequent blood samples
Push - Pull	Flush the CVC with sodium chloride 0.9%. Without removing the syringe, aspirate 6ml of blood, then push it back into the CVC. Repeat this process x 3. Remove the empty syringe and attach a new syringe to obtain blood sample. Flush CVC with sodium chloride0.9%	Requires mixing the blood back and forth in asyringe several times to eliminate contaminants. Limits blood loss	May be difficult to obtain enough blood for three to four push-pull sequences particularly with malfunctioning catheters. Risk of hemolysis with the agitation of blood
Re-infusion	Aspirate 6mls of blood into a syringe and attach a sterile cap. Obtain blood sample via a syringe. Re-infuse the discard from the first syringe	Involves returning the discard specimen after obtaining the samples. Minimizes blood loss	Potential to re-infuse clots. Potential for contamination of the blood being reinfused. Potential for error including the possibility of confusing the discard syringe with the blood sample
Dead space	Withdraw until blood enters the syringe. Discard. Repeat and take appropriate sample amount	Reduces nosocomial blood loss. Reduction in the potential for infection	Potential for contamination of the blood; as no discard blood taken. Higher risk of erroneous samples

Module 3: Wound (Skin and Soft Tissue) Specimens for Culture

What you should learn:

- Various wound types (tissue, abscess, bullae, vesicles, closed wounds, open wounds) for specimen collection
- Best practices for the collection of wound swabs for culture

Introduction microorganism causing the infection and susceptibility to guide treatment. A wound can be open or closed and may contain pus or purulent material.

Wound specimens may involve the following:

- Abscess: pus under pressure

Bullae: a bubble-like cavity filled with

Cultures of wounds provide information on the type of

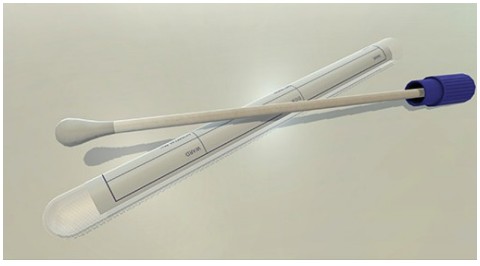
- air or fluid
- Tissue
- Vesicles: a fluid-filled or air-filled cavity or sac

Specimens can be collected using the following methods:

- Swab – rayon/ Dacron swabs are preferred over cotton ;swabs should be kept moist
- Aspiration (using a needle)
- Biopsy to collect portion of tissue.

The ordering physician will decide upon the type of specimen needed for culture. Needle aspiration and tissue biopsy are invasive procedures and may require skilled personnel. These procedures may need to be conducted by a trained professional.

Figure 4: Types of specimen containers used for collection and transporting wound sample



Wound swabs are acceptable as they are practical, non–invasive and cost effective, but must not be allowed to dry out. Gram stains cannot be provided from a single swab. If a Gram stain is needed, collect two swabs.

Only swab viable wound tissue. Do not swab necrotic tissue or pus as this may produce false results which can lead to inappropriate antibiotic treatment. The area must be cleansed with sterile normal saline or sterile water prior to collection to avoid contamination with skin micro biota. Swabs are not accepted for mycobacterial cultures, perirectal abscesses, and oral abscesses.

Labeling wound specimens is very important. Do not use the label “wound” alone. Be specific about body site and type of wound (for example “human bite wound, knuckle”). Do not ask the laboratory to report everything that grows.

Equipment and Supplies

- 2 sets of clean gloves for cleansing the wound and taking the swab
- 1 set of clean or sterile gloves to use when applying the new dressing.
- Sterile normal saline or sterile water (60-120ml), and supplies needed to cleanse the wound.
- Sterile swab with transport media for collection of the specimen
- Label
- Supplies required redressing the wound

Before Collecting the Specimen

1. Prepare equipment and supplies. Ensure labels available.
2. Explain the procedure to the patient and/or their significant other if present
3. Complete requisition form with type of specimen, time of collection, site of collection, you name (name of person collecting specimen), patient’s location, etc.

   NOTE: When filling “type of specimen”, do not use the label “wound” alone. Be specific about body site and type of wound (for example “human bite wound, knuckle”).
4. Verify the patient’s identification by using two patient identifiers per policy
5. Remember to always label the specimen with the required information:

- Collection Date and Time
- Patient Identification (Name, DOB, etc.)

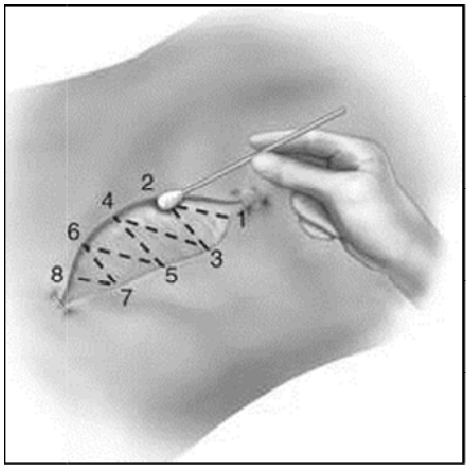
6. Wash hands thoroughly with soap and water, dry hands on a paper towel.
7. Follow Standard Precautions for all patients. Use appropriate protective equipment such as gloves, masks, and/or face shields.

Procedure Using Wound Swab

The following procedure should be used when collecting a wound swab. If a Gram stain is needed, collect two (2) swabs. If there are two (2) or more wounds in the same location, use a separate swab for each wound.

1. Label tubes with patient information and date/time of collection.
2. Wash hands thoroughly with soap and water, dry hands on a paper towel.
3. Put on (sterile) gloves.
4. Remove the cover dressing of the wound using forceps or sterile gauze.
5. Remove the gloves and perform hand hygiene then put on another pair of (clean) gloves.
6. Cleanse the wound with at least 60-120mL sterile normal saline or sterile water.

7. Rotate the tip of the swab over 1 - 2 cm area ofviabletissuefor5secondsusingsufficient pressure to extract fluid from the wound tissue.
    - NOTE: Do not swab necrotic tissue or pus. Avoid touching the wound edge or peri-wound skin with the swab. If the wound surface is dry, the swab can be pre- moistened in the transport media before swabbing the wound.



8. Place the swab into the tube with transport medium and rotate to close. Ensure the swab tip is in contact with the liquid transport medium at the base of the tube.
9. Remove gloves. Wash hands.

Collection of Tissue

Collection of tissue is an invasive procedure and requires surgery. This may require skilled personnel, or the procedure may need to be conducted by a trained professional.

Collection of Abscess Material (Aspirate)

Needle aspiration is an invasive procedure and may require skilled personnel. The procedure may need to be conducted by a trained professional.

Module 4: Urine Specimen for Culture

What you should learn:

- Best practices for the collection of urine specimens for culture depending on the type of patient

Introduction

A urine culture is a test that detects and identifies bacteria and yeast in the urine, which may be causing a urinary tract infection. Urine can be easily contaminated and thus must be collected with minimum contamination. Urine should be collected in a wide-mouth sterile container in order to avoid contamination.

Urine can be collected from:

- Mid-stream, “clean catch”
- Catheter

Healthcare workers should ensure that there is a sufficient volume of urine to perform the tests prior to submission of the urine specimen to the laboratory for testing. If in sufficient volume, instruct the patient to collect a new sample. Continuous collection of urines over 24-hours (i.e. “24 hour urines”)and those collected from catheter bags are not acceptable for culture.

The following specimens are unacceptable and they will be rejected by the laboratory:

- 24-hour urine (continuous)collection
- Collections from urinary catheter bags
- Foley catheter tips
- Collections from bedpan or urinal

Cleansing and Preventing Contamination

Patients must be instructed to properly cleanse the peri-urethral genital skin area prior to collection of the mid-stream portion of the urine stream in order to get a “clean catch” and obtain accurate urine culture result. Illustrations or steps should be provided to the patient as a guide for collection.

When collecting urine always instruct for proper cleansing and collection of “clean catch” urine samples and transport or refrigerate as soon as possible or place in preservative container. If transport to the lab is going to be delayed more than two hours it needs to be refrigerated. Do not freeze the specimen.

Equipment and Supplies

	Mid-Stream Collection	Catheter Collection
Sterile urine collection containers, 50mL (cups for collection and transport).	✓	✓
Label for specimen container	✓	✓
Sterile wipe/cleansing towelette	✓	
Visual aid/instructions for patient self-collection	✓	
Sterile syringe 30 mL		✓
Sterile needle 23- or 25-gauge		✓
Alcohol swabs		✓
Gloves		✓

Before Collecting the Specimen

1. Prepare equipment and supplies. Ensure labels available.
2. Explain the procedure to the patient and/or their significant other if present
3. Complete requisition form with type of specimen, time of collection, site of collection, you name (name of person collecting specimen), patient's location, etc.
4. Verify the patient's identification by using two patient identifiers per policy.
5. Remember to always label the specimen with the required information:
    - Collection Date and Time
    - Patient Identification (Name, DOB, etc.)
    - Collection Method. The requisition must be filled out and the exact source of the specimen indicated e.g. "midstream urine".
    - Test required.
6. Wash hands thoroughly with soap and water and dry the hands with a paper towel.
7. Follow Standard Precautions for all patients. Use appropriate protective equipment such as gloves, masks, and/or face shields.

Midstream Urine Collection

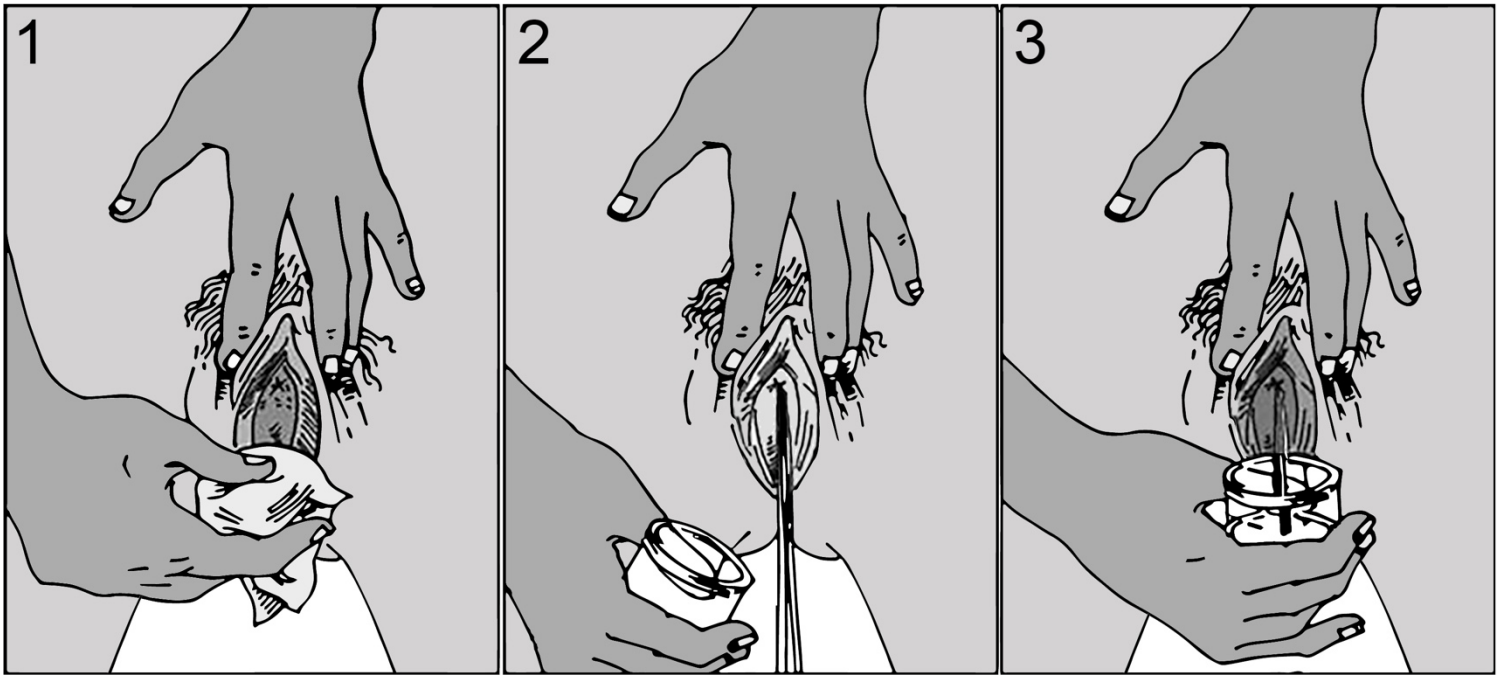
From Females

The healthcare provider should instruct the patient on proper collection and how to minimize contamination to the specimen and the collection container.

The following protocol should be followed:

1. Wash hands thoroughly with soap and water and dry the hands with a paper towel.
2. With one hand spread the labia and hold them apart (1) and use sterile wipe/cleansing towelette to clean the meatus from front to back.
3. Start voiding urine, after the first portion of the urine is passed(2);collect apportion of the urine by voiding into the sterile container(3).
4. Avoid contact between the container and the legs, vulva, or clothing. Do not touch the inside of the container or lid.
5. Stop collection when container is about half-full.
6. Screw cap on container.
7. Wash hands thoroughly with soap and water, and dry with a clean towel.
8. Give specimen to personnel.

Figure 5. Midstream urine collection from females



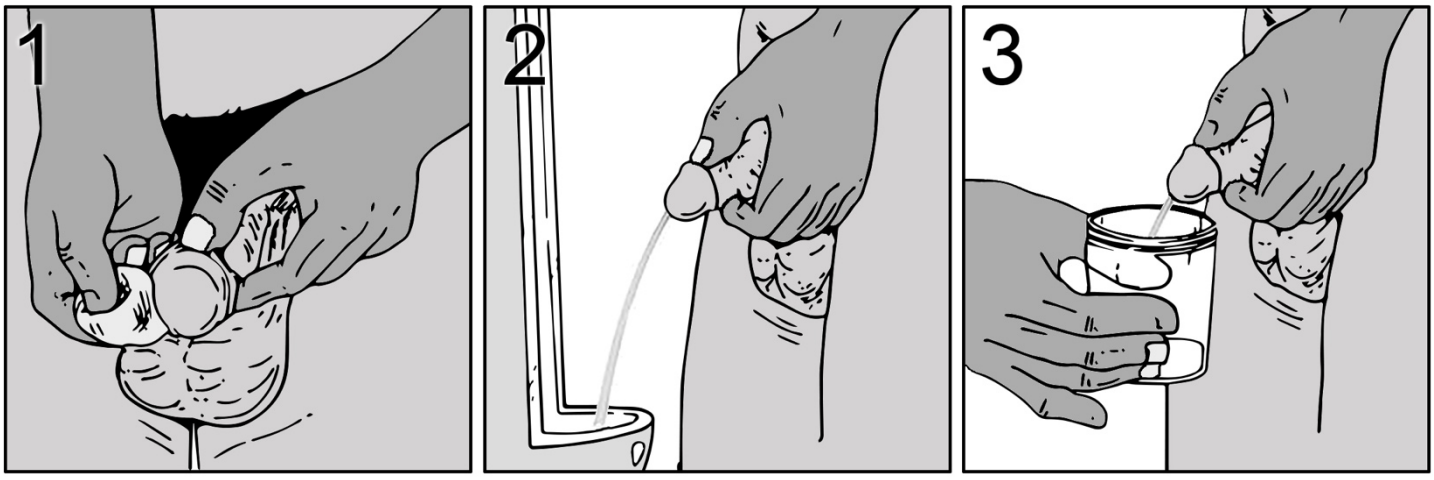
From Males

The healthcare provider should instruct the patient on proper collection and how to minimize contamination to the specimen and the collection container.

The following protocol should be followed:

1. Wash hands thoroughly with soap and water and then dry hands with a clean towel.
2. If the patient is uncircumcised, instruct him to retract the fore skin, holding it back during the entire procedure.
3. If possible, instruct the patient to clean the area around the penis opening (glans penis) by starting at the tip of the penis and cleaning downward (using a towelette) and also cleaning directly across the meatus with a different towelette (1).
4. Pass the initial portion of urine into the toilet bowl(2).
5. Pass some of the remaining urine into the sterile, screw-cap plastic cup provided. Do not touch the inside of the container or lid(3).
6. Stop collection when container is about half-full.
7. Carefully screw cap on container.
8. Wash hands thoroughly with soap and water, and dry with a clean towel.
9. Give sample to personnel.

Figure 6. Midstream urine collection from males

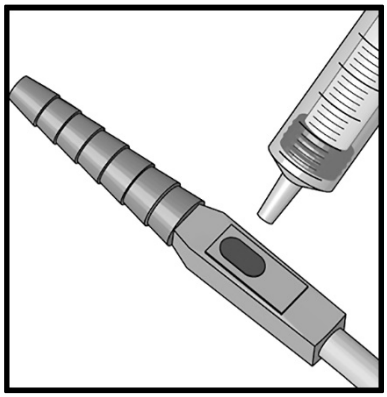


Collection of Urine from Indwelling Catheter

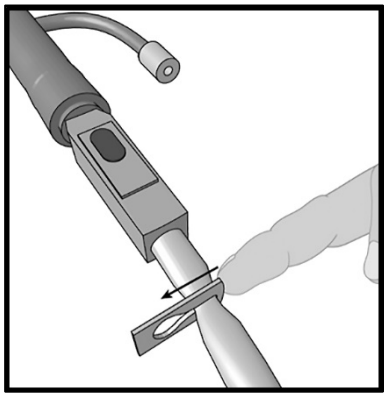
Urine collection from an indwelling catheter should only be collected by trained personnel. If you have any questions – STOP and ASK

The following steps should be followed:

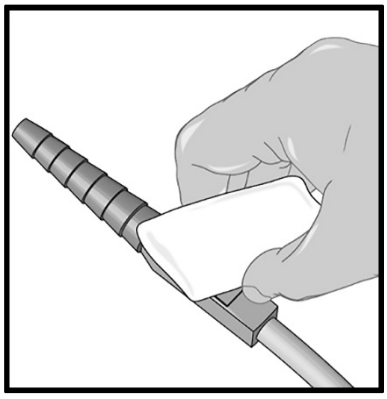
1. Wash hands thoroughly with soap and water and dry the hands with a paper towel.
2. Identify the collection port on the catheter. This can be found on the tubing of the catheter drainage bag. Urine should only be collected from here.



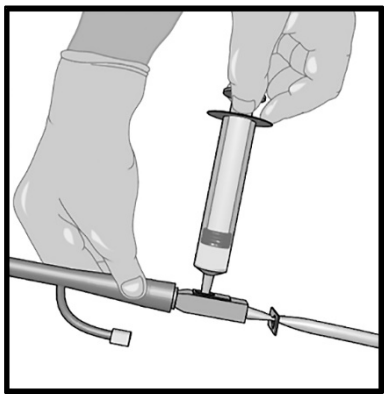
3. Put on a pair of clean gloves.
4. Clamp the catheter below the port so that the urine can collect above it. Wait for 15 minutes-to allow urine to collect in the catheter tube.



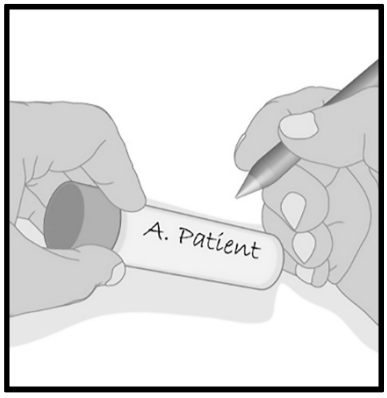
5. Disinfect the port using 70% alcohol. Allow alcohol to dry before obtaining the specimen.



6. Depending on the model of the catheter insert either a needle or syringe tip into the collection port and withdraw approximately 10ml. of urine using aseptic technique.



7. Transfer the specimen into the sterile container and seal tightly.
8. Dispose of any needles into a sharps box.
9. Disinfect needle entrance site with alcohol swab.
10. Unclasp catheter.
11. Label the specimen with the required information.



12. Remove gloves and wash hands thoroughly with soap and water

NOTE: If the catheter has a special catheter valve, this must be disinfected with 70% alcohol prior to specimen collection

Pediatric Patients

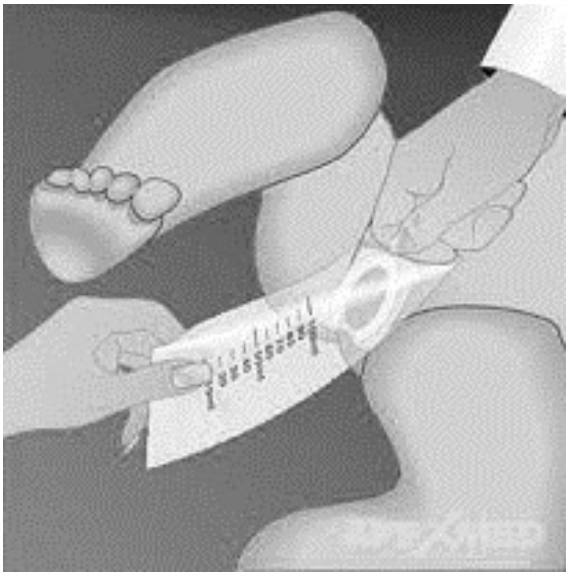
When a clean catch cannot be collected from a pediatric patient:

1. Clean the perineum.
2. Tape a small sterile plastic bag to the perineum, so that the specimen can be collected at the next urination.
3. Transfer the specimen to a sterile container.
4. Label the specimen with the required information.

Straight urethral catheterization for pediatric patients:

1. Catheterize the bladder using aseptic technique when the patient's bladder is full.
2. Discard the initial 15-30 mL of urine.
3. Collect a sample from the mid- or later flow of urine into a sterile container.
4. Label the specimen with the required information.

Figure 7: Pediatric Urine Collection



NOTE: Straight urethral catheterization of pediatric patients is associated with a small risk of introducing bacteria from the perineal area to the bladder.

Module 5: Respiratory Specimen for Culture

What you should learn:

- Different types of respiratory specimens
- Best practices for the collection of respiratory specimens for culture

Introduction

Collection of respiratory specimens for culture is done to determine respiratory infections. Respiratory specimens may come from the upper or lower respiratory tracts.

Upper respiratory tract specimens can be collected from:

- Nose hairs (Nares)
- Nasopharyngeal swabs and washings
- Throat swabs

Lower respiratory tract specimens include:

- Sputum
- Bronchial brush or wash
- Bronchial-alveolar savage

Key points for the collection of respiratory specimens for culture:

- Patients must rinse mouth with water, and cough deep for collection of lower respiratory specimens.
- When collecting sputum – it is best to collect first thing in the morning
- Depending on hospital policy, bronchial-alveolar lavages may be performed by physicians

For the different respiratory specimens, collection and transport containers used vary. See Table 7

Table 7: Types of respiratory specimens, collection and transport containers

Specimen	Collection	Transport Container	Comments
Nares/Nasopharyngeal	Swab of nostril/pharynx	Swab in Transport Media	Avoid mucus
Throat	Swab of pharynx and tonsils	Swab in Transport Media	Avoid touching mouth or gums with the swab
Sputum	Deep breath and cough to achieve a deep sputum	Sterile container	Rinse mouth
Broncho alveolar lavage	Performed by a health professional	Sterile container	Performed by a health professional

Equipment and Supplies

- Alcohol hand rub
- Personal protective equipment (e.g. gloves)
- Swabs
- Culture containers

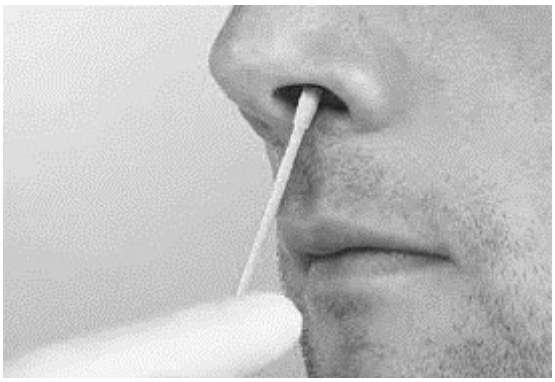
Before Collecting the Specimen

1. Prepare equipment and supplies. Ensure labels available.
2. Explain the procedure to the patient and/or their significant other if present
3. Complete requisition form with type of specimen, time of collection, site of collection, you name (name of person collecting specimen), patient's location, etc.
4. Verify the patient's identification by using two patient identifiers per policy.
5. Remember to always label the specimen with the required information:
    - Collection Date and Time
    - Patient Identification (Name, DOB, etc.)
    - Collection Method. The requisition must be filled out and the exact source of the specimen indicated e.g. "Bronchial Wash".
    - Test required
6. Wash hands thoroughly with soap and water and dry the hands with a paper towel.
7. Follow Standard Precautions for all patients. Use appropriate protective equipment such as gloves, masks, and/or face shields.

Nares Specimen Collection

1. Wash hands thoroughly with soap and water and dry the hands with a paper towel. Wear gloves.
2. Grasp the swab cap with fingers. Be careful to avoid contacting the swab or stick with your fingers.
3. Withdraw the swab; sweep around the interior surface of the anterior nares. (Do both sides with one swab.)
4. Carefully place swab in collection container and snap off shaft of swab. Make sure the cap is securely fastened.
5. Label the tube with the patient's name, specimen or specimen bar-code (nares culture) and date.
6. Send to microbiology lab with a requisition slip.
7. Remove Gloves and Wash hands thoroughly.

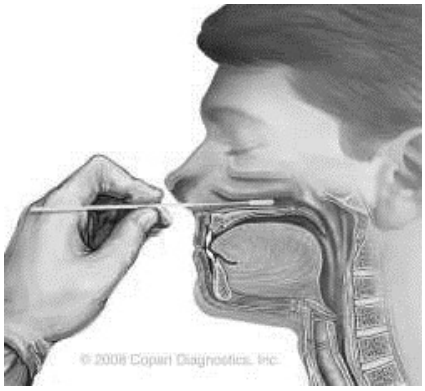
Figure 8: Nares collection



Nasopharyngeal Specimen Collection

1. Wash hands thoroughly with soap and water and dry the hands with a paper towel. Wear gloves.
2. Peel open the pouch containing the collection swab and remove the swab.
3. Holding the swab near the patient's head, visualize the distance from the patient's nostril to the front of the ear.
4. Use the thumb and forefinger of a gloved hand to grip the swab shaft at a point equivalent to half the distance measured in Step 3. This distance approximates the mid-inferior turbinate sampling site.
5. Tilt the head of the patient backwards slightly. Have the patient close their eyes as this helps minimize discomfort.
6. Gently insert the swab through one of the nostrils and horizontally into the nasal passage up to the measured distance on the swab shaft or until resistance is met.
7. Rotate the swab 2 or 3 times and then hold the swab in place for 5-10 seconds to absorb the sample material.
8. Remove the swab and insert into the Transport Medium Tube. Break the plastic shaft swab at the break point line. Replace cap and screw on tightly.
9. Apply label.
10. Place in biohazard transport bag and send to lab.
11. Remove Gloves. Wash hands thoroughly

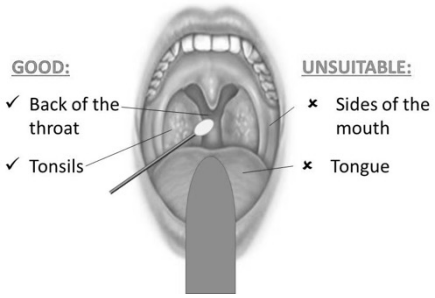
Figure 9. Nasopharyngeal Specimen Collection



Throat Specimen Collection

1. Wash hands thoroughly with soap and water and dry the hands with a paper towel. Wear gloves.
2. Use a cotton, Dacron(for viral culture),calcium alginate swab, or Swab for collection.
3. For throat, use a tongue blade and a good light source to ensure good visualization.
4. Reach behind the uvula and swab. Swab the back of the throat and tonsils, not the sides of the mouth or tongue.
    - both tonsil surfaces
    - the posterior pharynx
    - any ulceration, exudates ,lesion ,or area of inflammation
5. Place the swab into the appropriate transport media and transport at ambient temperature.
6. Remove Gloves. Wash hands thoroughly

Figure 10: Collection of throat specimen from patient



Lower Respiratory Tract Specimen Collection

Sputum, tracheal aspirate, bronchial veolar wash, bronchial veolar lavage are collected to assess infection. Lower respiratory specimens should be collected in sterile, leak proof, disposable containers. Avoid contamination with tap water or other fluid which may contain environmental bacteria.

Refrigerate the collected specimen if transport time is more than one hour. Never use swabs for the collection of lower respiratory specimens.

Bronchial Brush/Wash/Lavage

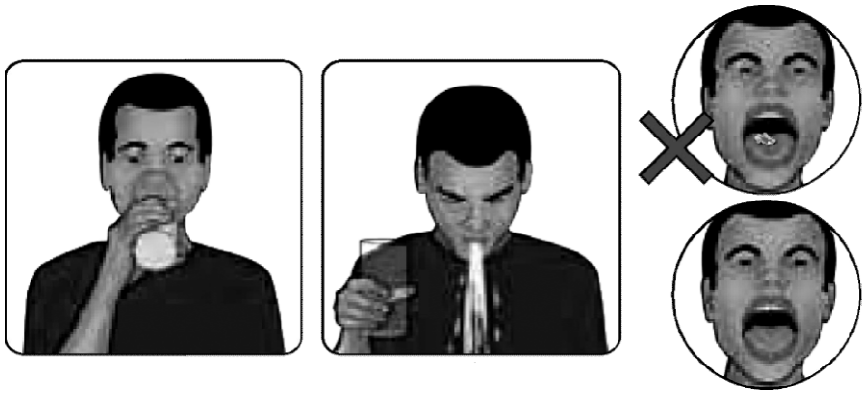
Collection of bronchial brush/wash/lavage is a medical procedure in which a bronchoscope is passed through the mouth or nose into the lungs and fluid is squirted into a small part of the lung and then collected for examination. This technique is performed by experienced individuals. Usually only performed in immune suppressed patients. Samples should be collected in a sterile container and keep at ambient temperature.

Sputum Collection

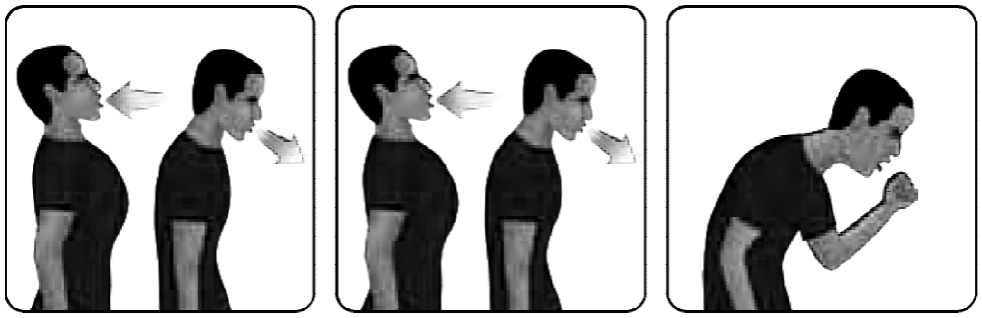
Expect or ted sputum is acceptable for bacterial, my co bacterial, and fungal cultures. Not acceptable for viral cultures. Tuberculosis patients should expectorate sputum in the early morning, into a sterile container with lid sealed tightly.

1. Instruct the patient to:

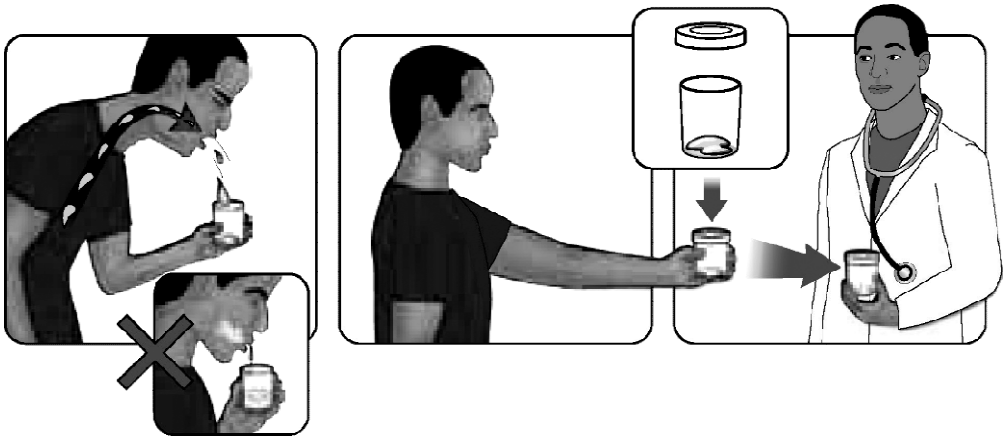
    - Rinse mouth with tap water to remove food particles



    - Breathe deeply (in and out 3 times) and cough several times to achieve a deep specimen



    - Expectorate into dry, sterilecontainer



2. Transport immediately at ambient temperature. Refrigerate if a delay of more than one hour is anticipated.

Module 6: Stool Specimens for Culture

What you should learn:

- Best practices for the collection of stool specimens for culture

Introduction

Stool specimens are collected for culture when patients are exhibiting ongoing symptoms of gastrointestinal infections. Stool samples collected on patients hospitalized longer than 3 days prior to collection are not acceptable for routine enteric culture.

Freshly passed stool should be collected on a sterile clean container. Alternatively, rectal swabs are acceptable for collection but are less preferred due to a limited amount (volume) of specimen that rectal swabs are able to collect.

Various types of stool collection kits include:

- Commercially prepared kits (vials)
- Kits made in-house for stool collection

Kits made in- house for stool collection should include:

- Sterile container
- Lid
- Label
- Spoon

Collection vessels may include:

- A bed pan
- Clean, unused plastic bag
- Unused plastic wrap placed over a toilet seat

Do not collect more than one stool specimen in 24 hours unless the specimen was improperly collected (e.g. contaminated with urine or toilet water).

Patients that are self-collecting should be given clear instructions and a visual aid (handout).

Stool samples should be refrigerated if there are more than two-hour delay in transport.

Equipment and Supplies

- Sterile container with lid
- Bed pan/plastic wrap/plastic bag (to collect sample)
- Personal protective equipment (e.g. gloves)
- Label
- Spoon

Before Collecting the Specimen

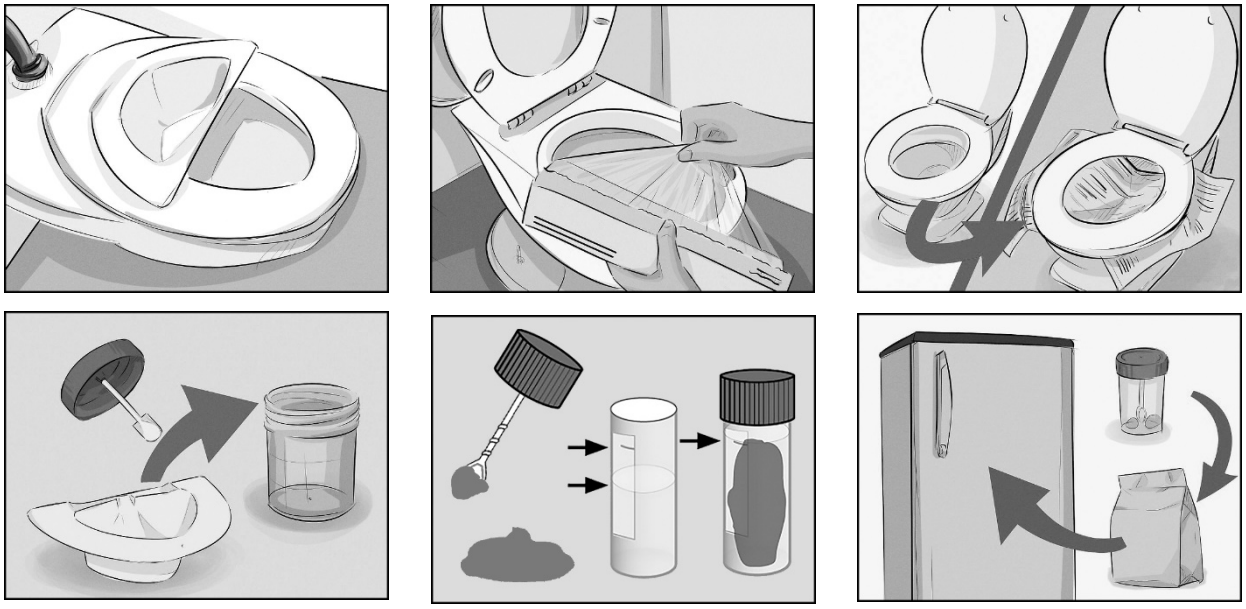
1. Prepare equipment and supplies. Ensure labels available.
2. Explain the procedure to the patient and/or their significant other if present
3. Complete requisition form with type of specimen, time of collection, site of collection, you name (name of person collecting specimen), patient's location, etc.
4. Verify the patient's identification by using two patient identifiers per policy.
5. Remember to always label the specimen with the required information:
    - Collection Date and Time
    - Patient Identification (Name, DOB, etc.)
    - Collection Method
    - Test required
6. Wash hands thoroughly with soap and water and dry the hands with a paper towel.
7. Follow Standard Precautions for all patients. Use appropriate protective equipment such as gloves, masks, and/or face shields.

Stool Culture Collection

If the patient is self-collecting, the healthcare provider should instruct patient on proper collection and how to minimize contamination to specimen and container

1. Wash hands thoroughly with soap and water and dry the hands with a paper towel.
2. Collect specimen in one of the following:
    - A clean bed pan
    - Unused plastic wrap (if available) placed between the toilet seat and thebowl.
    - A clean, unused plastic bag

    NOTE: Do not submit feces contaminated with urine or toilet water.
3. Transfer the stool to the vial / sterile clean container using the spoon if available; otherwise use another tool that is clean, fill until the specimen reaches the fill line. Remove the spoon from lid and discard.
4. Replace cap on vial and shake for a minute.
5. Wash hands thoroughly with soap and water and dry the hands with a paper towel.
6. Transport immediately to laboratory or place vial in refrigerator until ready to transport (if more than 2 hours).



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