Providence Care

Providence Care Hospital

Specimen Collection Manual for Nursing

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Specimen Collection Manual for Nursing

This manual has been reviewed and approved for use by Dr Yanping Gong, Laboratory Director, Providence Care Hospital.

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OVERVIEW OF THE MANUAL

This manual provides information regarding specimen collection. Its purpose is to supplement the information found in the Kingston Health Science Centre (KHSC) Laboratory User's Handbook and the Providence Care Hospital (PCH) Nursing Manuals.

ROLE OF THE LABORATORY IN SPECIMEN COLLECTION

The laboratory is open Monday to Friday, 0800 to 1530 hours. During hours of operation the laboratory is responsible for collection of blood specimens (except from intravascular lines, which is the responsibility of the Registered Nurse (RN). Outside of laboratory hours, blood collection is the responsibility of certified and competent nursing staff.

PCH laboratory provides oversight of the Point of Care Testing (POCT) program.

Nursing is responsible for performing glucose, urinalysis and, where applicable, illicit drug point of care testing.

If you require more information or have any questions, please call the laboratory at ext. 53170.

COURIER SERVICE

Specimens for testing are delivered to KHSC or the Public Health Laboratory (PHL) by the courier service. Monday to Friday, courier pick up times at the laboratory are scheduled in collaboration with our partners. The courier is also always available for STAT pickups.

Outside of laboratory hours, reception services (during their hours of operation) will contact the courier. When both the laboratory and reception services are closed, nursing staff or the Clinical Supervisor will contact the courier at 613-548-2484 or Security on Vocera and deliver the specimen in a specimen transport bag (from the dirty utility room) to the reception desk for pickup by the courier.

REPORTING SYSTEM FROM KHSC, KINGSTON GENERAL HOSPITAL SITE

Client results are reported in the electronic patient record (ePR) and are accessed via chart review.

Request for STAT results and results for specimens sent outside of laboratory hours

If laboratory tests are required STAT, record at the time of order entry. Results of STAT and routine blood work are automatically routed to the nursing electronic work list.

If test results are abnormal or critical, they are also routed to the physician inbox.

CRITICAL VALUES

KHSC laboratory reports all critical results via telephone to the nursing unit or laboratory. Outpatient results are reported to the physician.

Results are also routed to the nursing and physician inbox as appropriate.

IDENTIFICATION AND REJECTION OF SPECIMENS

Specimen Identification

All specimens must be clearly identified at the time of collection with an ePR Collection label securely affixed to the specimen container. Document in the ePR immediately after the specimen has been collected. The date and time of collection will automatically be recorded in the system. During laboratory business hours, all specimens must be sent to the laboratory for accessioning with the exception of Blood Bank specimens that must be accessioned by the nurse collecting the specimen in order to sign the accession labels. (See the ePR Training Manual – Laboratory Functionality [link below]).
http://intranet.providencecare.ca/our-workplace/epatient-record/Documents/Updated%20Documents%20-%20Lindsay/ePR%20Training%20Manual_Basic%20Laboratory%20Functionality.pdf

After hours, it is the responsibility of a nurse to perform accessioning.

Obtain the client's consent as per policy CLIN-PP-82 'Consent to Treatment'.

The five rights of specimen collection

1. Right *client* – refer to policy CLIN-PP-18 'Client Identification'
2. Right *test*
3. Right *order of draw*
4. Right *tube*
5. Right *label*

Rejection of Laboratory Specimens

Hospital policy and the Institute of Quality Management in Healthcare Laboratory Accreditation requirements state that unlabelled specimens or specimens with labels that do not match the requisition be rejected.

In the case of a specimen that is irretrievable, the laboratory or physician may authorize the individual who procured the specimen to attest, in writing, as to the origin of the specimen. All rejected specimens are documented in ePR and entered in SafetE-Net.

Causes for Rejection

- Unlabelled specimens
- Specimens with labels that do not match the requisition
- Insufficient amount of specimen (overfilling or under filling blood tube)
- Specimen in wrong container
- Inappropriate sample type or anticoagulant
- Leaking specimens
- Tubes with anticoagulant clotted

SPECIMEN CONTAINERS

Sterile containers with orange lids are obtained from Stores. Other containers and tube systems are obtained from the PCH laboratory and located in the clean utility room.

Note: The phlebotomy tray is located with intravenous (IV) supplies in the Medication Room.

Urine for culture or urinalysis	Sterile container (C&S containers)
Sputum for C&S Sputum for AFB* (see page 42) Sputum for cytology	Sterile container
Stool for culture	Enteric Transport media, contains pink fluid
Stool for C. Difficile	Sterile container
Stool for Ova & Parasites (OP) *	O&P Kit from Public Health
Stool for Viral culture*	Sterile container, complete a Public Health Laboratories (PHL) requisition (see procedure page 32)
Influenzae*	Viral transport media, (see procedure page 40)
Anaerobic culture	Obtain anaerobic transport media from the lab; 24-hour's notice is required so the laboratory can obtain media from KHSC.
Swabs for culture	Swab transport system
Histopathology specimens	KHSC histopathology requisition and container with 10% Buffered Formalin. Indicate the type of specimen on the container and requisition.

*These specimens are sent to PHL.

BLOOD TUBE REQUIREMENTS

The laboratory maintains the supply of blood tubes on designated units, ensuring that all expired tubes are removed from the supply. Contact the laboratory if supplies are low.

For specific tube requirements refer to the KHSC Laboratory User's Handbook at **https://KHSCtoday.KHSC.on.ca/labs/document/3469**

Order of Draw

Blood cultures, blue, yellow, red, light green, dark green, lavender and pink.

ORDER OF DRAW CHART

TUBES MUST BE DRAWN IN ORDER OF SEQUENCE I THROUGH X (BLOOD CULTURE→ROYAL BLUE AS REQUIRED

BLOOD CULTURES	LIGHT BLUE	YELLOW	RED	LIGHT GREEN	GREEN	LAVENDER	PINK	ROYAL BLUE

MANAGEMENT AND TRANSPORTATION OF SPECIMENS

Purpose

Specimens are collected and transported in a method that:

- ensures the integrity of the specimens is maintained in transport,
- improves client care by reducing the need to repeat specimen collections due to lost, broken, leaking or mislabelled specimens, and
- protects the handler from exposure to potentially infectious materials.

Policy

Routine Practices must be applied to management and transport of all specimens regardless of the client's diagnosis since the infectious status of specimens is not always known.

Procedure

- Ensure that the outside of the container is cleaned of any contamination, the lid or top is securely fastened, and the container is appropriately labelled.
- Place the specimen in a biohazard bag; ensure the bag is closed securely
- Package blood samples and blood cultures separately.
- Package any test requiring special conditions separately (i.e. ice, protection from light)
- Package any cultures separately. Two bottles from the same set of blood cultures or multiple swabs from the same client can however go in the same biohazard bag.
- Ensure specimens that require different temperatures (i.e. urines, samples on ice and blood cultures) are transported in different transport bags.
- During laboratory hours, place specimens in an orange laboratory envelope and put in the out box for transport or deliver directly to the laboratory if within an hour of laboratory closing.
- Place urine specimens being sent for culture in the specimen refrigerator and request delivery or deliver directly to the laboratory.

Suggestions to prevent leakage

- For urine, fill the container only half full. When applying the cap, twist on carefully and tightly to avoid cross threading and avoid having the sterile indicator tape between the cap and the container.
- For sputum traps, remove the cap and tubing and replace with the cap found on the bottom of the trap.

The laboratory, during laboratory hours of operation, will send most specimens to the KHSC, KGH site laboratory in an appropriate time frame (no longer than three (3) hours from the time of collection for blood specimens) or according to the nature of the requested examination.

THERAPEUTIC DRUG AND ANTIBIOTIC TESTING

Therapeutic Drug Testing

Trough (pre-dose) drug levels are mostly used in therapeutic drug monitoring. Peak (post-dose) blood levels are useful in specific circumstance only. Peak drug levels are available only for a few drugs and must be specifically ordered. Timing is critical.

A lithium level should be drawn twelve (12) hours after the evening dose. Refer to the KHSC Laboratory User's Handbook https://KHSCtoday.KHSC.on.ca/labs/document/3469 for more specific information about drug monitoring.

Antibiotic Testing

Trough Level (Pre)

Gentamicin, Tobramycin and Vancomycin*

Collect trough specimen within forty-five (45) minutes of the next dose. Samples collected at other times may lead to inappropriate changes in doses. Collect specimens with third dose if possible or as indicated by the physician or the pharmacist.

Collect one red tube.

Peak Level (Post)

Gentamicin and Tobramycin only

Collect peak sample:

- One (1) hour after intramuscular (IM) injection
- fifteen (15) minutes after a sixty (60) minute IV infusion
- thirty (30) minutes after a thirty (30) minute IV infusion

Collect one red tube.

ORAL GLUCOSE TOLERANCE TEST

Client Preparation

The client should not be taking drugs that elevate serum glucose levels, such as thiazine, diuretic, Dilantin, propranolol, Lasix, thyroid, estrogen, birth control pills or steroid tablets.

The test should be performed in the morning after three (3) days of unrestricted diet (greater than 150 g. of carbohydrate per day) and physical activity.

The client should fast for at least ten (10) and not more than sixteen (16) hours before the test.

The client should not smoke or eat, and remain at rest throughout the test. Water is permitted during the test.

A minimum of twenty-four (24) hours advanced notification is required when booking the Oral Glucose Tolerance Test (OGTT) with the laboratory.

Collection

Collect a fasting blood specimen light green top and document the specimen collection in the ePR.

Give the client the test meal of 75 g ratio-Glucose solution (obtained from the PCH laboratory). Time 0 is the beginning of the drink. Encourage the client to drink the entire glucose solution within five (5) minutes.

Collect a second blood sample in a grey tube 120 minutes after the client has finished the glucose solution. Document the specimen collection in the ePR.

VENOUS BLOOD GAS COLLECTION

Collect blood using BD Preset Arterial Blood collection syringe (contains heparin) and BD Eclipse 21 or 22 gauge 1 ½ inch needle. These are available in the arterial blood gas kit on the nursing units or may be obtained from the laboratory or Stores.

Procedure

1. Ensure the plunger on the syringe is pushed to the end so there is no air in the syringe.
2. Attach needle to syringe.
3. Insert needle and slowly; pull on plunger drawing approximately 1 1/2 ml of blood into syringe. Remove needle from arm and activate safety cover.
4. Remove needle from end of syringe, expel any air and screw the cap provided in the syringe package on the end of the syringe securely.
5. Document the specimen collection in the ePR.
6. Place syringe in one biohazard bag and place on ice in second biohazard bag.
7. Record in the ePR the FiO2 concentration or if client is on room air. Also record the client temperature if other than normal.
8. Place in transport container with STAT label and send immediately to the PCH laboratory. After hours, accession the specimen, attach the accession label and send immediately to the KHSC, KGH site Core Lab.

Causes for rejection:

- unlabelled or open syringe
- leaking specimen
- clotted specimen
- needle left on syringe

Note: Venous blood, when collected in a heparinized air-tight syringe and sealed anaerobically, is suitable for the determination of pH and PCO2. Venous blood is not suitable for the estimation of high arterial PO2 levels.

CLOSTRIDIUM DIFFICILE TOXIN

Purpose

This test is used to determine the presence or absence of Clostridium difficile toxin genes using a molecular assay. The test has a sensitivity of greater than 95%. Given the high sensitivity and quick turnaround time of the test, empiric therapy for clients with diarrhea and negative molecular C. Difficile test is strongly discouraged.

Testing will be performed on stool defined as:

- loose watery bowel movements (conform to the shape of the container), and
- the bowel movements are unusual or different for the client, and
- there is no recognized etiology for the diarrhea (for example laxative use).

Collection of only one specimen is required. Repeat testing of clients with a negative test result is restricted to seventy-two (72) hours. Molecular tests for C. Difficile are highly sensitive and a negative result indicates that Clostridium Difficile infection (CDI) is highly unlikely.

Stools that are not liquid or soft will be rejected since only clients with diarrhea should be tested.

Refer to Appendix 1 ‘Bristol Stool Chart’ to classify the type of stool to see if it meets the testing requirements.

Collection Instructions:

1. Collect stool (approximately 5 ml) in a sterile container without transport media. Ensure container lid is closed tightly.
2. Label specimen container with an ePR label and document the specimen collection in ePR
3. Send the specimen directly to the PCH laboratory. After hours, it is the responsibility of the nurse to accession the specimen in ePR, label the specimen with the accession label and send it directly to the KHSC, KGH site Core Lab.
4. ePR must state all antibiotic therapy within the past seven (7) days.

Repeat testing of clients with a positive test result is restricted to fourteen (14) days. The assay is not approved to test for cure, since nucleic acids may persist after effective treatment. Repeat testing is not helpful in determining end of treatment or the discontinuation of infection control precautions.

TWENTY-FOUR (24) HOUR URINE COLLECTION

1. Obtain a 24-hour urine container from Stores or from the laboratory if the test requires a preservative (laboratory may require up to 24 hours' notice to obtain a container with preservative). Apply client label from EPR to the container.
2. If a preservative is present instruct the client on the presence of corrosive chemical in the bottle, and ask them to note any warnings on the bottle and to not remove the preservative.
3. In the morning (for example 0700 hours) have the client completely empty their bladder and discard the urine. Note in EPR the date and time collection starts.
4. Keep the 24-hour urine container in the refrigerator or on ice.
5. All urine that is voided over the following 24- hour period must be collected and added to the container.
6. If a client is to have a bowel movement, they should first empty their bladder and add urine to the container. This precaution will avoid loss of urine.
7. At the end of the 24- hour period (in this case 0700 hours the following day) the client should empty their bladder and the urine specimen added to the container.
8. Record the starting and finishing time and the test(s) ordered on the electronic client record.
9. Sent the 24-hour collection to the laboratory as soon as possible.

Loss of voided specimen or inclusion of two morning specimens in a 24-hour period invalidates test results.

CREATININE CLEARANCE TEST

Purpose

This test is used to estimate the glomerular filtration rate (GFR).

The creatinine clearance test compares the level of creatinine in urine with the creatinine level in blood.

If desired, administering water may hydrate the client. This will produce a larger volume of urine. Withhold tea, coffee and drugs only if the physician advises.

1. Collect a precisely timed twenty-four (24) hour specimen of urine in a container with no preservative (refer to 'Twenty-four (24) Hour Urine Collection'). Refrigerate the container during the collection period.
2. Collect the specimen of blood (light green tube) during the twenty-four (24) hour urine collection period and send for serum creatinine.
3. Any loss of urine during the twenty-four (24) hour collection invalidates test results.

Note: The main source of error is faulty timing or improper collection of urine specimen

FECAL OCCULT BLOOD

Purpose

The Hemoccult test fecal occult blood test is a qualitative method to aid in the diagnosis of various gastrointestinal conditions, which manifest themselves by the presence of fecal occult blood. Serial fecal specimen analysis is recommended when screening. This test **should not** be used to test gastric samples.

Client Preparation

Diet guidelines

If possible, place the client on a high roughage diet, free of rare red meat three (3) days before and throughout the testing period.

Avoid uncooked foods that contain a high peroxidase activity (turnips, horseradish, radishes, cantaloupe, grapefruit, and cauliflower).

Follow a well-balanced diet that includes fiber, such as bran cereal, fruits and vegetables.

Drug Guidelines

For seven (7) days before and during the stool collection period, avoid non-steroidal anti-inflammatory drugs such as ibuprofen, naproxen or aspirin.

For three (3) days before and during the stool collection period, avoid vitamin C doses in excess of 250 mg per day.

Interfering Substances

Substances that can cause **false positive** test results:

- Red meat (beef, lamb and liver)
- Aspirin (greater than 325 mg per day) and other non-steroidal ant-inflammatory drugs such as ibuprofen, indomethacin and naproxen
- Corticosteroids, phenylbutazone, reserpine, anticoagulants, antimetabolites and cancer chemotherapeutic drugs
- Alcohol in excess
- The application of antiseptic preparations containing iodine (providone/iodine mixture)

Dietary iron supplements **will not** produce false-positive test results with Hemoccult tests. Acetaminophen is not expected to affect test results.

Substances which can cause **false-negative** test results:

- Ascorbic acid (vitamin C) in excess of 250 mg per day
- Excessive amount of vitamin C enriched foods (citrus fruits and juices)
- Iron supplements that contain quantities of vitamin C in excess of 250 mg per day

Specimen Collection

The Hemoccult test requires only a small fecal specimen.

Since bleeding is intermittent, it is recommended that three (3) specimens be collected on different days.

It is suggested that specimen collection be suspended in clients experiencing hemorrhoidal bleeding, menstrual bleeding, nosebleeds, colitis, diverticulitis, or constipation during the test period, or if the client has had recent dental work.

Hands, gloves and the work area must be kept clean and free of blood to avoid accidental contact of blood with the slides. Each sample should be taken from a different part of each day's stool to increase the probability of detecting occult blood in each specimen. Samples from the outside of the stool specimen will reflect conditions in the lower colon. Samples from the inside of the stool sample will be more representative of the upper gastrointestinal tract.

Slides may be developed immediately after specimen application or may be stored at room temperature and developed up to fourteen (14) days after the first specimen application. Once the specimen has been applied, keep the slides away from heat and light. Keep flaps of slide closed before and after testing.

Specimen Collection Instructions

1. Using the wooden applicator stick, collect a small sample from bowel movement on the end of the applicator stick.
2. Open flap on the side that has a place to record the client's name. Apply a thin layer of specimen inside the Box A.
3. Using the same applicator, collect another small sample from a different area of the same stool specimen and apply a thin layer inside Box B.
4. Close and re-seal the flap. Protect from heat and light. **Do not refrigerate**.
5. Label that side of slide with client's label printed from ePR. The reverse side is the testing side used by the lab. **Do not** open or cover with a label.
6. Document the specimen collection in the ePR.
7. Place in a biohazard bag and send to the laboratory for testing.

Limitations of Procedure

Bowel lesions, including some polyps and colorectal cancer, may not bleed at all or may bleed intermittently possibly allowing positive cases to go undetected. Also, blood in stool is not always homogenously distributed in the fecal specimen. Consequently, a test result may be negative even when disease is present.

Conversely, a Hemoccult test result may be positive on specimens from healthy clients. This may be due to interfering substances in the diet or medications. It may also be due to low but detectable levels of blood loss, common to both healthy adults and clients with gastrointestinal disease.

Therefore, as with any occult blood test, results with the Hemoccult test cannot be considered conclusive evidence of the presence or absence of gastrointestinal bleeding or pathology. Fecal stool blood tests, regardless of type, are intended to be used as adjuncts in combination with diagnostic procedures such as barium enema, sigmoidoscopy, colonoscopy, x-ray and other imaging studies.

Reference: Hemoccult Fecal Occult Blood Testing Product Instructions, April 2012

TRANSFUSION SERVICE REQUEST

Request for Blood Components

1. The physician inputs order in ePR giving specific details in terms of:
   - Blood component required
   - Quantity required
   - Urgency
   - Additional transfusion information – date and rate of flow for administration

The physician obtains consent from client or Substitute Decision-Maker and completes form #400397 'Consent to Receive Blood Transfusion(s)'.

2. Nurse or laboratory sees order in ePR and prints collection labels.

3. The nurse drawing the blood takes to the client's bedside:
   - Specimen tubes (two pink 6.0 ml tubes)
   - Biohazard bag
   - Specimen Collection Label

4. Person drawing the blood does the following at the bedside:
   a. Checks the client's name in the ePR and the blood bank ePR collection label against client's armband (the client must have an armband and it must match the order information and ePR blood collection label). If the client is able to respond, asks their first and last name and date of birth; confirms it matches.
   b. Collects two pink topped CROSSMATCH tubes. Mixes gently by inversion 8-10 times.
   c. Collects specimens in the ePR and accessions specimen in ePR. Places the accession label on each tube and completes the collection information label that prints with the accession label.
   d. If no accession labels print, completes the Transfusion Service Request Form and sends it with the blood.
   e. Places blood specimens, collection information label and blood collection label in biohazard bag (see page 24)

5. Sends specimen to PCH laboratory or after hours to the KHSC, KGH site Core Laboratory.

Further requests for blood can be cross- matched against the original cross-match blood specimen provided that:

- Sufficient plasma is available to complete the procedure on the requested number of units.
- Not more than seventy-two (72) hours have elapsed since initiating transfusion with other units cross-matched against this sample.

Failing to meet any one of these requirements, a new specimen and request form must be supplied following the appropriate procedure.

Other Blood Blank Components that may be ordered that don't require specimen collection:

- IVIG
- Albumin
- Platelets***
- Plasma***
- Cryoprecipitate***

Laboratory staff or nursing (after hours) collect specimens in ePR and then accessions it in Sunquest using the specimen collection number on the ePR label. By accessioning in Sunquest the order request is sent directly to KHSC, KGH site Blood Bank. It is the responsibility of nursing to call the Blood Bank and inform them when they want the product and to arrange pick up by the courier.

***When Platelets, Plasma or Cryoprecipitate are ordered and there is no current Type and Screen or Cross Match on file at the Blood Bank within the previous seventy-two (72) hours, a Type and Screen must be ordered. Collect the Type and Screen, accession it and attach accession labels to the blood tubes and send to the KHSC, KGH site Blood Bank.

Note: ABO typing must be confirmed prior to issue of group-specific blood product to avoid an acute hemolytic reaction. If there is no prior blood group result available, laboratory staff will notify the care unit that a fresh specimen needs to be collected. This will not result in any delay in availability of blood products, if not previously on file at KHSC.

BLOOD CULTURE COLLECTION PROCEDURE

It is important to follow strict aseptic technique when collecting blood cultures so that normal skin organisms are not introduced in the culture bottles. There are many organisms that grow on the skin and therefore can be introduced through venipuncture into the blood culture bottles. The introduction of only one organism into a bottle will result in the blood culture being regarded as positive.

Blood cultures should be drawn prior to the initiation of antimicrobial therapy. If the client is on antimicrobials, take the blood sample just before the next dose is due.

Collect two blood culture sets (two bottles per set) for a total of four bottles. This includes one aerobic and one anaerobic from one site and one aerobic and anaerobic from a different site.

Collect 10 ml per bottle.

Blood should be collected by peripheral venipuncture. If an endovascular/endocarditis infection is being considered, draw a third set twenty (20) to thirty (30) minutes after the first two sets. If the client has an intravascular line, collect one set by peripheral venipuncture and a set from the intravascular device. Also, for clients with an intravascular line collect a third set of blood cultures thirty (30) to sixty (60) minutes later from a different peripheral venipuncture site. Note on the requisition if blood was drawn from an intravascular line.

Special Instructions

Blood culture bottles must never be stored in the refrigerator. They should be transported to the laboratory as soon as possible for incubation. **Do not** cover the bar code or lot number with the client label.

Optimally, 10 ml should be drawn into each bottle. Before collection, mark on each bottle where the 10 ml fill will be and fill only to this level. Do not overfill the bottles as this may cause false positive readings. If additional blood is required for other tests, it must be collected after the blood cultures.

Collection Procedure

Take the following items to the client's bedside:

- Tourniquet
- Chlorhexidine Gluconate swab (Solu-I.V.)
- Alcohol 70% swab
- Vacutainer Blood collection set, an aerobic bottle (green cap) and an anaerobic bottle (orange cap)
- Blood culture adapter holder and an insert if additional blood tubes are to be drawn.
- Specimen collection labels.

1. Inspect the bottle surface, the broth media and the sensor (opaque layer) at the bottom of the bottle. Ensure the sensor is intact and is grey in color. Do not use the bottle if the sensor is yellow.
2. Use principles of Routine Practices – clean hands and apply gloves.
3. Prepare each culture bottle by removing the cap. Disinfect septum on bottle with an alcohol swab, allow to dry.
4. Position the client's arm and culture bottles. Apply tourniquet.
5. Select venipuncture site and wash with soap if skin is dirty.
6. Moving from the vein outwards, wipe skin with chlorhexidine swab for thirty (30) seconds in concentric circles away from the puncture site covering a circular area 1 to 2 inches in diameter. Allow to dry.
7. Wipe skin with 70% alcohol in the same manner and allow to air dry for sixty (60) seconds. Do not palpate the site after disinfection. **Note:** For clients sensitive to chlorhexidine use a providone-iodine swab.
8. Perform venipuncture with a vacutainer blood Collection Set preferably 21 gauge (Butterfly needle) if vein allows. Draw one aerobic bottle (green cap) and then one anaerobic (orange cap) bottle from one site. Repeat procedure drawing one aerobic bottle and one anaerobic from another site. It is very important to collect the aerobic bottle first so any oxygen is removed before the anaerobic tube is collected. Ensure a 10 ml draw to each bottle. If additional blood is required for other tests, place the adapter insert into the adapter cap and snap into place. This makes the cap compatible with the other collection tubes. Collect other tubes.
9. Mix blood and culture medium thoroughly by inverting culture bottles gently several times
10. Label specimens (**do not** cover the bar code with the client label), document specimen collection in the ePR and send directly to the PCH laboratory. After hours, label specimens, document specimen collection and accession specimens. Apply accession label to bottles and send to the KHSC, KGH site Core lab. **Do not refrigerate specimens**.
11. Send blood culture bottles in a separate biohazard bag, separate from other samples.

If obtaining a third set of blood cultures from a CVAD (first two sets obtained by peripheral venipuncture), 9 mL blood discard is NOT required prior to obtaining the specimen. (Refer to Nursing policy V-I-10 'Central Venous Access Device (Portacath) – CVAD (Portacath)' and policy V-C-35 'Central Venous Access Device Care and Maintenance'.)

SCREENING PROTOCOLS FOR METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS (MRSA) OR OTHER MULTIDRUG RESISANT ORGANISMS (MDRO)

Methicillin-resistant Staphylococcus aureus (MRSA) screening is performed on all new admissions that have had contact with a hospital (overnight stay or longer), or been in a communal living section setting such as a group home, penitentiary or long-term care facility in the previous twelve (12) months.

Admission screening swabs are ordered either by infection control as part of the medical directive for MRSA screening or by the admitting physician. (See medical directive CLIN-MD-8 'Initiating Surveillance Screening for Antibiotic Resistant Organisms'.)

Collection Procedure for MRSA

1. Take printed labels generated from the ePR, swabs, and biohazard bag to the client's room. A label from the ePR should accompany each swab. Only swabs should enter the room if the client on Contact Precautions.
2. Remove sterile swab from labelled transport medium.

Nares

a. Collect one swab from both anterior nares. Dip the sterile swab into the transport medium. Insert swab into the anterior nares just until the tip is no longer visible and swab the inside the nose in a circular motion, 2-3 gentle circles.

b. Use the same swab to do the other nares.

Perianal

a. Gently swab perianal area

Open Wound / Exit Site

a. Swab wound that is the largest and/or has the most exudate present.
b. If there is no open wound but there is an exit site (e.g. g-tube or J-tube, tracheostomy or PICC) swab the skin junction at that site.

Stool / rectal swab

There are three options to obtain a stool specimen.

a. Insert swab into stool specimen.
b. Rectal swab : insert swab into rectum ensuring stool is on the swab (evidence of specimen)
c. Collect stool sample and place at least 5ml of stool in enteric transport media.

3. Label the specimens with the client identifier label and write the site of the swab on the label. Document the collection in the ePR.
4. The swabs may all be sent in the same biohazard bag provided they are labeled properly.
5. Refrigerate the swabs for porter pickup and delivery to applicable PCH laboratory. Specimens collected after 1530 hours may be sent the next day.

BODY FLUID ANALYSIS

SYNOVIAL FLUIDS

Collection Instructions

Cytology & Crystals	Collect 1-5mL of fluid in a red topped tube, label and send with completed Cytology requisition to laboratory immediately.
Chemistry and Cell Count	Collect a separate red tube for chemistry and a lavender tube for cell count.
Culture	Collect 0.5 to 10mL from a sterile aspiration site into a sterile specimen container or alternatively inject into aerobic and anaerobic blood culture bottles. DO NOT REFRIGERATE. Send immediately to KHSC, KGH site Core lab.

PLEURAL AND ASCITIC FLUIDS

Collection Instructions

Cytology	Collect 100 to 200 mL in a plastic cup with a tight fitting lid. If clotting occurs small samples may be collected in green or lavender tubes. If fluid is collected after laboratory hours or on the weekend keep the specimen refrigerated. Send with completed cytology requisition.
Chemistry and Cell Count	Collect a red tube for chemistry and collect a lavender tube for the cell count.
Culture	Collect 0.5 to 10mL from a sterile aspiration site into a sterile Specimen container or alternatively inject into aerobic and anaerobic blood culture bottles. DO NOT REFRIGERATE. Send immediately to KHSC, KGH site Core lab.

PUBLIC HEALTH LABORATORY TESTING

Hepatitis, human immunodeficiency virus (HIV) and Viral testing are referred to the PHL (see pages 34 to 41 for collection instructions). Other tests performed at PHL include Tuberculosis (TB) (Mycobacteria culture and smear) and Syphilis screen**.**

Refer to the back of the Public Health Laboratory test requisition for a complete list of tests.

A completed PHL test requisition form must accompany all specimens submitted to the Public Health Laboratory. Fill in the PCH location and client information section 1 and 2. The client's label may be used for section 2. Make sure the complete information is provided:

- Health Card Number
- Date of birth and sex
- Client's full name and complete address
- Physician's name
- Referring institution (PCH) and address. Provide a telephone number and fax number

Fill in the PCH location and client information section 1and 2. The client's label may be used for section 2. Make sure the complete information is provided:

Indicate specimen type.

Indicate Reason for Test in the ePR.

This information assists the PHL laboratory in providing optimal turnaround time for results reporting.

Collect the specimen and send with completed PHL label to the PCH laboratory.

HEPATITIS TESTING

General Comments

In every case for tests pertaining to Hepatitis A, B and C submit pertinent information with reference to reason for test request:

- Clinical signs/symptoms
- Biochemical test results
- Risk group
- Previous history
- Previous tests done
- Identify on the electronic order what the reason for test is, i.e. to diagnose disease, to determine immune status, or a hepatitis screen (as each requires a separate set of markers).

TO DETERMINE THE FOLLOWING	APPROPRIATE MARKER NEEDED
HEPATITIS B	
Acute Infection	HbsAg/Anti HBc
Past Infection	Anti HBc/Anti HBs
Immune Status	Anti HBs Ag
Post Vaccination	Anti HBs Ag
Chronis Hep B	HbsAg/HbeAg/Anti Hbe

HEPATITIS A	
Immune Status	Total (IgM and IgG)
To Diagnose Disease	Acute Infection IgM

HEPATITIS C
The detection of antibodies to HCV cannot be used to differentiate between a previous infection (chronic) and an acute infection.

HEPATITIS SCREEN: Specify A, B and/or C.

These measures allow the PHL to test for pertinent markers and consequently assist timely receipt of results.

NEEDLE STICK INJURY

Refer to Administrative Manual policy ADM-HS-41 ‘Sharps Management-Needlestick Injury Prevention’.

HUMAN IMMUNODEFICIENCY VIRUS (HIV) TESTING

HIV testing is used as a follow-up to accidental exposure to blood and body substances. It is also used to assist in making a diagnosis of HIV infection and to screen donors of blood, organs and body substances.

Screening for human immunodeficiency virus serology is sent to the Public Health Laboratory for CMIA screening. Reporting time is approximately three (3) days and if result is 'positive' or indeterminate by CMIA, the confirmation test will take an additional week approximately.

Collection Instructions

Collect one yellow-topped tube of blood and properly input a completed Public Health Laboratory HIV order in the ePR (exposure category, reason for HIV testing, symptoms and specimen details) so that it will automatically route to the laboratory. Laboratory staff will accession the specimen and courier it to the PHL.

RESPIRATORY VIRAL COLLECTION

The laboratory needs high level of organism to culture successfully for respiratory viruses such as RSV, Influenzae A&B or parainfluenza virus. A properly taken nasopharyngeal swab will yield high levels of organism.

The viral collection kits that include viral transport media and a flexible nasopharyngeal swab are available on each nursing unit or contact the PCH laboratory. Specimens should preferably be collected within forty-eight (48) hours of disease onset.

Instructions for the collection and transportation of clinical specimens for virus culture and direct antigen testing

Print an ePR label.

1. Insert flexible nasopharyngeal swab in to one nostril. The client's head should be inclined from vertical to about a 70% angle.
2. Press the swab tip on the mucosal surface of the mid-interior turbinate.
3. Briefly rotate the swab once it has been inserted.
4. Leave the swab in place for a few seconds to absorb material.
5. Aseptically remove cap vial and insert the swab into medium.
6. Break the swab shaft at score line. Secure the lid tightly.
7. Label the specimen container with the client's ePR label and document the specimen collection.
8. Place the specimen in a biohazard bag and seal the bag.
9. To maintain optimum viability, the specimen should be stored and transported at 2 – 8ºC or on wet ice to the laboratory for processing within forty-eight (48) hours of collection.
10. Send the specimen to the PCH laboratory. The PCH laboratory will forward the specimen to the KHSC, KGH site or Public Health Laboratory.

VIRUS ENTERIC (VIRAL DIARRHEA)

Enteric virus kits are kept in either the clean utility room on the nursing units.

Instructions for the collection and transport of fecal specimens for virus culture, electron microscopy, PCR and direct antigen testing:

1. Collect the specimen as early as possible following the onset of symptoms.
2. Aseptically remove the cap from the container.
3. Using a wooden spatula, place approximately 1-2 teaspoons of feces into a sterile container.
4. Replace and tighten the cap and repeat for additional containers provided.
5. Place the ePR client label on the specimen container.
6. Document the specimen collection.
7. Place the container in the biohazard bag, seal the bag and send the sample to the PCH laboratory.

To maintain optimum viability, the specimen should be stored and transported at 2 – 8ºC or on wet ice. The specimen should reach the PHL within forty-eight (48) hours of collection.

TUBERCULOSIS (TB) CULTURE INSTRUCTIONS (MYCOBACTERIUM)

Instructions for the collection and transportation of sputum specimens for Mycobacterium culture including M. tuberculosis

Print the ePR label.

1. Collect sputum sample in a sterile container early in the morning before eating. **Do not** submit saliva or nasal secretions.
2. Collect sputum specimens on three (3) consecutive early mornings and submit each to the laboratory upon completion. Five ml of sputum is optimal; the client may expectorate several times. **Do not** pool the three specimens.
3. After collection, replace the cap on the container closing tightly.
4. Label the container with the client's ePR label. Place the container in biohazard bag and seal the bag.
5. Document the specimen collection.
6. Place each specimen in a separate biohazard bag.
7. Transport the specimen to the laboratory as soon as possible after collection. If transport is delayed more than one (1) hour, the specimen must be refrigerated.

URINE FOR CYTOLOGY

Purpose

For the cytodiaganosis of bladder, ureteral and renal pelvic malignancies, follow up on clients treated for transitional cell carcinoma and detection of cytomegalic inclusion disease. Turnaround time is 1 – 2 days.

Specimen requirements

30 – 50 ml of voided or catheterized urine; washing and brushings from blade, ureters or renal pelvis

Specimen Collection Instruction

1. Have the client drink as much as possible over 1 and 1/2 to 2 hours.
2. Discard any urine passed during this time.
3. At the end of the two (2) hours, have the client empty their bladder and discard the urine.
4. Collect the next voided urine specimen in plastic urine cup with tight fitting lid.
5. Note on the electronic order the type of specimen: voided urine, catheter specimen, ureteral catheter specimen, etc.
6. Repeat three (3) – five (5) days in a row (except Saturdays, Sundays and statutory holidays).
7. If the client cannot be hydrated, send a random voided sample.

Notes

- Voided urine is better than catheter specimens.
- Do not send first morning voided urine or 24-hour specimens. If urine remains in the bladder for a period of time, the cells undergo degeneration and cellular preservation in very poor.
- Cellular degeneration occurs very rapidly. Send to the laboratory as soon as possible. If there is a delay, refrigerate the sample.
- Marked cellular alteration may result from renal, ureteral or bladder stone, radio or chemotherapy. Please remember to indicate relevant clinical information on requisition.

COLLECTION INSTRUCTIONS FOR OUTPATIENTS

Twenty-four (24) Hour Urine Collection- Outpatient Instructions

1. If a preservative (corrosive chemical) is present in the bottle, note the warnings on the bottle. **Do not** remove the preservative.
2. In the morning (for example 7:00 a.m.), completely empty your bladder and discard the urine. Note the date and time collection starts.
3. Keep the twenty-four (24) hour urine container in a cool place, preferably in the refrigerator or on ice.
4. All urine that is voided over the following twenty-four (24) hour period must be collected and added to the container.
5. If you have a bowel movement, first empty your bladder and add urine to the container. This precaution will avoid loss of urine.
6. At the end of the twenty-four (24) hour period (in the case 7:00 a.m. of the following day), empty the bladder and add the urine specimen to the container.
7. Record the starting and finishing time on the requisition and the test(s) ordered.
8. Bring the twenty-four (24) hour collection to the laboratory as soon as possible.

Loss of voided specimen or inclusion of two morning specimens in a twenty-four (24) hour period invalidates test results.

Urine for Culture and Sensitivity- Midstream (Female)

Please follow instructions carefully so that an appropriate sample is received for testing.

1. The container given to you is sterile. **Do not** touch the inner surfaces of the container or cap.
2. Wash hands with soap and water and dry thoroughly.
3. Remove lid from container and set lid aside.
4. Remove towelette from the package.
5. Sit back as far as possible, spreading legs apart.
6. Separate the skin of the vulva and wash the area front to back with towelette.
7. Continuing to hold the skin folds apart, pass a small amount of urine into the toilet, then urinate into the container. The container should only be ¼ to ½ full.
8. Remove container and finish urinating into the toilet.
9. Replace the cap securely on the container. Place the container in the plastic bag and seal.
10. Discard the towelette and package into the garbage container.
11. Flush toilet and wash your hands with soap and water.
12. Give urine sample to clinic nurse.

Urine for Culture and Sensitivity- Midstream (Male)

Please follow instructions carefully so that an appropriate sample is received for testing.

1. The container given to you is sterile. **Do not** touch the inside of the cap or container
2. Wash hands with soap and water and dry thoroughly.
3. Open the container and place container and cap aside.
4. Remove towelette from the package.
5. Retract the foreskin of the penis (if uncircumcised).
6. Take the towelette and clean the head of the penis thoroughly.
7. Pass a small of amount of urine into the toilet first.
8. Place the container under the flow of urine and collect sample in the container.
9. Remove container and finish urinating into the toilet.
10. Close container by screwing the cap on tightly and pace container in bag and seal.
11. Discard the towelette and package in the garbage container.
12. Flush toilet and wash your hands with soap and water.
13. Give urine sample to clinic nurse.

Sputum for Culture and Sensitivity (C&S)

Collection Instructions for Outpatient

1. The sputum specimen obtained should be the result of a deep cough and be of a thick nature, not saliva. Collection of an early morning specimen before breakfast facilitates obtaining such sputum, since a person pools respiratory secretions overnight.
2. Cough directly into the sterile collection container.
3. Complete the information requested on the container label and place in bag.
4. Put the sample in the refrigerator as soon as the collection is complete.
5. The specimen must be received in the laboratory within twenty-four (24) hours of collections.

Stool for Culture and Sensitivity (C&S)

Collection Instructions for Outpatient

1. Collect stool in clean container. **Do not** contaminate the container with urine or residual soap or disinfectants.
2. Fill the container to the ‘fill’ line with the spoon provided in the container.
3. Record your full name and date of collection on the container.
4. Seal in bag and return specimen to clinic office.

Stool for Ova and Parasites (O&P)

Collection Instructions for Outpatient

1. Collect stool sample in a clean container or use a newspaper**. Do not** collect from the toilet bowl.
2. Collect stool including gross blood or mucous and add to container. Do fill not above the 'Fill' line.
3. Emulsify stool sample with liquid in container using spoon in container.
4. Label container with full name, date of birth and date of collection.
5. Seal in bag and return sample to clinic office.

Collection Instructions for Fecal Occult Blood (FOB) Test

Outpatient Preparation

Eat a high roughage diet two (2) days before and continuing through the test period. Avoid red meat, raw fruits and vegetables, Vitamin C in excess of 250 mg per day, aspirin and alcohol. Stool samples should not be collected if obvious rectal bleeding, such as hemorrhoids, is present.

Client Identification

In space provided fill in name, age and sample collection date.

Specimen Collection

1. Collect stool specimen in a clean container.
2. Using the wooden applicator stick provided, collect a small sample from bowel movement at the end of the applicator.
3. Apply a thin layer of specimen inside the first test window labeled A.
4. Using the same wooden applicator stick, collect another small sample from a different area of the same specimen and apply in a thin layer inside the test window labeled B.
5. Close and reseal the test slide upon completion specimen collection and protect from heat and light.
6. Collect specimens for three consecutive days if you have been given three test set
7. Place samples in bag and seal. Return them to clinic office within five (5) days of completing test.

Reference: Hemoccult Fecal Occult Blood Test Product Insert, April 2012.

References

PHL Specimen Collection Guide

KHSC Laboratory Users' Manual, Version 7.7, December 2017

Bloody Easy 3, A Guide to Transfusion Medicine, 2011

Bristol Stool Chart, Lewis SJ, Heaton KW, 1997

IQMH Accreditation Requirements and Guidance Information, Version 7.1, April 2017

Appendix 1

Bristol Stool Chart