
THE

University of Vermont
HEALTH NETWORK

Champlain Valley Physicians Hospital

2019 LAB GUIDE SPECIMEN COLLECTION

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Contents

SPECIMEN COLLECTION - MISC. NOTES ON SPECIMEN COLLECTION.....	4
SPECIMEN COLLECTION TUBES.....	5
AMNIOTIC FLUID.....	7
ARTERIAL BLOOD GASES.....	8
BIOPSIES.....	9
BLOOD COLLECTION TUBES (2 Pages)	10
BLOOD CULTURE COLLECTION.....	12
BODY FLUIDS COLLECTION (2 Pages).....	13
BONE MARROW ASPIRATION AND BIOPSY	15
CREATININE CLEARANCE.....	16
CYTOLOGY.....	17
GLUCOSE SCREENING – GESTATIONAL (PREGNANT FEMALES).....	18
GLUCOSE TOLERANCE TEST - GESTATIONAL (PREGNANT FEMALES)	19
GLUCOSE TOLERANCE TEST - STANDARD ORAL (NON PREGNANT)	20
GLUCOSE (ORAL) & GESTATIONAL TOLERANCE- CVPH STAFF INSTRUCTIONS.....	21
HAIR, SKIN, AND NAILS FOR FUNGAL CULTURE - COLLECTION INSTRUCTIONS	22
N. GONORRHOEAE AND/OR C. TRACHOMATIS TESTING (2 Pages).....	23
REFERENCE LABORATORIES (Send-Outs).....	25
RSV & INFLUENZA A & B ANTIGEN TESTING.....	26
SEMINAL FLUID ANALYSIS (2 Pages)	27
SPINAL FLUID	28
SPINAL FLUID - PEDIATRIC	29
SPUTUM CYTOLOGY SPECIMEN - INSTRUCTIONS FOR PATIENT	30
SPUTUM SPECIMEN – INSTRUCTIONS FOR PHYSICIAN OFFICE	31
STOOL TRANSPORT GUIDE.....	32
TECHNIQUE FOR PUNCTURING THE SKIN.....	33
UNUSUAL OR ONE-TIME SPECIMENS	34
URINE COLLECTION (2 Pages)	35
URINE COLLECTION (24-HOUR) - PATIENT INSTRUCTIONS	36
URINE COLLECTION (24-HOUR) / PRESERVATION (2 Pages).....	37

URINE SPECIMEN (CLEAN CATCH) – INSTRUCTIONS FOR PATIENT 39
URINE CULTURE - PRESERVATIVE TUBE INSTRUCTIONS (UCT)..... 40
URINE CYTOLOGY SPECIMEN – INSTRUCTIONS FOR PATIENT..... 41
VENIPUNCTURE PROCEDURE – ADULT (3 Pages) 42
VENIPUNCTURE - PEDIATRIC (4 Pages)..... 45
SPECIAL COLLECTION INFORMATION FOR SPECIMENS SENT TO A REFERENCE LAB (2 pages)..... 49

SPECIMEN COLLECTION - MISC. NOTES ON SPECIMEN COLLECTION

1. Patient questions concerning the need or significance of tests ordered should be directed to the physician.
2. Steps to take for prevention of hematoma:
 - a) ensure the needle fully penetrates the uppermost wall of the vein.
 - b) remove the tourniquet before removing needle.
 - c) apply slight pressure with gauze when bandaging
3. Steps to take for prevention of hemolysis:
 - a) mix specimens with additives gently but thoroughly
 - b) avoid collecting from a site with a hematoma present
 - c) avoid using a needle that is too small
 - d) make sure the needle is fitted securely to the vacutainer holder
 - e) allow alcohol to dry before venipuncture is performed.
4. Timed specimens must be collected within 30 minutes of scheduled time.
5. Use special, metal free collection tubes for heavy metal tests.
6. Order of draw for multiple specimen collection.
 - 1) First: blood culture tubes
 - 2) Second: non-additive tubes (plain red)
 - 3) Third: coagulation tubes (blue top)
 - 4) Fourth: tiger top or gold top
 - 5) Fifth: additive tubes (green, lavender, gray, other)
7. If coagulation testing (PT/PTT/Fibrinogen) is the only test to be collected, draw and discard one 5mL tube first. This will eliminate the possibility of tissue thromboplastin from the venipuncture site adversely affecting the test results.

Note: A blue top tube can be drawn from a central line only if 5 mL “waste” tube is drawn first to get rid of residual heparin.

PATIENT CARE: MEDICAL ASSISTANCE

FAINTING : Lower patient’s head or transfer to bed
Loosen tight clothing
Apply cold compresses to forehead and back of neck
Request assistance of physician to evaluate patient if necessary

NAUSEA: Make patient as comfortable as possible
Instruct patient to breathe deeply and slowly
Apply a cold compress to forehead.

VOMITING: Provide a basin and tissues
Give patient water to rinse out mouth

CONVULSIONS: Prevent patient from injuring him/herself
Do not restrain patient
Off Site: At the Plaza, call 911
In-House: Call x6222 for “Medical Emergency”

NOTE: Incident Report must be completed and forwarded to Supervisor / Lab Manager within 24 hours of occurrence.

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SPECIMEN COLLECTION TUBES

Most Laboratory tests are performed on anticoagulated whole blood, plasma, or serum. Specimens should be refrigerated until placed in the courier box for transport to the Laboratory. Please refer to the individual test section for specific requirements. If frozen serum is required, pour off serum into a plastic vial and freeze. Do not freeze collection tubes.

Special Collection Tubes: Some tests require specific tubes for proper analysis. Please contact the Laboratory prior to patient draw to obtain the correct tubes for metal analysis or other test as identified in the individual test listings.

Mint Green Top Tube (Lithium Heparin): This tube contains Lithium Heparin used for the collection of heparinized plasma or whole blood for special tests. **NOTE: After the tube has been filled, immediately invert the tube several times in order to prevent coagulation.**

Gray Top Tube (Potassium Oxalate / Sodium Fluoride): This tube utilizes potassium oxalate as an anticoagulant and sodium fluoride to preserve glucose in whole blood and for some special chemistry tests. **NOTE:** After the tube has been filled with blood, immediately invert the tube several times to prevent coagulation.

Lavender Top Tube (EDTA): This tube contains EDTA as an anticoagulant and is used for most hematological procedures and a few special chemistry procedures: **NOTE: After the tube has been filled with blood, immediately invert the tube several times in order to prevent coagulation.**












Pink Top Tube (EDTA): This tube contains EDTA as an anticoagulant and is used for most blood bank tests. **NOTE: After the tube has been filled with blood, immediately invert the tube several times in order to prevent coagulation.**

Light Blue Top Tube (Sodium Citrate): This tube contains sodium citrate as an anticoagulant used for collection of blood for coagulation studies. **NOTE: It is critical that the tube be completely filled. The ratio of blood to anticoagulant is critical for valid test time results. The blood will stop flowing into the tube when adequate volume is obtained.** Invert the tube six to ten times immediately after collection to activate the anticoagulant.

Red Top Tube: This tube does not contain any anticoagulant. It is used for collection of serum for selected chemistry and blood bank tests.

Serum Separator Tube (Tiger Top / SST): This tube contains a clot activator and serum gel separator used for various serum chemistry tests. **NOTE: Invert the tube to activate the clotting; let stand for 20-30 minutes before centrifuging for 10 minutes.**

Black Top Tube (Buffered Sodium Citrate & Citric Acid): This tube contains buffered sodium citrate and citric acid used for the collection of whole blood for sed rates. **NOTE: After the tube has been filled, immediately invert the tube several times in order to prevent coagulation.**

General Chemistry Tests		Special Chemistry Tests	Tests on Ice	Other Tests
Mint Green		Need Separate Accession Number	Need Separate Accession Number	Need Separate Accession Number
 <p>AFTP ALB AMYL AST BHBQ B12 BUN CA CISO CEA CL CHOL CO2 CP13 CP7 CK CRE CRP CRPN CKMB/CISO CVE CVP – Vanco peak CVU – Vanco random CVT – Vanco trough DBIL DIG E2 ETOH FE FEB FERR FSH FRT3 FT4 GENP/U/T GLR GGT HCG HDL IBIL K LDH LDLD</p>	 <p>LH LIPA LIVP MG MYGB NA OV25 BNP P04 PROG PROL TPSA TFPS RUBL TBIL TFPS THEO TRIG TOBP/U/T TP TRIG TSH3 TRNF URIC C3 C4 HAPT ASO IGA IGG IGM TIGS PREALB RA TFTS</p>	<p style="text-align: center;">SST (Gold or Speckled)</p>  <p>ACET B12 CORT FOL LI PTH SAL SXHB TEST TT3 PCTC LYME RPR</p> <p style="text-align: center;">Red (Plain no gel)</p>  <p>DIL PHEN TEG VALP ANAB</p>	<p style="text-align: center;">Specimens on Ice</p>   <p style="text-align: center;">Ammonia – Mint Green on ice</p>  <p style="text-align: center;">Ionized Calcium- CAI Dark Green on ice Do Not Spin</p>  <p style="text-align: center;">Lactic Acid- LACK Gray on ice Spin</p>	<p style="text-align: center;">Miscellaneous</p>  <p style="text-align: center;">TRPI</p>  <p style="text-align: center;">CBC A1C RETM PBBC – SEND OUT</p>  <p style="text-align: center;">PT PTT XAUF XALM DIME</p> <p style="text-align: center;">BLACK ESR</p> <p style="text-align: right;">Revised 9-12-18</p>

AMNIOTIC FLUID

General Procedure:

- 1) Testing is performed Monday through Friday.
- 2) The specimen of choice is 3 - 4 mL of amniotic fluid obtained by amniocentesis.
- 3) Immediately after collection, the specimen should be placed in a dark bottle.
- 4) The specimen should be appropriately labeled.
- 5) The requisition form should be properly completed.
- 6) No special additives or preservatives are required.

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ARTERIAL BLOOD GASES

Complete packaged kits for the collection of Arterial Blood Gases are available through Central Services. These kits contain syringe, Heparin, transport bag, etc. Obtain ice from the nursing unit. Arterial Blood Gases are collected by Respiratory Therapy or the Physician in charge. Needle must be removed and syringe capped before the specimen is submitted for analysis.

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BIOPSIES (Tissue other than Bone Marrow)

General Procedure:

- 1) The specimen(s) submitted for routine light microscopy are to be placed promptly in 10% Formalin which is obtained in small bottles from the Histology Department.
- 2) The specimen(s) submitted for additional testing chromosome analysis or flow cytometry are to be submitted either in sterile saline or dry.
- 3) All specimen(s) requesting “Frozen Section” are to be submitted dry.
- 4) Properly labeled specimen(s) are forwarded to the Laboratory with the appropriate requisition forms.

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BLOOD COLLECTION TUBES (2 Pages)

Stopper Color	Volume Draw	Specimen	Additive / Preservative
Red	10ml	Serum Clotted Blood	Sterile Interior. No additive. Silicone Coated Interior. Silicone lubricated stopper.
Red	4.0ml	Serum Clotted Blood	Clot activator. Interior coating: Silicone. Silicone lubricated stopper.
Navy / Royal Blue w/ Blue Label	7ml	Plasma Whole Blood	Na ₂ EDTA 10.5 Trace Element determinations. No interior coating. Silicone lubricated stopper.
Green	3ml	Plasma Whole Blood	Sterile Interior. Net contents per tube: 45 USP unit of Lithium Heparin. No interior coating. Silicone lubricated stopper.
Green	5ml	Plasma Whole Blood	72 USP units of Lithium Heparin. No interior coating. Silicone lubricated stopper.
Green	10ml	Plasma Whole Blood	143 USPS units of Sodium Heparin, No interior coating. Silicone lubricated stopper.
Dark Green	4ml	Plasma Whole Blood	Sufficient Sodium Heparin for 4 mL of blood. Silicone lubricated stopper. 68 USPS units.
Grey	4ml	Plasma Whole Blood	Sodium Fluoride 10 mg. No interior coating. Potassium Oxalate 8mg. Silicone lubricated stopper. 68 USPS units.
Black	4ml	Plasma Whole Blood	1ml of 0.129 Molar (3.8% Buffered Citrate Solution 32.0mg Na ₃ Citrate, 2 H ₂ O and 4.2 mg Citric Acid, 1H ₂ O
Yellow	8.3ml	Whole Blood	Dry natural Rubber; Sterile Interior; 1.7 mL Solution containing 5.95 mg Sodium Polyanetholesulfonate, 0.35%; 14.4 mg Sodium Chloride, 0.85%; no interior coating. Silicone lubricated stopper.
Bactec (Blue)	5-7ml	Standard 10 Aerobic / F Culture	Dry, Natural Rubber; Processed water, 40 mL; Soybean-Casein Digest Broth 3.0%; Yeast Extract, 0.3%; Animal Tissue Digest, 0.01% ; Sucrose 0.1%; Hemin, 0.0005%; Menadione, 0.00005%; Pyridoxal HCl (Vitamin B6), 0.001% ; Sodium Bicarbonate, 0.04%; Sodium Polyanetholsulfonate, 0.035%
Bactec (Yellow)	5-7ml	Standard Anaerobic / F Culture	Dry Natural Rubber; Processed water, 40 ml; Soybean-Casein Digest Broth, 3.0%; Yeast Extract, 0.4%; Animal Tissue Digest, 0.01%; Dextrose, 0.25%; Hemin, 0.0005%; Menadione, 0.00005%; Thiols, 0.10%; Sodium Polyanetholesulfonate, 0.025%
Navy/Royal Blue w/red Label	7 ml	Serum	No additive

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Stopper Color	Volume Draw	Specimen	Additive / Preservative
Bactec (Pink)	1-3ml	Peds Plus / F Culture	Processed water, 40 ml; Soybean-Casein Digest Broth, 2.75%; Yeast Extract, 0.25%; Animal Tissue Digest, 0.10%; Sodium Pyruvate, 0.10%; Dextrose, 0.06%; Sucrose, 0.08%; Hemin, 0.005%; Menadione, 0.00005%; Sodium Polyanetholesulfonate, 0.020%; Pyridoxal HCl (Vitamin B6), 0.001%; Nonionic Adsorbing Resin, 10.0%; Cationic Exchange Resin, 0.6%.
Lavender	3ml	Plasma Whole Blood	Sterile Interior. Net content per tube: 0.068ml of 7.5% (K ₃) EDTA solution (5.1mg). Glycerine lubricated stopper. No interior coating.
Blue	2.7ml (Equivalent to 3.2%)	Plasma Whole Blood	Sterile Interior. Net contents per tube: 0.3ml of 0.105 Molar (3.2%) Buffered Citrate solution (1.41mg, Na ₃ Citrate □ 2H ₂ O and 1.32mg Citric Acid □ 1H ₂ O). Silicone coated interior. Silicone lubricated stopper.
Blue	4.5ml (Equivalent to 3.2%)	Plasma Whole Blood	Sterile Interior. Net contents per tube: 0.5ml of 0.105 Molar (3.2%) Buffered Citrate solution (12.35mg, Na ₃ Citrate □ 2H ₂ O and 2.21mg Citric Acid □ 1H ₂ O).
Black / Red (Tiger top)	10ml	Serum Clotted Blood	Contains: Polymer Barrier Material. Clot activator on Interior Walls. Silicone lubricated stopper
Gold	3.5ml	Serum Clotted Blood	Contains: Polymer Barrier Material. Clot activator on Interior Walls. Silicone lubricated stopper
Microtainer Green Top	Pediatric (0.25 - 0.50ml)	Plasma Whole Blood	Lithium Heparin. 4-16 usp units.
Microtainer Yellow Top	.25 – 0.50	Serum Clotted Blood	Polymer Gel.
Gray / Yellow	10ml	Isolator 10 for culture	Saponin, polypropylene glycol, Sodium Polyanetholesulfonate (SPS)
Microtainer-Purple Top	Pediatric (0.25 - 0.50)	Plasma Whole Blood	K ₂ EDTA
Tan	3ml	Plasma Whole Blood	K ₂ EDTA 5.4mg
Blue / White	2ml	Plasma Whole Blood	9 NC Coagulation Sodium Citrate 3.2%
Yellow	Solution A	Plasma Whole Blood	22.0g/L Trisodium Citrate 8.0g/L Citric Acid 24.5g/L Dextrose
Yellow	Solution B	Plasma Whole Blood	13.2g/L Trisodium Citrate 4.8g/L Citric Acid 14.7g/L Dextrose
Pink	6.0ml	Plasma	K ₂ EDTA 10.8 mg. Silicone lubricated stopper.
Navy/Royal Blue w/ Blue Label	6.0ml	Plasma	Trace Element K ₂ EDTA 10.8 mg
Mint	3.0ml	Plasma	PST Gel Lithium Heparin, 51 units. Silicone lubricated stopper.
Red/Grey Discard Tube	3.0ml	Whole Blood	No additive/interior coating. Silicone lubricated stopper.

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BLOOD CULTURE COLLECTION

DIRECT DRAW OPTIONS

A. BUTTERFLY: Direct draw into blood culture bottles with vacutainer adapter on bottle. Use marks on bottle to judge blood volume.

B. SYRINGE: Needle & needleless option with transfer to blood culture bottles.

VOLUME REQUIRED: Aerobic (blue cap) 8-10 mL
Anaerobic (yellow cap) 5-7 mL

BOTTLE TOP PREP: Wipe rubber top with 70% alcohol pad.

SKIN PREP: 70% alcohol prep - vigorous scrub
Providine-iodine - 1-2 minutes skin contact minimum before venipuncture.

BOTTLE: New shape with fluorescent indicator to be used in fully automated blood culture incubator/reader - Bactec 9240

Bottle shape and volume markings allow direct draw using the butterfly / vacutainer system for a faster and higher quality result. May be obtained from Microbiology Lab.

PEDIATRIC BLOOD CULTURE PROCEDURE

VOLUME NEEDED: Optimal 1-2 mL
Minimum 0.5 mL

SAMPLE COLLECTION: Syringe
Butterfly blood collection set - Direct draw through tubing to Peds Plus culture bottle.
USE MARKS ON BOTTLE TO JUDGE VOLUME.

SKIN PREP: 70% alcohol followed by providine-iodine.

BOTTLE TOP PREP: Remove flip top cap. Wipe rubber stopper with alcohol. Keep alcohol pad on cap top until ready to inoculate.

BOTTLE: New shape with fluorescent indicator to be used in fully automated blood culture incubator/reader - Bactec 9240. May be obtained from Microbiology lab.

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BODY FLUIDS COLLECTION (2 Pages)

PLEURAL / PERICARDIAL

- Cell Count - One purple top vacutainer tube.
- Microbiology - 10-50 mL fluid in a sterile red top vacutainer tube, sterile urine cup or a sterile capped syringe; plus inoculate aerobic and anaerobic blood culture bottles as volume permits.
- Chemistry - One red top and one green top vacutainer tube.
- Cytology - Fresh fluid (>10 mL) submitted in the vacuum collection bottle. After collection, add 5 units of heparin per mL of fluid.

Note: If <10 mL fluid available, call Cytology for instructions.

*** A separate serum sample should also be obtained for Total Protein and LDH**

The most reliable tests for differentiating between the transudates and exudates are the simultaneous analysis of pleural fluid and serum for Total Protein and LDH. Cholesterol and/or Total Bilirubin concentration ratios (serum vs fluid) are recommended when the Protein and LDH levels in the pleural fluid are equivocal.

PERITONEAL / ASCITES / PARACENTESIS

- Cell Count - One purple top vacutainer tube.
- Microbiology - 10-50 mL fluid in a sterile red top vacutainer tube, ~~or~~ a sterile urine cup or a sterile capped syringe; plus inoculate aerobic and anaerobic blood culture bottles as volume permits.
- Chemistry - One red top and one green top vacutainer tube.
- Cytology - Fresh fluid (>10 mL) submitted in the vacuum collection bottle. After collection, add 5 units of heparin per mL of fluid.

***A separate serum sample should also be obtained for Albumin, Total Protein and LDH**

The serum / ascites albumin concentration gradient is useful in differentiating transudates from exudates. The serum /peritoneal fluid ratio for Total Protein and LDH provide a reasonably accurate guide in differentiating transudates and exudates.

SYNOVIAL / JOINT FLUID

- Cell Count and/or Crystals - One purple top vacutainer tube.
- Microbiology - 0.5-10 mL fluid in a sterile red top vacutainer tube, sterile urine cup or a sterile capped syringe; plus inoculate aerobic and anaerobic blood culture bottles as volume permits.
- Chemistry - One red top and one green top Vacutainer tube.

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CEREBROSPINAL FLUID*

Tube #	Test	Optimal Volume (cc's)
1	Cell Count and Differential, Glucose, Total Protein, VDRL	1.0
2	Microbiology (C&S, Gm Stain, Antigen Testing)	1.0
3	Cytology (fix with an equal volume of ETOH and refrigerate).	1.0
4	Cell count and differential, additional studies if needed.	1.0

*For specimens with low volume, the Laboratory will contact the ordering department to prioritize testing. If this fails, the laboratory will prioritize testing based upon available information.

AMNIOTIC FETAL LUNG MATURITY - Uncontaminated amniotic fluid.

CERVICOVAGINAL SECRETION - Fetal Fibronectin should only be collected with an Adeza Biomedical Specimen Collection Kit.

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BONE MARROW ASPIRATION AND BIOPSY

General Procedure:

- 1) The Laboratory must be contacted for scheduling the availability of a lab aide.
- 2) A bone marrow tray is obtained from Sterile Processing Department.
- 3) Proper consent forms are completed prior to the procedure.
- 4) The lab aide is called when the physician is at the patient's bedside and ready to begin the procedure.

A culture bottle will be provided by the Laboratory, if a culture is desired.

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CREATININE CLEARANCE

1. The general procedure for collection of urine is followed.
2. Test orders are placed in HIS for urine and blood specimens.

NOTE: The patient should be advised to observe all dietary restrictions for the analysis to be performed (alcohol, vitamins, specific food and other medication) for at least 24 hours before starting the collection and during the collection period.

It is not necessary to restrict fluids during these collections. Permit the patient to drink fluids to promote good urinary output.

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CYTOLOGY

FIXATIVE

95% ETOH

Bronchial brush smears, Tzanck smears, scrapes of any lesion, etc., are immediately immersed in 95% ETOH and not allowed to air dry. Containers are available in Cytology

50% ETHYL ALCOHOL (ETOH)

Add equal volume of 50% ETOH or Saccamanno fluid to all fluids such as sputum, urine, csf and cyst aspirates. Also, fluid collection in vacuum collection container do not require fixation. All body cavity fluids should have 5 units of sodium heparin per ml. of fluid added as an anticoagulant.

THIN PREP CYTOLOGY MATERIALS

Sampling devices and PreservCyt Thin Prep specimen collection vials are obtained from the Cytology laboratory. Refer to the Alphabetical Test list to locate complete collection instructions.

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GLUCOSE SCREENING – GESTATIONAL (PREGNANT FEMALES)

PATIENT INSTRUCTIONS: RETURN TO THE LAB @ _____ *

1. Your healthcare provider has requested that you have a Gestational Glucose Screening Test. This is a blood test that will give your healthcare provider an idea of how well your body breaks down glucose after drinking a glucose solution.
 2. You will be given 50 gms glucose to drink. Drink the glucose within 5 minutes. The phlebotomist will draw your blood one-hour post dose.
- IF YOU FEEL ILL OR VOMIT DURING THE TEST, PLEASE TELL THE PHLEBOTOMIST.
 - FASTING IS NOT REQUIRED – TESTING CAN OCCUR WITHOUT REGARD TO THE TIME OF THE LAST MEAL OR TIME OF DAY.
 - PLEASE DO NOT SMOKE DURING THE TEST.
 - PLEASE REMAIN IN OUR WAITING ROOM AND AT REST UNTIL THE ENTIRE TEST PROCEDURE IS COMPLETE.
 - YOU MAY DRINK WATER, BUT HAVE NO OTHER FOOD OR BEVERAGE DURING THE TEST.
 - PLEASE DO NOT LEAVE THE PREMISES DURING THE TESTING PROCEDURE.

*** Return to the Blood Draw Area within 60 minutes, \pm 5 minutes. Failure to return promptly could result in cancellation of test.**

**** TESTING PERFORMED AT CVPH AND CPI PLAZA ****

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GLUCOSE TOLERANCE TEST - GESTATIONAL (PREGNANT FEMALES)

PATIENT INSTRUCTIONS:

1. Your healthcare provider has requested that you have a Glucose Tolerance Test done. This is a series of blood tests that will give your healthcare provider an idea of how well your body breaks down glucose after drinking a glucose solution.
 2. Prior to being given glucose to drink, the phlebotomist will draw your blood and send it to the lab to be analyzed.
 3. When the result is called to the phlebotomist, and if the value is acceptable, you will then be given approximately a cupful of a glucose solution to drink within 5 minutes.
 4. Three more blood glucose levels will be drawn at one hour, two hours and three hours after ingesting the 100 gms oral glucose solution.
-
- PLEASE BE FASTING FOR AT LEAST 10 HRS. (YOU MAY ONLY DRINK WATER DURING THE FAST)
 - PLEASE REMAIN IN WAITING ROOM. DO NOT LEAVE PREMISES DURING THE ENTIRE TESTING PROCEDURE.
 - IF YOU FEEL ILL OR VOMIT DURING THE TEST, PLEASE TELL THE PHLEBOTOMIST
 - PLEASE DO NOT SMOKE DURING THE TEST
 - PLEASE REMAIN AT REST DURING THE TEST
 - YOU MAY DRINK WATER BUT HAVE NO OTHER FOOD OR BEVERAGE DURING THE TEST

**** YOU MAY HAVE THIS TEST DONE ONLY AT THE CVPH CAMPUS ****

Revised: 9/4/15

GLUCOSE TOLERANCE TEST - STANDARD ORAL (NON PREGNANT)

PATIENT INSTRUCTIONS:

1. Your healthcare provider has requested that you have a Glucose Tolerance Test done. This is a series of blood tests that will give your healthcare provider an idea of how well your body breaks down glucose after drinking a glucose solution.
 2. Prior to being given 75 gms glucose to drink, the phlebotomist will draw your blood and send it to the lab to be analyzed.
 3. When the result is called to the phlebotomist, and if the value is acceptable, you will then be given approximately a cupful of a glucose solution to drink within 5 minutes.
 4. One more blood glucose level will be drawn two hours after you drink the solution.
- PLEASE BE FASTING FOR AT LEAST 10 HRS. (YOU MAY ONLY DRINK WATER DURING THE FAST)
 - PLEASE REMAIN IN WAITING ROOM. DO NOT LEAVE PREMISES DURING THE ENTIRE TESTING PROCEDURE.
 - IF YOU FEEL ILL OR VOMIT DURING THE TEST, PLEASE TELL THE PHLEBOTOMIST
 - PLEASE DO NOT SMOKE DURING THE TEST
 - PLEASE REMAIN AT REST DURING THE TEST
 - YOU MAY DRINK WATER BUT HAVE NO OTHER FOOD OR BEVERAGE DURING THE TEST

**** YOU MAY HAVE THIS TEST DONE ONLY AT THE CVPH CAMPUS ****

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GLUCOSE (ORAL) & GESTATIONAL TOLERANCE- CVPH STAFF INSTRUCTIONS

GESTATIONAL TOLERANCE (GTT3) AND ORAL GLUCOSE TOLERANCE (GT2)
(PREGNANT) 100 GMS (NON-PREGNANT) 75 GMS

**** PATIENT MAY NOT LEAVE PREMISES DURING ANY GLUCOSE TOLERANCE OR SCREENING ****

A.) GESTATIONAL AND STANDARD ORAL GLUCOSE TOLERANCE

BEFORE THE FASTING SPECIMEN IS DRAWN, THE PHLEBOTOMIST SHOULD VERIFY THAT:

1. THE PATIENT THAT PRESENTS FOR THE FULL TOLERANCE TEST HAS FASTED FOR AT LEAST 10 HOURS AND NO MORE THAN 16 HOURS BEFORE THE TEST. ONLY WATER CAN BE CONSUMED DURING THE FAST.
2. THE PATIENT UNDERSTANDS HE/SHE SHOULD REMAIN AT REST DURING THE TEST AND REFRAIN FROM SMOKING.
3. THE PATIENT UNDERSTANDS THAT HE/SHE MAY DRINK WATER BUT CAN HAVE NO OTHER FOOD OR BEVERAGES DURING THE TEST.
4. THE PATIENT UNDERSTANDS THAT SUBSEQUENT SPECIMEN COLLECTION WILL BE NECESSARY AND THE PATIENT IS TOLD THE TIME FOR SUBSEQUENT SPECIMEN COLLECTION.

B.) GESTATIONAL SCREENING ONLY (PREGNANT)

- THE PATIENT THAT PRESENTS FOR THE SCREENING TEST (GLU1) WILL BE GIVEN A 50 GRAM GLUCOSE LOAD WITHOUT REGARD TO THE TIME OF THE LAST MEAL OR THE TIME OF DAY.

PHLEB QUICK GUIDE

GLU1 (PREGNANT) **
50 GMS

GT2 (NON-PREGNANT) *
75 GMS

GTT3 (PREGNANT) *
100 GMS

* Testing only performed at CVPH

** Testing performed at CVPH and CPI Plaza

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HAIR, SKIN, AND NAILS FOR FUNGAL CULTURE - COLLECTION INSTRUCTIONS

The diagnosis of fungal infections is dependent upon the proper collection and transport of specimens to the clinical laboratory. The following instructions are for the collection of hair, skin and nails for culture.

MATERIALS NEEDED:

Gloves	70% alcohol
Scalpel blade or microscope slide	Sterile Container
Forceps	Slide Holder

COLLECTION OF HAIR FOR CULTURE:

1. Put on gloves.
2. With forceps, collect at least 10 to 12 affected hairs with base shaft intact.
3. Place hairs in a sterile container.
4. Transport to lab at room temperature within 24 hours of collection.

COLLECTION OF NAILS FOR CULTURE:

1. Put on gloves.
2. Wipe the nail off with 70% alcohol using gauze (not cotton balls).
3. Clip away a generous portion of the affected nail and collect material or debris from under the nail. (Minimum volume: enough material to cover the head of a thumbtack)
4. Place material in a sterile container.
5. Transport to lab at room temperature within 24 hours of collection.

COLLECTION OF SKIN FOR CULTURE:

1. Put on gloves.
2. Clean the affected area with 70% alcohol using gauze (not cotton balls).
3. Gently scrape the surface of the skin at the active margin of the lesion using a scalpel blade or microscope slide. **Do not draw blood!** (Minimum volume: enough material to cover the head of a thumbtack)
4. Collect the scrapings in a sterile container. If specimen is to be submitted between glass slides, tape the slides together and place in a slide holder.
5. Transport to lab at room temperature within 24 hours of collection.

SAFETY NOTE: Scalpel blade should be properly discarded in a “sharps” container. **Do not** send blade to the lab.

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N. GONORRHOEAE AND/OR C. TRACHOMATIS TESTING (2 Pages)
(Cobas Amplified DNA Method)

1. **Endocervical Specimens:**
 - A. Use white shaft swab (provided in collection kit) to remove excess mucous and exudates from exocervix.
 - B. Insert second white shaft collection swab (provided in collection kit) into the endocervical canal.
 - C. Rotate swab for 10-30 seconds using enough pressure to obtain cells from all surfaces of the endocervical canal. Withdraw swab carefully avoiding contact with vaginal surfaces.
 - D. Place swab in the transport tube provided and snap off swab at the score line so that the swab fits into the closed tube. Close cap tightly and label tube with patient name.
 - E. The presence of two swabs in the transport tube will result in rejection of specimen.

2. **Urine Specimens:**
 - A. Patient should not have urinated for at least 1 hour prior to specimen collection.
 - B. Direct patient to provide first-catch urine (approximately 20-30 ml of initial urine stream) into urine collection cup free of any preservatives. Collection of larger volumes of urine may result in specimen dilution that may reduce test sensitivity.
 - C. Female patients should not cleanse labial area prior to providing specimen.
 - D. Make sure collection cup cap is closed tightly and labeled with patient name.
 - E. Urine (2 ml) can be transferred into Aptima urine transport tube (stable for 30 days) if available or sent in urine collection cup (must be transferred within 24 hours of collection).

3. **Preparation for Transport:**
 - A. Fully insert one white shaft swab into the Cobas transport tube.
 - B. Snap off shaft at score line or cut shaft to fit tube. Use care to avoid splashing contents.
 - C. Cap tube tightly.
 - D. For urine, transfer urine into Cobas urine specimen transport tube using the provided disposable pipette. The correct volume of urine has been added when the fluid level is between the two black lines on the tube label. (Primary urine collection cup can also be sent.)
 - E. Cap tube tightly.

- F. Transport swab tube to the laboratory at 2° to 30°C. Store at 2° to 30°C and test within 90 days.
- G. Urine sent in a collection cup must be transported to the laboratory at 2° to 30°C, and transferred within 24 hours of collection into the Cobas urine transport tube. Transferred specimens are stable at 2° to 30° for up to 12 months.

NOTE: Specimens collected with this system cannot be used for culture. Only Cobas white-shafted swabs should be used for specimen collection.

NOTE: GC/Chlamydia testing can be done from the Thin Prep (Pap) Vial.

NOTE: HPV testing can also be done from the Thin Prep (Pap) Vial.

Revised: 9/4/15

REFERENCE LABORATORIES (Send-Outs)

Certain tests are not performed in the CVPH Laboratory. They are forwarded to a reference laboratory. These analyses must be requested through the Clinical Laboratory. "Send-out" analysis is routinely sent to pre-selected and approved reference laboratories.

These laboratories are fully accredited by the College of American Pathologists. They are also approved to provide laboratory services under the Medicare Programs and are licensed to operate in interstate commerce by the Center for Disease Control. Consult the Reference Laboratory Directory, available in the Laboratory at Champlain Valley Physicians Hospital Medical Center, and appropriate Supervisor for further information.

For specimens sent to reference labs, the Laboratory follows all requisition, collection and handling specifications of the reference laboratory.

Revised: 9/4/15

RSV & INFLUENZA A & B ANTIGEN TESTING

1. **Availability:**
 - A. Outpatients are collected in the physician's office.
 - B. Emergency Department patients are collected by Physician or ECC staff.
 - C. Inpatients are collected by Respiratory Therapy staff.

2. **Planning:**

Have on hand the following materials:

 - A. 3cc syringe.
 - B. 12" butterfly IV tubing.
 - C. Viral transport media (obtained from Microbiology).
 - D. Powder free gloves.
 - E. Laboratory requisition
 - F. Plastic bag with ice in it if delivery to lab is >1 hour.
 - G. Scissors

3. **Implementation:**
 - A. Explain procedure to patient.
 - B. Check child's I.D. bracelet.
 - C. Have help on hand if it is necessary to restrain child.
 - D. Take butterfly tubing and cut tubing where it meets the hub of the butterfly.
 - E. Draw up 1cc of N/S into syringe and remove needle.
 - F. Attach the butterfly tubing to syringe.
 - G. Have someone tilt child's head slightly backward.
 - H. Gently insert butterfly tubing in the nostril to nasal pharyngeal area and flush the area with the N/S in the syringe.
 - I. Immediately but gently pull back on the syringe plunger to aspirate the fluid back into the syringe.
 - J. Remove the tubing from the nostril.
 - K. Aspirate transport media into syringe to mix with N/S washing and return all fluid to the transport media container. Make sure cover is secure when completed.
 - L. Label the media vial with patient's name, room number, physician and medical record number. (May use stamper plate).
 - M. Place transport media vial in the plastic bag containing ice and bring it immediately along with the requisition to the Central Processing Area in the laboratory. Delivery to the lab within 1 hour does not require transport on ice.

NOTE: Flocked naso-pharyngeal swabs will be accepted in lieu of the naso-pharyngeal washing sample.

Revised: 9/4/15

SEMINAL FLUID ANALYSIS (2 Pages)

SCHEDULING INSTRUCTIONS

1. Obtain a labeled collection container from your physician or the Laboratory.
2. **Call the Laboratory at 562-7413 to make an appointment** for the test. Specimens are accepted for this test **Monday through Friday, 6:30AM to 12:00 Noon. No weekends or Holidays.**
3. Call 562-2273 (562-CARE) to pre-register (this is not required but strongly recommended to save you time).
4. Bring specimen (see collection instructions) directly to the Laboratory on the **3rd floor Medical Arts Building at CVPH, main campus only.**
5. After specimen has been given to the Lab, proceed to Patient Registration. (Even if you have pre-registered, a short visit to this department is necessary to complete the registration process.)

COLLECTION INSTRUCTIONS

1. Abstain from sexual activity (including masturbation) for 2-3 days (48-72 hours) and no more than 5 days prior to specimen collection.
2. Obtain the semen sample by masturbating directly into a sterile container, provided either by your doctor or the Laboratory. Be sure and collect the **entire** sample. Avoid the use of lubricants to prevent specimen contamination.
3. Put your full name, date of birth, and date and time of collection and date of last ejaculation on the label.
4. Bring specimen directly to the laboratory within one hour of collection (1/2 hour if possible). The specimen must be examined fresh or else sperm may die and no useful information will be obtained.

NOTE: The specimen must be maintained at body temperature during transport. You may do this by keeping it next to your body, in a shirt pocket, for example. Extreme heat or cold may change the test results.

LAB INFORMATION – Please complete and bring to lab with specimen

NAME: _____

COLLECT DATE: _____ COLLECT TIME: _____

DATE OF LAST EJACULATION: _____

WAS THE ENTIRE SAMPLE COLLECTED: YES _____ NO: _____

CONTAINER: GLASS: _____ PLASTIC: _____

WAS THE SAMPLE COLLECTED BY EJACULATION: YES _____ NO: _____

Revised: 9/4/15

SPINAL FLUID

Spinal fluids submitted to the Laboratory for analysis require special care in handling. The fluid is obtained by a surgical procedure that involves not only discomfort to the patient, but also a certain amount of risk of complication from the procedure. It is, therefore, necessary for all personnel handling the specimens to be constantly aware of the need for extreme care in preserving the usefulness of the specimen.

General Procedure:

- 1) Test orders are placed in HIS.
- 2) The specimen(s) is brought to the Laboratory immediately following the spinal tap.
- 3) All CSF specimens ordered for culture will have a gram stain done STAT.

Revised: 9/4/15

SPINAL FLUID - PEDIATRIC

All pediatric cerebrospinal fluid (CSF) specimens are cultured routinely whether requested or not. If a specimen of less than 0.5 ml of CSF is obtained, the physician is consulted concerning his/her testing priorities.

Revised: 9/4/15

SPUTUM CYTOLOGY SPECIMEN - INSTRUCTIONS FOR PATIENT

Thank you for choosing Champlain Valley Physicians Hospital for your laboratory test.

You can help us to do the best work possible for you by following these instructions when collecting your **SPUTUM CYTOLOGY** specimen.

1. You will receive one specimen container containing Saccomanno fluid for each Sputum Cytology test your doctor has ordered.
2. Just after waking in the morning, rinse your mouth with water.
3. Cough forcefully and vigorously to raise a deep coughed specimen from the lungs. You may expectorate into an ordinary disposable cup for convenience.
4. Add the deep coughed specimen to the specimen container (saliva is unsatisfactory.)
5. Label the container with your name, date collected, your date of birth, your doctor's name and place it in the refrigerator.
6. Collect one specimen each morning until you have the number your doctor ordered, then return all of them to the laboratory in one trip.

If you have any questions regarding the collection of your specimen, please call the Cytology Laboratory at (518) 562-7417, between the hours of 8:00AM and 4:30PM.

Thank you very much for your close attention to this procedure.

Revised: 9/4/15

SPUTUM SPECIMEN – INSTRUCTIONS FOR PHYSICIAN OFFICE

1. The patient should be instructed to expectorate deep from the lungs into a sterile specimen container with a tight-fitting lid. Saliva is unsatisfactory as specimen material. Patients should avoid as much as possible adding saliva to the sputum specimen.
2. 5-10 mL of a single early morning specimen is recommended. Small volumes can be accepted, even for mycobacterial culture. A few drops of purulent material can be accepted for routine culture / gram stain. A minimum of 2 mL is needed for mycobacterial culture. Other volume exceptions should be referred to the Microbiology Supervisor.
3. All expectorated specimens will be evaluated microscopically for the presence of saliva. Unacceptable specimens will be rejected and a new specimen will be required.

Revised: 9/4/15

STOOL TRANSPORT GUIDE

Test Type	Preferred Transport	Comments
O & P	PVA (blue or gray cap) & Formalin (pink cap)	Can include Cryptosporidium exam if ordered.
Giardia Ag	Formalin only (pink cap)	
CDIF (Clostridium difficile)	Unpreserved stool. (All transport types will be rejected)	Submit in sterile / clean container (i.e., urine cup)
Stool Culture	Cary Blain Transport (orange cap)	No swabs if Campylobacter ordered. Must indicate special request for pathogenic E. coli

Revised: 9/4/15

TECHNIQUE FOR PUNCTURING THE SKIN

FIGURE 2
TECHNIQUE FOR PUNCTURING THE SKIN

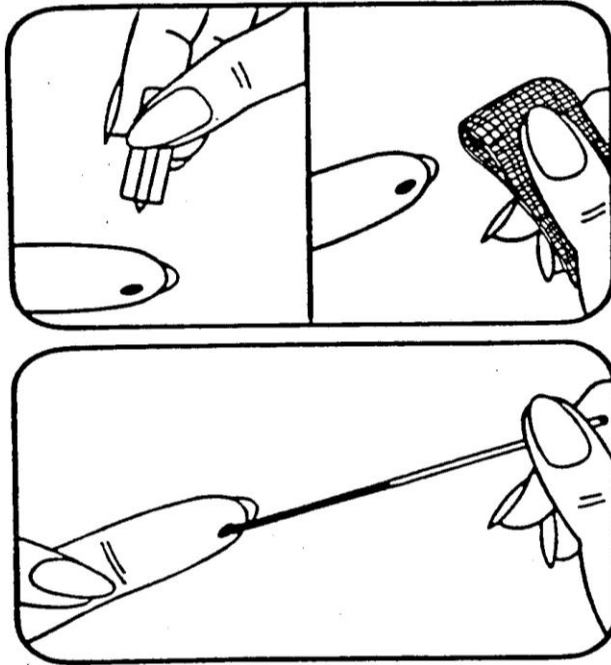
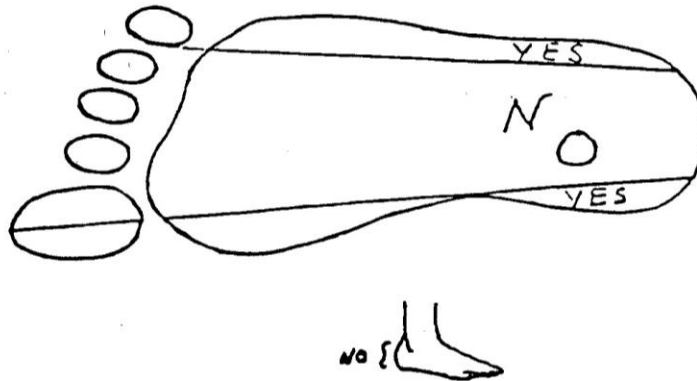


FIGURE 3
Recommendation for Heel Skin Puncture in Newborn Infants



1. Perform punctures on the most medial or most lateral portion of the plantar surface (outside of the lines on the diagram).
2. Puncture no deeper than 2.4 mm.
3. Do not perform punctures on the posterior curvature of the heel.
4. Do not puncture through previous sites which may be infected.

Revised: 9/4/15

UNUSUAL OR ONE-TIME SPECIMENS

Specimens collected by surgical or other invasive techniques or collected by methods that result in unusual patient discomfort are considered one-time; that is, repeating the procedure would be of such difficulty as to be detrimental to patient care.

In order to safeguard these “special specimens”, the Laboratory saves them under refrigeration, or by other appropriate means, for at least 24-hours. In this manner, errors of omission in requesting or in performing tests are minimized.

Revised: 9/4/15

URINE COLLECTION (2 Pages)

CVPH provides 24-hour urine collection containers. Nursing units can call the Laboratory at ext. 7401 for a collection container.

- Whenever a urine preservative must be used, advise the patient in advance of any potential hazards that might arise from inadvertent spillage, particularly if the preservative is acid. The container must be kept out of reach of children.
- Instruct the patient to discard the first morning specimen and to record the date and time of voiding on the urine container.
- The patient should collect all subsequent urine voided for the remainder of the 24 hours.
- Collect the first morning specimen on day two at the same time as recorded on day one. Record the date and time on the urine container.
- Keep the urine refrigerated or chilled for the full duration of the collection period.
- Inpatient population – bring the urine container to the Laboratory as soon as possible following the last collected specimen and place it in the Laboratory hall refrigerator in the appropriate section.
- The urine container is labeled as follows:
 - a. Patient's full name and DOB
 - b. Date & Time collection began
 - c. Date & Time collection completed
 - d. Patient's room number (Inpatients)
 - e. Name of test to be performed
 - f. Physician / Health Care Provider
 - g. Medical record number (Inpatients).
 - h. Height / weight for creatinine clearances.

RANDOM CLEAN CATCH COLLECTIONS: For routine analysis and urine culture, provide the patient with a cleansing towelette and instruct how to clean the external areas of the genital organs. Instruct the patient to start urinating directly into the toilet; stop, position the container and collect the remaining urine, and to not touch the container to the genital area.

NOTE: See Patient Instructions for Clean Catch Urine Specimens

The specimen should be capped, labeled and delivered to the Laboratory as soon as possible (inpatient) or refrigerated until courier pickup time.

Revised: 9/4/15

URINE COLLECTION (24-HOUR) - PATIENT INSTRUCTIONS

Your doctor has requested a test that requires a 24-hour URINE COLLECTION.

Please follow these instructions for the collection.

1. Do not void directly into the container; use the urine cup provided to add to the large 24-hour collection container.
2. Consult your physician before discontinuing any medications you are currently taking.
3. Avoid alcoholic beverages and limit caffeine for at least 24 hours prior to the start of the collection and during the collection.
4. Do not exceed your normal intake of liquids during the day before and during the collection period, unless instructed by your doctor to do so.
5. Some collection containers may have preservatives in them containing strong acid. Do not dispose of the preservative. Keep the container out of the reach of children and **avoid contact with the preservative. In case of skin contact, rinse exposed area well with cool water.**
6. The 24-hour collection period begins when you wake up in the morning and empty your bladder. Do not save the first morning specimen. Do write the “start” date and time on the 24-hour collection container. Collect all urine, day and night, for the next 24-hour period. The final collection will be at the same time on the next morning. **Write the “end” date and time on the 24-hour collection container.**
7. Keep the urine collection container cool at all times by refrigerating or keeping it on ice.
8. Return the collection container as soon as possible to the CVPH Laboratory Reception Desk. Be sure the start and end date/time are recorded on the label on the container.
9. If your doctor orders a CREATININE OR UREA CLEARANCE: A blood specimen must be drawn within 24 hours of the urine collection. Your HEIGHT and WEIGHT must be recorded on the 24-hour collection container before returning the container to the Laboratory.

If you have any questions, please call the Laboratory at 562-7400. Thank you.

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URINE COLLECTION (24-HOUR) / PRESERVATION (2 Pages)

Revised: 9/4/15

TEST ORDERED	PRESERVATIVE
Aldosterone	Refrigeration
Amino Acids (Screen or Panel)	Refrigeration
Aminolevulinic Acid	Refrigeration
Arsenic, Total	Refrigeration
Calcium	Refrigeration
Catecholamines, Fractionated	Refrigeration
Chloride	Refrigeration
Chromium	Refrigeration
Citrate	Refrigeration
Copper	Refrigeration
Cortisol, Free	Refrigeration
Creatinine	Refrigeration
Creatinine Clearance	Refrigeration
Cystine	Refrigeration
Glucose, Quant.	Refrigeration
5-HIAA	Refrigeration
Heavy Metals	Refrigeration
Histamine	Refrigeration
Homovanillic Acid	Refrigeration
17-Hydroxycorticosteroids	Refrigeration
Hydroxyproline, Free or Total	Refrigeration
Iodine, Free	Refrigeration
17-Ketosteroids, Fractionated	Refrigeration
Kidney Stone Formation	Refrigeration
Lead	Refrigeration
Magnesium	Refrigeration
Manganese	Refrigeration
Metanephrines, Fractionated	Refrigeration

TEST ORDERED	PRESERVATIVE
Mercury	Refrigeration
1 or 3-Methylhistidine	Refrigeration
Microalbumin	Refrigeration
Nitrogen	Refrigeration
Oxalate	Refrigeration
Phenylalanine	Refrigeration
Phosphorus	Refrigeration
Porphobilinogen Quant.	Refrigeration
Porphyrins, Fractionated	Refrigeration
Potassium	Refrigeration
Protein, Total	Refrigeration
Protein Electrophoresis	Refrigeration
Sodium	Refrigeration
Thallium	Refrigeration
Urea	Refrigeration
Urea Clearance	Refrigeration
Uric Acid	Refrigeration
Vanillylmandelic Acid (VMA)	Refrigeration

Revised: 9/4/15

URINE SPECIMEN (CLEAN CATCH) – INSTRUCTIONS FOR PATIENT

A. Female

- 1) Wash your hands thoroughly with soap.
- 2) Open sterile package containing the plastic cup. Open the foil package containing the clinipad antiseptic towelette.
- 3) Separate the lips of the vagina with the thumb and index finger of the left hand, using an upward and backward motion.
CAUTION: Do not allow the lips of the vagina to come together again until after the urine specimen has been collected.
- 4) With the right hand, using the clinipad antiseptic towelette, wipe with a downward motion over the vagina. Repeat this procedure four (4) times.
- 5) Start urinating into the toilet and then catch the remainder of the urine in the plastic cup. Place the cap on the container without touching its under side.
- 6) Discard the towelette by placing it in a paper towel and then into waste container provided.
CAUTION: Be sure the cap is firmly in place before you leave.

B. Male (circumcised)

- 1) Wash your hands thoroughly with soap.
- 2) Open sterile package containing the plastic cup. Open the foil package containing the clinipad antiseptic towelette.
- 3) Thoroughly clean the end of the penis with the clinipad antiseptic towelette.
CAUTION: Do not touch the end of the penis until after the urine specimen has been collected.
- 4) Start urinating into the toilet and then catch the remainder of the urine in the plastic cup. Place the cap on the plastic cup without touching its underside.
- 5) Discard the towelette by placing it in a paper towel and then into waste container provided.
CAUTION: Be sure the cap is firmly in place before you leave.

C. Male (uncircumcised)

- 1) Wash your hands thoroughly with soap.
- 2) Open sterile package containing the plastic cup. Open the foil package containing the clinipad antiseptic towelette.
- 3) Retract the foreskin completely.
- 4) Thoroughly clean the end of the penis with the clinipad antiseptic towelette.
CAUTION: Do not touch the end of the penis until after the urine specimen has been collected.
- 5) While holding the foreskin retracted, start urinating into the toilet and then catch the remainder of the urine in the plastic cup. Place the cap on the plastic cup without touching its underside.
- 6) Discard the towelette by placing it in a paper towel and then into waste container provided.
CAUTION: Be sure the cap is firmly in place before you leave.

Revised: 9/4/15

URINE CULTURE - PRESERVATIVE TUBE INSTRUCTIONS (UCT)

1. Have patient urinate into a sterile container using instructions for clean catch urine.
2. Immediately transfer 5 to 10 mls of urine into the tube and recap tightly. (Adding less than 5 mls of urine may result in loss of viability of bacteria)
3. Label with patient's name, date and time of collection.
4. Specimen is ready to be transported or stored for up to 72 hours at room temperature.

This specimen is acceptable for both urinalysis and urine culture.

Revised: 9/4/15

URINE CYTOLOGY SPECIMEN – INSTRUCTIONS FOR PATIENT

Thank you for choosing Champlain Valley Physicians Hospital for your laboratory test.

You can help us to do the best work possible for you by following these instructions when collecting your URINE CYTOLOGY specimen.

1. You will receive one specimen container containing Saccomanno fluid for each Urine Cytology test your doctor has ordered.
2. Collect your specimen from the second morning voided urine. You may void into an ordinary disposable cup for convenience.
3. If necessary, you may drink one glass of water every 30 minutes for three hours until you are able to collect a specimen.
4. Add the specimen you have collected to the specimen container.
5. Label the container with your name, date collected, your date of birth, your doctor's name and place it in the refrigerator.
6. Collect one specimen each morning until you have the number your doctor ordered, then return all of them to the laboratory in one trip. If your doctor has requested a frequency other than daily, this will be accepted.

Please consult your doctor if you are unable to void after taking the steps described above.

If you have any questions regarding the collection of your specimen, please call the Cytology Laboratory at (158) 562-7417, between the hours of 8:00AM and 4:30PM.

Thank you very much for your close attention to this procedure.

Revised: 9/4/15

VENIPUNCTURE PROCEDURE – ADULT (3 Pages)

Purpose

To provide instruction for the proper collection of patient blood specimens.

Supplies Required

- Collection vacutainer tubes
- Tourniquet (Latex/Latex Free)
- Alcohol pad, betadine swabs (for blood cultures)
- Disposable vacutainer holder
- Lancet – pediatric collection
- Microtainer – pediatric collection
- Gloves
- Butterfly (winged infusion set)
- Safety needles
- Antibacterial hand disinfectant

Procedure

1. Wash your hands and wear gloves when working with a patient. Wash hands and change gloves between each patient. Antibacterial hand disinfectant may be used when handwashing is unavailable.
2. The phlebotomist will use two patient identifiers before drawing blood.
 - a) **Inpatient:** Verify the patient's name and Medical Record # on ID bracelet, with draw list and/or labels. Proper identification of patient is crucial. Conscious patients are asked for their full name and date of birth. Compare this to the doctor's orders. While it is always preferred that patients state their names, if a patient is unable to do so, both identifiers can come from the patient's wristband. Having a nurse or family member identify the patient is another option.
 - b) **Outpatient:** Ask the patient a direct question, "What is your name, sir/madam?" and "What is your date of birth?" Compare the information stated by the patient with the information on the computer labels or with the requisition slip. Family member or caregiver may also verify the patient's identity.
3. Position the patient's arm straight from the shoulder to wrist, resting on the arm of the chair.
4. Verify correct tubes are selected and supplies are within reach.
5. Ask the patient if they are allergic to latex or if they are on blood thinner/aspirin therapy.
6. Ask the patient to close his/her hand gently. Avoid a clenched fist or vigorous pumping of the hand.

Note 1: Areas to avoid when selecting a site:

- a) Extensively scarred area
- b) Hematoma area
- c) Side where a mastectomy was performed
- d) Cannula, fistula vascular graft arm

Note 2: Check inpatient rooms for possible posted isolation or specific blood draw restrictions before and after entering patient room.

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7. Palpate and trace the path of veins with your index finger. Veins lack resilience, feel cord-like and roll easily. If superficial veins are not apparent, massage the arm from wrist to elbow, tap the vein site or apply a warm cloth to the area.
 8. Clean the area with alcohol in a circular motion from the center to the periphery. To avoid discomfort to the patient and hemolysis of specimen, allow area to dry prior to venipuncture. If the site must be palpated again, clean using a new alcohol prep.
 9. Wrap the tourniquet around the arm 3-4 inches above the venipuncture site on skin or around "light" clothing. Never leave the tourniquet on for an extended period of time.
 10. Examine the needle to ensure that is free of hooks and its opening is clear of any particles that may obstruct the flow of blood.
 11. Grasp the patient's arm firmly. Anchor the vein with your thumb 1-2 inches below the venipuncture site.
 12. Tap all tubes with additives to ensure that the additive is dislodged from the stopper.
 13. Line up the needle (bevel up) with the vein. Perform the venipuncture with a smooth entry. Once blood flow is established, instruct the patient to open his/her hand and remove the tourniquet.
 14. Fill each tube until the vacuum is exhausted. Gently invert tubes with additives 5-10 times according to manufacturer guidelines. To avoid hemolysis, do not mix vigorously.
 15. If the specimen cannot be obtained, follow troubleshooting tips (i.e., change position of needle, try another tube, loosen the tourniquet). If this does not work, select another site. **DO NOT ATTEMPT MORE THAN TWO SITES. If unable to obtain an adequate specimen, two more attempts by 1 or 2 phlebotomist(s) may be allowed, but no more than a total of four attempts.**
- NOTE: If after four unsuccessful attempts, Lab Supervisor and Nursing Unit must be notified. If an outpatient, notify the patient's healthcare provider. This notification must be documented.**
16. Apply slight pressure to the site with gauze and smoothly withdraw the needle. Instruct the patient to apply pressure or bend his/her arm up until bleeding stops. Once bleeding has stopped, apply a bandage or tape gauze to the area. Instruct the patient to leave it on for at least 15 minutes. If bleeding continues, hold direct pressure on the site until bleeding stops and alert the physician. "Coban" bandage may be used for patients on Coumadin or aspirin therapy.
 17. Needles and vacutainer holder must be disposed of immediately in an approved sharps container. Recapping needles and vacutainer holder reuse is prohibited.

Revised: 9/4/15

18. Label tubes at the bedside or next to OP immediately after collection with patient's full name, date and time of collection, and your initials/tech code.

USE OF BUTTERFLY NEEDLES

A winged collection set (butterfly) is not for routine use. They are primarily used for blood culture collections. They may also be used on veins of infants and small children, or on difficult or hand veins of adults. Butterfly usage should be considered a last resort.

Revised: 9/4/15

VENIPUNCTURE - PEDIATRIC (4 Pages)

Venipuncture should be avoided in children under the age of two (2) years. Venipuncture is performed only if the specimen volume required exceeds the volume obtainable through capillary puncture.

If the child is under 2 years of age, the site should be limited to superficial veins and assistance provided to restrain the child during collection. Take special care to secure the arm to prevent injury caused by unexpected movement.

Definition of skin puncture: a mixture of blood from arterioles, venules and capillaries containing interstitial and intercellular fluids.

Identification of pediatric patients and cleaning of the site is the same as for adults.

Skin puncture site newborn: Use the plantar surface medial to a line drawn posteriorly from the middle of the great toe to heel, or lateral to a line drawn posteriorly from between the fourth and fifth toes to heel. See Figure 3. Warm the foot prior to skin puncture with a warm cloth or heel warmer. The curvature of the heel should be avoided.

Skin puncture site three to 12 months of age: use the plantar surface of the big toe. Warm the infant's foot with a warm cloth or heel warmer prior to skin puncture.

Previous puncture sites should be avoided.

Skin puncture site one year to adult: use the palmer surface of the middle finger. See figure 2.

PREPARATION & ID:

1. Phlebotomist Preparation:
 - Requisition form must contain the same information as required for venipuncture.
 - Phlebotomist should carefully examine the information on the requisition form.
2. Patient Identification and Preparation:
 - Identify the patient
 - In the nursery, check baby's ID band for name and MR#.
 - On OP's, Verbal ID by parent/guardian to include name, DOB and MR#.
 - 2 independent identifiers are required (room / bed # disallowed).
3. Give parents choice of staying with the child or leaving the room.
4. Approaching pediatric patients can be difficult. Be friendly and confident. Explain necessity of remaining still during procedure. Parental consent must be obtained if a restraint is used.

PROCEDURE:

1. Hold the foot or hand firmly to prevent movement during collection.

Revised: 9/4/15

2. After the site has been chosen and prepared, puncture the skin. Wipe off the first drop of blood with gauze. Gently apply pressure to surrounding area during collection.

Note: To avoid hemolysis, do not use strong pressure.

Site Selection:

- Primary danger in skin puncture is accidental contact with bone followed by infection (osteomyelitis). Because the tip and sides of fingers contain only about half the tissue mass of the central area, the possibility of bone injury is increased.
 - Primary Sites are:
 - Heel
 - Distal segments of the 3rd & 4th fingers
 - Plantar surface of the large toe
 - Ear lobes are usually not recommended.
 - Thumb has possible calluses
 - Index finger has increase in nerve endings
 - 5th finger has decreased tissue
 - Punctures should **NEVER** be made through previous puncture sites (may introduce bacteria into the puncture).
 - Warming the area:
 - Use a moistened towel with warm water (40°C) or
 - By activating a commercial heel warmer and covering the site for 3 to 5 minutes.
3. Performing the Puncture:
 - The heel or finger should be well supported and held firmly.
 - Massaging the area before the puncture may increase blood flow to the area.
 - The heel is held between the thumb and index finger of the nondominant hand, with the index finger held over the arch and the thumb below the heel.
 - The finger is held between the thumb and the index finger with the palmar surface facing up.
 - Punctures performed with a manual lancet should be made with one continuous motion.
 - Automatic devices should be placed firmly on the puncture site.
 - The blade of the lancet should be aligned to cut across the groove of the finger or heel print. This aids in the formation of a rounded drop as the blood will have a tendency to run into the grooves.
 - Place used lancet in an appropriate sharps container.
 - Once collection is complete, wipe the area with gauze and apply pressure to stop bleeding. A bandage is not necessary after bleeding has stopped.
 - Label specimens and note on the orders: capillary specimen.
 4. Specimen Collection:
 - Wipe the first drop of blood away using a sterile gauze.
 - Blood should be freely flowing from the puncture site as a result of firm pressure.
 - Collection containers fill by capillary action.
 - **DO NOT** touch the puncture site with the collection device.
 - Fingers are positioned slightly downward but with the palmar surface facing downward during the collection procedure.
 - To prevent the introduction of air bubbles, capillary tubes and micropipets are held horizontally while being filled.

Revised: 9/4/15

- Microcollection tubes are slanted downward during the collection procedure and blood is allowed to run through the capillary collection scoop and down the side of the tube.
- Once collection is complete, wipe the area with gauze and apply pressure to stop bleeding. A bandage is not necessary after bleeding has stopped.
- Label as a capillary specimen

NOTES:

1. Patient questions concerning the need or significance of tests ordered should be directed to the physicians.
2. Steps to take for prevention of hematoma:
 - Ensure the needle fully penetrates the uppermost wall of the vein.
 - Remove the tourniquet before removing the needle.
 - Apply slight pressure with gauze when bandaging.
3. Steps to take for prevention of hemolysis:
 - Mix specimens with additives gently but thoroughly.
 - Avoid collecting from a site with a hematoma present.
 - Avoid using a needle that is too small (use butterfly needles only when absolutely necessary).
 - Make sure the needle is fitted securely to the vacutainer holder.
 - Allow alcohol to dry before venipuncture is performed.
4. The recommended order of draw when collecting multiple tubes is:
 - Yellow top for culture tubes or vials.
 - Red top for non-additive or serum tubes – glass only (see BD Helper Guide, Order of Draw).
 - Light blue top for citrate tubes.
 - Speckled top for gel-separation and clot activator tubes.
 - Green top for tubes containing heparin.
 - Lavender top for EDTA tubes.
 - Other additive tube depends on the manufacturer. Be sure to consult the manufacturer's package insert.
5. If coagulation testing (PT/PTT/Fibrinogen) is the only test to be collected and you are using a butterfly, draw and discard one 5 mL tube first. This will eliminate the possibility of tissue thromboplastin from the venipuncture site adversely affecting the test results and to avoid short-fill tubes. If at all possible, avoid using a butterfly needle.

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6. Collection of blood for coagulation testing through IV lines that have been previously flushed with heparin should be avoided, if possible. If the blood must be drawn through an indwelling catheter, possible heparin contamination and specimen dilution should be considered. When obtaining specimens from indwelling lines that may contain heparin, the line should be flushed with 5 mL of saline and the first 5 mL of blood or 6-times the line volume (dead space volume of the catheter) be drawn off and discarded before the coagulation tube is filled. Laboratory Staff cannot draw via IVs or catheters.

NOTE: A blue top tube can be drawn from a central line if a 5 mL “waste” tube is drawn first to get rid of residual heparin (a “vaxcel” picc line).

PATIENT CARE

The Laboratory Staff may provide the following patient care:

Fainting:

1. Lower the patient’s head or transfer to bed.
2. Loosen tight clothing.
3. Apply cold compresses to forehead and back of neck.
4. Request assistance of physician to evaluate patient if necessary.

Nausea:

1. Make patient as comfortable as possible.
2. Instruct patient to breathe deeply and slowly.
3. Apply a cold compress to forehead.

Vomiting:

1. Provide a basin and tissues.
2. Give patient water to rinse out mouth.

Convulsions:

1. Prevent patient from injuring him/herself.
2. **Do not** restrain patient.
3. Notify the physician for immediate assistance.

Revised: 9/4/15

SPECIAL COLLECTION INFORMATION FOR SPECIMENS SENT TO A REFERENCE LAB (2 pages)

TRANSMISSION ELECTRON MICROSCOPY EM ULTRASTRUCTURAL STUDY

<u>SPECIMEN REQUIREMENT:</u>	Fresh tissue. Formalin fixed or paraffin embedded liver tissue.
<u>COLLECTION REQUIREMENT:</u>	Sterile plastic container. Notify Anatomic Pathology before collection (562-7418).
<u>LIMITATIONS:</u>	Small size of specimen may not include focal lesions. Ultrastructure is used to identify cell type or cellular features. It does not necessarily determine malignancy.

STONE ANALYSIS

<u>SPECIMEN REQUIREMENT:</u>	Unfixed, dry specimen. Requisition must state site of origin.
<u>COLLECTION REQUIREMENT:</u>	Sterile plastic container.

SKIN BIOPSY, IMMUNOFLUORESCENCE

<u>SPECIMEN REQUIREMENT:</u>	Tissue Biopsy: Specimen must be received in the laboratory within 24 hours. Notify Anatomic Pathology before collecting specimen.
<u>COLLECTION REQUIREMENT:</u>	Pre-filled container of transport media (obtain from Histology Lab, 562-7418).
<u>STORAGE REQUIREMENTS:</u>	Refrigerate.

MUSCLE BIOPSY

<u>SPECIMEN REQUIREMENT:</u>	Fresh, unfixed muscle tissue.
<u>COLLECTION REQUIREMENT:</u>	Immediately wrap clamped tissue in saline soaked gauze and place on ice for transport to Histology Department.
<u>LIMITATIONS:</u> Revised: 9/4/15	Collections/submission instructions must be followed. Clinical history must be provided.

KIDNEY BIOPSY

- SPECIMEN REQUIREMENT:** Tissue.
Call Histology before collecting specimen (562-7418).
Patient history required.
The ordering physician will need to submit a kidney biopsy requisition for the reference laboratory with the specimen. These are available through Anatomic Pathology.
- STORAGE REQUIREMENT:** **Must immediately** be examined in the Pathology Department in sterile saline.

FLOW CYTOMETRY, LYMPH NODE

- SPECIMEN REQUIREMENT:** Lymph node cut into fragments.
- COLLECTION REQUIREMENT:** Sterile tube pre-filled with RPMI media (obtain from Anatomic Pathology at 562-7418).
- LIMITATIONS:** **Adequacy of sample.**
- STORAGE REQUIREMENTS:** **Deliver immediately to Cytology Laboratory.**

BREAST CANCER PROFILE

- SPECIMEN REQUIREMENT:** Paraffin sections of tissue positive for tumor.
- ORDERABLE TESTS:** ER, PR, Her-2/NEU (Tests may be ordered individually)

CHROMOSOME ANALYSIS

- SPECIMEN REQUIREMENT:** 3 cm³ products of conception, skin or fascia.
1 cm³ of placenta (including chorionic villi).
Patient history required.
- COLLECTION REQUIREMENT:** Sterile container containing sterile saline.
Avoid contamination.
- LIMITATIONS:** If specimen does not consist of viable products of conception, there may be no cell growth.
- STORAGE REQUIREMENT:** Refrigerate (Do not freeze).

Revised: 9/4/15