

Specimen Collection

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Preamble

- No specimens will be drawn without prior consultation with the HCP Infectious Disease Specialist(s)
- Restricted laboratory services for biochemistry, hematology, and microbiology are available for persons under investigation for a high consequence pathogen (HCP) up until confirmation of not having the disease
- Clearly label all specimens “HCP Suspect” on the sample and requisition
 - “HCP Suspect” labels available from HSC Print shop
- To minimize frequency of accessing the isolation room, plan any other nursing care required while in the room while acquiring specimens
- Discuss and coordinate specimen collection with all labs prior to obtaining any specimen(s). The lab requisitions must be prepared in advance, including placing a “HCP Suspect” label on requisition(s)
- During collection, avoid external contamination of the specimen tubes and containers
- If any items during specimen collection fall on the floor, DO NOT pick them up; wait for instructions from **Monitor**▲
- Anteroom door is the door between the hallway and anteroom
- Patient room door is the door between the anteroom and patient room
- Throughout the checklist, disinfectant will be referred to as disinfectant
- If at any point in the process the **Primary+** has soiled scrubs, proceed to the Soiled Scrubs Checklist

PREPARATION:

- Glove hygiene process:
 - Immerse gloved hands into basin and rub together in IP&C approved disinfectant without splashing
 - Pat gloves dry with IP&C approved disinfectant wipe(s)
- The following supplies are required for sample collection in the patient room
 - Two basins
 - Biohazard bags (labeled HSC and/or Cadham depending on sample to be collected)
 - Two specimen collection kits, in the event one kit is compromised, consisting of
 - A small clear lab bag(s) containing appropriately labeled collection tubes and all required supplies for blood collection
 - Yellow/Gold top and short purple/lavender top tube (to be sent to Cadham)
 - Dark green top tubes, short purple/lavender top tubes, and plain (non-additive red/clear) vacutainer collection tubes (to be used for Biochemistry and Hematology testing in patient room using i-STAT and pocH-100i analyzer instruments, and the BinaxNOW Malaria card)
 - Labeled blood culture tube(s) (as per standard nursing blood culture collection process) to be sent to HSC Clinical Microbiology Lab/Shared Health

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- Any other tubes as required per physician orders (follow standard nursing specimen collection procedures)
- All other routine supplies required for drawing blood depending on patient's vascular access

PRE-COLLECTION TASKS:

- Contact the appropriate lab(s): HSC Clinical Microbiology Lab (204) 787-1273 and the Cadham Provincial Laboratory (CPL) on call physician through HSC paging at (204) 787-2071.
- Speak directly to **Laboratory Φ** staff in each lab.
- Advise the **Laboratory Φ** staff collection will be occurring, including the type of tests and patient location. Coordinate with all labs when to draw specimens from patient.
- Gather collection equipment.
 - Ensure all collection tubes, biohazard bags and lab requisitions are available and correctly labeled and fully completed outside the patient room with all pertinent patient information
 - Wait to collect the specimen(s) until the requisitions and labels have been completed and the HSC **Laboratory Φ** Technologist has arrived in the unit/area.
- Apply standard labeling for each specimen outside the patient room. Clearly label each specimen container prior to entry into the patient's room; place a "HCP Suspect" label and patient identification on each specimen tube; follow standard labeling process. Place piece of clear tape on tube labels. Place a specimen requisition with each specimen in the pouch on the outside of the transport box (NOT inside the sealed compartment).

Legend

Primary+
Monitor ▲
Assistant 1Ω
Laboratory Φ

Specimen Collection

Process:

Primary+	Considerations
<p>Enter patient room with supplies inside basins. DO NOT place basins down until the bedside table surface is prepared</p>	
<p>Wipe bedside table surface with disinfectant wipes. Discard wipes. Allow 1-minute wet contact time</p>	
<p>Place basin containing specimen collection kits on the bedside table closest to the patient</p>	
<p>Place empty basin on bedside table, furthest from the patient</p>	
<p>Perform glove hygiene</p>	
<p>Place specimen bags between the basins on bedside table</p>	
<p>Remove collection tubes from a specimen collection kit and blood collection supplies and place directly into basin closest to patient. Do not place collection tubes on bed</p>	
<p>Collect specimens as per the standard collection process</p> <ul style="list-style-type: none"> • Collection tubes: fill all tubes to capacity • If blood collection is an issue, lavender top tube for Cadham must be full; other specimens must be at least half full 	
<p>Place filled specimen tubes directly back in basin closest to patient; do not place on bed</p>	
<p>Dispose of sharps in supplied sharps containers in patient room</p>	
<p>Dispose of remaining collection supplies in blue drum in patient room</p>	
<p>Perform glove hygiene</p>	
<p>Use one disinfectant wipe to wipe entire surface of wash basin furthest from patient</p>	
<p><i>Perform glove hygiene</i></p>	
<p><i>Use disinfectant wipe (one wipe for each bag) and wipe biohazard bags</i></p> <ul style="list-style-type: none"> • <i>Touching the outside of the bag only, confirm labeling on the bag</i> • <i>Pull bag open; stand bag in wash basin ensuring bag is opened and upright for easy placement of tubes</i> 	
<p>REPEAT ABOVE ITALICIZED STEPS until all bags are ready to receive specimens</p>	
<p><i>Perform glove hygiene</i></p>	
<p><i>Use a disinfectant wipe (one wipe for each tube) and pick up a specimen tube</i></p>	
<ul style="list-style-type: none"> • <i>Wipe entire surface of specimen collection tube</i> • <i>With a disinfectant wipe, place collected specimen tube in appropriate, labeled, specimen bag</i> <ul style="list-style-type: none"> ○ <i>Place purple/lavender and a yellow/gold tube into the “Cadham” labeled bio specimen hazard bag</i> ○ <i>Dark green, purple/lavender, and plain (non-additive red/clear) vacutainer collection tubes are used for testing in the patient room</i> ○ <i>If applicable, place blood culture collection bottle(s) into another specimen bag labeled “HSC Clinical Microbiology Lab”</i> 	
<p>REPEAT ABOVE ITALICIZED STEPS until all collected specimens are in appropriate specimen bags</p>	
<p><i>Perform glove hygiene</i></p>	

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Take one specimen bag and arrange tubes flat at the bottom. Push tubes to one side of the bag.

- *Fold bag lengthwise (vertically) in half, ensuring label is to the outside*
- *Roll the bag bottom up and release excess air*
- *Seal the bag by pulling off and securing the adhesive strip. Be careful not to touch gown when rolling up biohazard bag*
- *Place the sealed, rolled biohazard bag back into the wash basin*

REPEAT ABOVE ITALICIZED STEPS until all specimen bags are sealed and back in the basin

Perform glove hygiene

Wipe door handle and door plate with disinfectant wipes. Discard wipes. Allow 1-minute wet contact time

Perform glove hygiene

Collect all specimen bags from basin into one hand, open patient room door with the other hand and step onto the disinfectant mat on **Primary+** side of anteroom. Allow door to close behind you

Wait for **Monitor direction; do not proceed with activities**

Placing Collected Specimens in Laboratory Canisters and Hand-Off to Laboratory Φ Staff	Considerations
Assistant 1Ω	
<ul style="list-style-type: none"> • Enter anteroom 	
<ul style="list-style-type: none"> • Use one disinfectant wipe and disinfect Assistant 1Ω Mayo stand. Allow 1-minute wet contact time 	
<ul style="list-style-type: none"> • Perform glove hygiene 	
Monitor ♠	
<ul style="list-style-type: none"> • Ensure Laboratory Φ staff is ready to begin. Open anteroom door for canister handoff 	
Laboratory Φ	
<ul style="list-style-type: none"> • While standing in hall, reach into anteroom with open transport box 	
Assistant 1Ω	
<ul style="list-style-type: none"> • Remove canister from transport box, held by Laboratory Φ staff 	Do not touch outside of transport box
<ul style="list-style-type: none"> • Place canister on disinfected area of counter 	
REPEAT above steps until all required canisters are on the Mayo stand	
Monitor ♠	
<ul style="list-style-type: none"> • Close anteroom door 	

Primary+

- Prepare to hand off specimen bag. Confirm with **Assistant 1Ω**

Specimen Collection

Assistant 1Ω

- ONLY take the lid off the canister that corresponds to the specimen bag being handed off
- Place lid on the Mayo stand
- Remove bubble wrap from canister, unravel and hold bubble wrap open with hands under the centre to receive specimen bag from **Primary+**

Do not touch specimen bag

Primary+

- Ensure specimen bag is rolled up compactly
- Place specimen bag into middle of bubble wrap held by **Assistant 1Ω**
- Perform glove hygiene

Confirm which specimen(s) are being placed in wrap using closed loop communication

Assistant 1Ω

- Wrap specimen bag with the bubble wrap without touching specimen bag
 - Place bubble wrapped bag in canister; replace canister lid
 - Perform glove hygiene
- REPEAT above steps until all specimen bags are in the correct canisters.**
- *Take one disinfectant wipe, pick up one canister and wipe down entire surface of canister. Discard wipe. Allow 1-minute wet contact time*

Monitor ♠

- *Open anteroom door for **Assistant 1Ω** and **Laboratory Φ** staff*

Assistant 1Ω

- *Confirm with **Laboratory Φ** staff the correct specimen is going to the correct lab; confirm patient and lab requisition*

Laboratory Φ

- *While standing in hall, reach into anteroom with open transport box*

Assistant 1Ω

- *Place canister in transport box without touching outside of transport box*
- *Perform glove hygiene*

Monitor ♠

- *Close anteroom door*

REPEAT the above italicized steps until all canisters are out of the anteroom.

Appendix 1**Clinical tests – collection tubes required:****Biochemistry**

- Chemistries/electrolytes and blood gases - glucose, urea, creatinine, lactate, Na, K, Cl, troponin I, pH, pCO₂, pO₂
- Blood sample collected into a lithium heparin (no gel) vacutainer collection tube (dark green top tube)

Hematology

- INR – blood sample collected in a plain (non-additive red/clear) vacutainer collection tube or into a syringe to be tested on i-STAT
- Malaria antigen – blood sample collected into an EDTA tubes (purple/lavender top tube) vacutainer collection tube to be tested using a BinaxNOW Malaria card
- Note: A second specimen must be collected 8 hours later if the initial one is negative.

Microbiology

- Blood cultures submitted in aerobic and anaerobic blood culture bottles

VHF disease tests – collection tubes required:

- PCR and viral culture – 2-4ml in tube containing EDTA (purple/lavender top tube)
- Serology 2-4ml in serum separator tube (gold/yellow top tube)

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Appendix 2 – LIMITED MENU OF LABORATORY TESTS REQUIRED TO MANAGE A PATIENT PRESENTING WITH POSSIBLE VHF

BIOCHEMISTRY AND HEMATOLOGY TESTS FROM i-STAT

CARTRIDGE PANEL CONFIGURATIONS AND BLOOD VOLUME: (shading denotes calculated value)

Cartridge	Volume (µL)	pH	PCO ₂	PO ₂	Na	K	Cl	iCa	Glu	BUN	Creat	Lact	Hct	TCO ₂	PT/INR	cTnl	HCO ₃	TCO ₂	SO ₂	BE	Anion Gap	Hb
CHEM8+ (venous only)	95				•	•	•	•	•	•	•		•	•							•	•
CG4+	95	•	•	•								•					•	•	•	•		
PT/INR	20														•							
cTnl	17															•						

ADDITIONAL HEMATOLOGY TESTS

Malaria – tested using Binax NOW Malaria kit (CLIA waived)

MICROBIOLOGY TESTS

Blood Cultures – collected from 2 sites to rule out bacteremia/typhoid fever

REFERRED OUT TESTS

Specific Testing for VHF – blood for molecular detection and blood for serology, as recommended by Cadham Provincial Laboratory

Testing for Other Infections – would depend on the specific presentation of the patient. Dengue serology and *Rickettsia* serology may be considered empirically as well. Specimens will be sent to CPL as soon as possible.