

# **BRATTLEBORO MEMORIAL HOSPITAL**

## **2023 LAB GUIDE GENERAL INFORMATION**

## **ADMINISTRATION**

Medical Director of Laboratory.....Douglas Kim, MD, FCAP

Administrative Director of Laboratory Services..... Imogene Drakes, PhD, FACHE

Laboratory Supervisor.....Deborah Gay, MT, ASCP

**TELEPHONE / FAX NUMBERS**

General Information.....	257-8311
Results Inquiry:	
Clinical Fax .....	257-8287
Outpatient Phlebotomy.....	275.3633

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## LABORATORY HOURS

**LABORATORY – CUSTOMER SERVICE** MONDAY - FRIDAY 8AM – 4:30PM

**PATHOLOGY AIDE** MONDAY – FRIDAY 9 AM – 3:30PM\*

\* All other hours – Contact Pathologist on-call through BMH Operator (802) 257-0341

## **OUTPATIENT HOURS**

MONDAY – FRIDAY	7AM – 6PM
SATURDAY	8AM – 12 PM
SUNDAY	CLOSED
HOLIDAY HOURS	AS POSTED

## HOW TO COMPLETE OUTPATIENT LABORATORY REQUISITIONS

All outpatient Laboratory tests must be ordered on a Laboratory requisition (see Main Laboratory requisition on following page).

### Mandatory Information Required:

1. Patient's full name, date of birth and gender
2. Patient's address and phone number
3. Patient's primary and secondary insurance information
4. Patient under 18 years, parent/guardian's name and address and social security number
5. Authorization and assignment signature
6. Fully legible name of authorized HCP ordering test
7. Diagnosis / Symptoms / Medical necessity / ICD-10 code (Choose from selection on back page of requisition or write ICD-10 code(s) on lines at the top of the back page).
8. Test(s) ordered
9. Specimen description

**\*\*IT IS ALSO VERY IMPORTANT TO INCLUDE THE DATE AND TIME OF SPECIMEN COLLECTION\*\*  
if you are collecting the specimen.**

### Additional Information

1. If you need a test done STAT, place an X in the STAT box on the front of the requisition.
2. If you need results called or faxed to your office, please record this on the requisition and supply the phone/fax number.
3. If another physician requires a copy of the laboratory report, **please print the first and last name of the physician on the requisition in the "copy to" box.**
4. If the information described above is not provided, a request will be made for a corrected requisition. Testing will be delayed until the appropriate information is provided.

### NOTES:

For certain infectious diseases (e.g., malaria), travel or other risk factors should be listed. Requisitions can be obtained from the laboratory by calling (802) 257-8311.

Back Page of Main Laboratory Requisition

**Patient instructions:** Fasting: If tests require fasting, do not eat or drink any liquids other than water for 12-14 hours. Tests requiring fasting have an "F" next to them. **Specimen collection:** call laboratory for specific instructions on collecting urine, sputum, stool, etc.

Most of the tests in this order form possess Medicare Local and/or National Coverage Determination policies (LCD/NCD). Refer to the policy for those diagnoses that are acceptable. Please document the diagnosis that supports the medical necessity for ordering the test.

Below is a list of high volume diagnosis codes for ordered tests. Check off applicable diagnoses if appropriate. If diagnosis is not listed below, enter the code and description to the right. NOTE: PER CMS RULES, WE CANNOT PROCESS TESTS WITHOUT ADEQUATELY INDICATED DIAGNOSIS INFORMATION.		<b>CDS10 Diagnosis</b>		<b>Code(s)</b>	<b>Description</b>	<b>Please enter diagnosis for each test ordered</b>
		Primary				
		Secondary				
		Secondary				
<b>Abdominal pain</b>	<b>COPD</b>			<b>Fever</b>		<b>Pharyngitis, acute</b>
R10.0 Acute abdomen	J44.0 COPD w acute lower resp infect			R50.0 Other specified fever	J02.0 Streptococcal pharyngitis	
R10.1 Upper abd. pain, Unspec.	J44.1 COPD w [acute] exacerbation			R50.9 Fever, Unspec.	J02.9 Acute pharyngitis, Unspec.	
R10.1.1 Right upper quadrant pain	J44.9 COPD, Unspec.			<b>Glucose abnormal</b>	<b>Routine GCM exam</b>	
R10.1.2 Left upper quadrant pain				R73.0 Other abnormal glucose	Z01.411 Encounter for gen exam (general) (routine)	
R10.2 Epigastric pain	<b>Coronary artery dis</b>			R73.9 Hyperglycemia, Unspec.	Z01.419 Encounter for gen exam (general) (routine) w abnormal findings	
R10.2 Pelvic and perineal pain	I25.10 Abduct heart disease of native coronary artery w ang pectis			R73.09 Other abnormal glucose	Z01.419 Encounter for gen exam (general) (routine) w abn find	
R10.3 Lower abd. pain, Unspec.	I25.110 Abduct heart disease of native cor art w unstable ang pectis			R73.9 Hyperglycemia, Unspec.	<b>Screening malignant neopl</b>	
R10.3.1 Right lower quadrant pain	<b>Depressive disorder</b>			<b>Hypercholesterolemia</b>	Z12.4 Encounter for screening for malignant neoplasia of cervix	
R10.3.2 Left lower quadrant pain	F32.0 Other depressive episodes			H78.0 Pure hypercholesterolemia	Z12.5 Encounter for screening for malignant neoplasm of prostate	
R10.3.3 Periumbilical pain	F32.9 Major depressive disorder, single episode, Unspec.			<b>Hyperlipidemia</b>	<b>Thrombosis</b>	
R10.8 Generalized abdominal pain	<b>Diabetes</b>			E78.0 Pure hypercholesterolemia	I82.401 Acute embolism and thrombus unsp deep veins of l low extrem	
R10.9 Unspec. abdominal pain	E10.9 Type 1 diabetes mellitus without complications			E78.1 Pure hyperglycemia	I82.402 Acute embolism and thrombus unsp deep veins of low extre	
	E11.0 Type 2 diab mellitus w/hyperglycemia			E78.2 Mixed hyperlipidemia	N30.01 Asymptomatic hematuria	
	E11.69 Type 2 diab mellitus w/other specified complic			E78.3 Hyperchylomicronemia	N30.01 Interstitial cystitis (chronic) without hematuria	
<b>Anemia</b>	E11.9 Type 2 diab mellitus w/kidney complic			E78.4 Other hyperlipidemia	N30.01 Interstitial cystitis (chronic) w hematuria	
D64.0 Hereditary sideroblastic anemia				E78.5 Hypertension, Unspec.	N30.02 Oth chron cystitis w/o hematuria	
D64.1 Secondary sideroblastic anemia due to drug				E78.6 Lipoprotein deficiency	N30.02 Oth chron cystitis w/o hematuria	
D64.9 Anemia, Unspec.				<b>Hypertension</b>	N30.03 Trigonous with hematuria	
D50.9 Iron deficiency anemia, Unspec.	<b>Diarrhea</b>			I30 Essential (primary) hypertension	N30.40 Irradiation cystitis without hematuria	
M12.89 Arthritis	K58.0 Irritable bowel syndrome with diarrhea			<b>Hypothyroidism</b>	N30.41 Irradiation cystitis w/hematuria	
M12.89 Oth specific arthropathies, NEC, Inflamto sites	K58.9 Irritable bowel syndrome without diarrhea			E03.1 Congenital hypothyroidism without goiter	N30.80 Other cystitis without hematuria	
Atrial fibrillation	K59.1 Functional diarrhea			E03.3 Postdefective hypothyroidism	N30.81 Other cystitis with hematuria	
H48.0 Paroxysmal atrial fibrillation	K59.7 Diarrhea, Unspec.			E03.4 Atrophy of thyroid (acquired)	N30.9 Urinary tract inf, site not specified	
H48.1 Persistent atrial fibrillation				E03.5 Myxedema coma	<b>Vitamin D deficiency</b>	
H48.2 Chronic atrial fibrillation				E03.8 Other spec. hypothyroidism	E55.9 Vitamin D deficiency, Unspec.	
H48.9 Unspec. atrial fibrillation				E03.9 Hypothyroidism, Unspec.		
<b>Blood chem abnormal</b>	<b>Drugs</b>			<b>Malaise and fatigue</b>	<b>PANEL INFORMATION:</b>	
R78.7 Decreased lead level in blood	Z79.3 Long term use of hormonal			G93.3 Postviral fatigue syndrome	<b>Basic Metabolic Panel:</b> GU, BUN, NA, K, CL, CO2, CREA, CA, Amion Gas, Creatinil (Calculated), Glomerular Filtration Rate (GFR)	
R79.89 Other specific abnormal findings of blood chemistry	Z79.899 Other long term drug therapy			R53.0 Nonspecific (malignant) related fatigue	<b>Comprehensive Metabolic Panel:</b> GU, BUN, ALT, AST, ALP, PHOS, T-BIL, CA, TP, ALB, CREA, NA, K, CL, CO2, Amion Gas, Creatinil (Calculated), Glomerular Filtration Rate (GFR)	
R79.09 Other abnormal glucose	Z51.81 Encounter for ther. drug level monitoring			R53.81 Other malaise	<b>Urolyte Panel:</b> NA, K, CL, CO2, Amion Gas	
<b>Coagulant defect</b>	<b>Dysuria</b>			R53.83 Other fatigue	<b>Hearts Liver Panel:</b> TBI, DBIL, ALT, AST, ALP, PHOS, ALB, TP	
O68.8 Other spec. coagulation defects	N60.0 Dysuria			<b>Obesity</b>	<b>New England Regional Allergy Panel:</b> Cow, Timothy Grass, Bermuda Grass, Ragweed, English Plantain, Cat Epithelium, Citrus/Apricot, Alternaria/Tenella, House Dust Mites	
O68.9 Coagulation defect, Unspec.	<b>Edema</b>			E66.3 Overweight	<b>Pediatric Food Allergy Panel:</b> Egg white, Milk, Wheat, Peanut, Soybean, Oat, Corn/Gut, Cashew, Sesame Seed	
Z79.01 Long term use of anticoag	R60.0 Localized edema			E66.8 Other obesity		
	R60.1 Generalized edema			E66.9 Obesity, Unspec.		
<b>Elevated blood pressure</b>	<b>Elevated blood pressure reading, w/o diagnosis of htn</b>					
R03.0 Elevated blood pressure reading, w/o diagnosis of htn						

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## CRITICAL LAB VALUES TO BE CALLED (3 Pages)

### CHEMISTRY SECTION

Bilirubin, Total (All ages)		$\geq 13$ mg/dL
Blood Urea Nitrogen		$> 104$ mg/dL
CO <sub>2</sub>	$<10$ mmol/L	$>40$ mmol/L
Ca	$<7.0$ mg/dL	$>14.0$ mg/dL
Creatinine		$> 7.4$ mg/dL
Glucose (> 1 Month)	$<50$ mg/dL	$>500$ mg/dL
Glucose (Neonates)	$<40$ mg/dL	$>200$ mg/dL
Hepatitis B Surface Antigen Confirmatory Test		Positive
K	$<3.0$ mmol/L	$>6.0$ mmol/L
Mg	$<1.0$ mg/dL	$>4.8$ mg/dL
Na	$<125$ mmol/L	$>160$ mmol/L
Phosphorus	$< 1.1$ mg/dL	
Troponin I		$\geq 0.1$ ng/mL
Vitamin D		$\geq 100$ ng/ml

### DRUG LEVELS GREATER THAN

Acetaminophen	$>150$ ug/mL	Phenytoin	$> 30$ ug/mL
Carbamazepine	$> 15$ ug/mL	Salicylate	$>30$ mg/dL
Digoxin	$>2.5$ ng/mL	Theophylline	$>25$ ug/mL
Gentamicin(peak)	$>12$ ug/mL	Tobramycin(peak)	$>12$ ug/mL
Gentamicin(random)	$>13$ ug/mL	Tobramycin(trough)	$>2.0$ ug/mL
Gentamicin(trough)	$>2.0$ ug/mL	Valproic Acid	$>200$ ug/mL
Lithium	$>1.6$ mmol/L	Vancomycin (peak)	$>80$ ug/mL
		Vancomycin (trough)	$>25$ ug/mL

## HEMATOLOGY SECTION

TEST	"low" critical value	"high" critical value
WBC (Newborn)	< 4.0 K/ $\mu$ L	$\geq$ 30.0 K/ $\mu$ L
WBC (Adult)	< 1.0 K/ $\mu$ L	$\geq$ 20.0 K/ $\mu$ L
Platelets (Adult)	< 40 K/ $\mu$ L	None
Blasts, Differential	Present	Present
Hemoglobin, (Newborn)	< 9.7 ngm/L	> 22.3 ngm/L
Hematocrit, (Newborn)	< 29 %	> 67 %
Hemoglobin, (Adult)	< 8.0 ngm/L	> 20.0 ngm/L
Hematocrit, (Adult)	< 24%	> 60 %
Heparin, Low Mol. Wt.		> 2.0 IU/mL
Heparin, Unfractionated		> 1.0 IU/mL
APTT	None	>119.0 seconds
Protime, (PT)- (Adult)	None	>44.3 seconds
PT INR		>4.7
Neutrophil ABS % (auto Diff)	<0.49 K/ $\mu$ L	

## MICROBIOLOGY SECTION

TEST	critical value
CSF Smear and/ or culture	positive
Acid Fast Smear and/or AFB Culture	positive
Blood Culture results	positive
MRSA on Nursing Home Patients	positive
VRE on Nursing Home Patients	positive
Group B Streptococci isolated from neonates or infants to age 3 months	All are called
B. Pertussis are called by VT State lab	positive
Campylobacter	positive

## SEROLOGY SECTION

CRITICAL VALUE – TEST
Positive - Herpes Simplex virus culture from any urogenital site of a woman of childbearing age (10-50 years of age) called by UVMMC (Reference Lab).
Positive - Viral culture from any site of a neonate called by UVMMC or MML (Reference Labs)



**URINALYSIS SECTION:**

TEST	CRITICAL VALUE
Glucose (newborn)	Positive
Ketones (newborn)	Positive
Red blood cell casts	Positive
Reducing substance (<1 month)	Positive

**BLOOD BANK/TRANSFUSION SERVICE:**

TEST
Incompatible crossmatch in setting of urgent blood need.
Transfusion reaction investigations showing a hemolytic reaction.
Unavailability of products to fill and order.

**SURGICAL PATHOLOGY SECTION:**

Significant unsuspected diagnoses
Significant discrepancy between frozen and permanent diagnosis, with potential major impact on patient care

**DEFINITIONS:**

- 1) Licensed care giver: Refers to Physicians, Allied Health Staff, RN's, or LPN's.
- 2) Outpatient: This is any outpatient from a physician office, nursing home, or VNA at the time of the critical value report. Inpatient is any patient located on Med/Surg 2<sup>nd</sup> or 3<sup>rd</sup> floor, ACU, SCU, OR, Birth Center/ Nursery, Short Stay.

**TRAINING:**

All Technical and Phlebotomy staff are trained during orientation for new employees.

## **REFERENCE RANGE (NORMAL VALUES)**

Reference ranges are guides rather than absolute indicators of health and disease. Values for healthy persons often overlap with values for persons afflicted with disease. Laboratory values may vary because of methodological differences and/or modes of standardization which exist between various laboratories.

Therapeutic and toxic drug ranges are those commonly accepted on the basis of current knowledge and recommended values of current reagent manufacturers.

## **REFERENCES:**

1. Laboratory Test Handbook with Keyword Index, 1988.
2. MLO, Clinical Laboratory Reference, 20th Edition 1993.
3. MAYO Medical Laboratories Interpretive Handbook for Diagnostic Laboratory Tests, 1997.
4. Roche Package inserts for the respective reagents.

## CRITICAL TESTS

Results will always be called to Provider. Expected turnaround time from time of specimen receipt in Lab to time of phoned results in parentheses.

- ☐ Frozen Sections, Routine/Non-Complex (*20 minutes*)
- ☐ Troponin T (*30 minutes*)

## CALLING CRITICAL RESULTS

### PROCEDURE:

Once “critical” values for a test are established, laboratory personnel are required to follow this protocol for notification when critical results are obtained

Call immediately to notify a licensed caregiver on the floor, in a physician’s Office, Nursing Home, or VNA patient.

- a. Verify that patient is at this location (Nursing Home), or a patient at this office, or is being treated by VNA.
- b. All Out Patient Critical Values” will be called after the lab test is verified and indicated in LIS that a “Critical Result Value has occurred. Critical values will be reported to a licensed Caregiver (s) caring for the patient within 60 minutes after the test is verified in LIS. Lab staff will state to a caregiver that the results of a test are in a “Critical” value range and then give the critical value.
  - a) Lab will ask the care giver to repeat back to laboratory “the result or value reported.”
  - b) Lab staff will document the telephone call in the LIS in the “critical result area” place date, exact time, and the name of whom it was called to. This data will also appear in the various lab section reports.

Licensed caregiver in physician’s Office, Nursing Home, or VNA needs to immediately notify the “responsible licensed caregiver” who will act on the critical test result just being reported.

Critical test results may not be left on an answering machine. Please try several times to call.

BMH Pathologist will be notified if the “Outpatient” ordering physician/licensed caregiver could not be reached.

Other results may be deemed critical if, in the opinion of the Pathologist or Technologist, the results may indicate the patient may require urgent care.

Note: Laboratory technical staff are responsible for notifying ordering personnel concerning turnaround time delays due to processing issues such as a dilution due to a “high” out of range message from a lab analyzer, instrument malfunction, quality control problems, extended processing, workload backup, etc., and assuring them that they will receive test results ASAP.

## CRITERIA FOR ACCEPTABLE SPECIMENS

Specimens can be accepted and tested, if they meet the following guidelines:

1. LABELING – all specimens and aliquots must be received with a label that contains:
  - the patient's full name
  - at least one other unique identifier (i.e., medical record number or date of birth)
  - date and time of collection (acceptable if on requisition only)
  - identity of the individual collecting BMH drawn samples and all Blood Bank specimens
  - all aliquots must bear the identity of the individual preparing the aliquot

**Note: No aliquot is ever returned to the original container.**

**All Blood Bank samples for cross-match or type and screen must be labeled using the Secureline identification system.**

2. OUTPATIENT (OP) LABORATORY REQUISITION – all OP specimens must be accompanied by a complete requisition. The form **must** contain the following:
  - Patient's name
  - Patient's sex
  - Patient's date of birth
  - Name of physician or person legally authorized to order testing
  - Tests requested
  - Diagnosis (ICD 10) appropriate for all tests ordered.
  - Time and date of specimen collection, when specimen is accompanying requisition
  - Source of specimen, when appropriate
  - Clinical information, when appropriate
  - Completed consent form, when appropriate
3. SPECIMEN CONTAINER – the exterior must be intact and free of contamination by blood or body fluids. If the specimen is contained in a syringe, the needle must have been removed and replaced with a firmly sealed cap.
4. VOLUME OF SPECIMEN – the appropriate volume of specimen must be collected to meet testing requirements.
5. COLLECTION DEVICE/PRESERVATIVE – specimens must be submitted in the proper collection device and with the correct preservative.

## CRITERIA FOR REJECTING SPECIMENS

Any specimen arriving in the laboratory that fails to meet criteria will be withheld from analysis until the deficiency has been resolved.

**Never discard any rejected specimen before its normal discard date (See Add-on or Storage Requirements for each test in the Test Menu) or 72 hours.** Whenever possible, a replacement specimen should be obtained. If one cannot be obtained, the clinician must be notified.

Unstable specimens/analytes or unique samples that cannot be recollected may need to be accepted even though the specimen is suboptimal. These specimens would include:

- CSF or other body fluids
- capillary/fingerstick specimens
- cord blood samples
- tissues
- culture specimens obtained prior to initiation of antibiotic therapy
- pediatric nasopharyngeal washings
- Pap smears

**The original sample cannot be relabeled. All rejected specimens are to be retained in a designated area of the refrigerator for as long as their discard dates.**

In the event that a specimen is unstable, unique or cannot be recollected, the physician and the individual who collected the sample (if not the same person) must certify in writing that (1) the specimen is irreplaceable and (2) the correct specimen information is accurate and approval must be obtained from the Medical Director of the Laboratory prior to running the specimen. (See example of the *Authorization to Test Irretrievable Specimen* on the next page). If the sample was mislabeled, the incorrect label cannot be removed. The correct LIS label can be placed on the sample. It is imperative that technical staff be made of aware of the labeling discrepancy. Following the completion of the requested assay, technical staff must add a disclaimer to the results by appending a comment such as Specimen labeling issue, assay performed at the request of the Healthcare Provider).

Documentation in the LIS must occur whenever the *Authorization to Test Irretrievable Specimen* (see next page) is used to accept an unlabeled or mislabeled specimen. The signed form will be retained in the laboratory and an Incident Report must be completed.

BRATTLEBORO MEMORIAL HOSPITAL LABORATORY  
17 BELMONT AVENUE  
BRATTLEBORO, VT 05301

## AUTHORIZATION TO TEST IRRETRIEVABLE SPECIMEN

Name of Patient \_\_\_\_\_ Date of Birth \_\_\_\_\_

Medical Record Number \_\_\_\_\_ Accession Number \_\_\_\_\_

Date Specimen Collected \_\_\_\_\_.

Ordering Provider \_\_\_\_\_

Test Ordered \_\_\_\_\_

Type of Specimen \_\_\_\_\_

Source of Specimen \_\_\_\_\_

Signature of Provider authorizing testing of specimen \_\_\_\_\_ Date \_\_\_\_\_

Laboratory Medical Director's signature \_\_\_\_\_ Date \_\_\_\_\_

Laboratory Administrative Director's signature \_\_\_\_\_ Date \_\_\_\_\_

## PATIENT IDENTIFICATION

The phlebotomist will use two patient identifiers before drawing blood:

### **In an Outpatient setting:**

Ask the patient a direct question, "Can you give me your full name please?" and "What is your date of birth?" Compare the information stated by the patient with information on the computer labels or with the requisition slip.

Nursing home patients must also be identified using two unique identifiers. This is usually name and date of birth. If the patient/resident is unable to provide this information, it should be provided by a nursing home employee, unless a valid band is worn by the patient.

### **In an Inpatient setting:**

Compare name and Medical Record # on the patient's identification bracelet with that on your labels or requisition. This information must be **identical!** Usually the ID bracelet is on the patient's wrist. In some cases, it may be on the patient's ankle. Request a nurse to identify a patient who does not have an identification bracelet. A bracelet should be on the patient's wrist except in cases when it is not feasible. In this case, have the nurse taking care of the patient identify the patient for you. Make a note on the requisition of the nurse who identified the patient.

Patient who is unconscious, too young, mentally incompetent, or does not speak the language of the phlebotomist:

Ask the nurse to identify the patient by name and Medical Record # or date of birth. Compare this data with the information on the request form. For outpatients, a relative or friend may be asked to identify the patient by name and date of birth.

Procedure for identifying Unidentified Emergency Patients:

The patient must be positively identified when the specimen is collected. The unidentified emergency patient is given a temporary designation until positive identification can be made. In all cases, the name and hospital number of the emergency identification are attached to the patient's body either by wristband or some similar device.



## REFERRAL OF SPECIMENS

Skin scrapings, conjunctival scrapings, throat swabs, Tzanck preparations, nasopharyngeal swabs, (e.g., for *B. pertussis*), and lavage for viruses are samples that are collected from procedures performed by the ordering clinic or providers on the floors.

A nucleic acid amplification test (NAAT) is available at the reference laboratories for the rapid detection of *Mycobacterium tuberculosis* for diagnosis of *Mycobacterium tuberculosis* complex infections on the initial respiratory specimen from patients suspected of having pulmonary tuberculosis.

## SPECIMEN COLLECTION

The laboratory provides staff to assist in the collection of venous blood samples. Some nursing units collect their own samples and require less assistance. Other units rely solely on the laboratory. In either instance, the laboratory will respond to requests for assistance on either a scheduled or STAT basis as described below.

- A. Blood collection schedules: There are five ways to request blood draws
  1. Early AM rounds are completed between 0600 - 0800.
  2. Periodic routine rounds may be scheduled after AM rounds, until 2300 and as needed during 3<sup>rd</sup> shift.
  3. Timed draws are scheduled as requested.
  4. STAT requests will be collected within 20 minutes of lab notification
  5. The majority of Laboratory tests are normally scheduled for early 6AM draws.
- B. All specimens submitted to the Laboratory will be labeled in ink with:
  1. Patient's full name
  2. Medical record number or date of birth
  3. Location
  4. Date collected
  5. Time collected
  6. Initials of collection personnel for all specimen types.
  7. Site / source of specimen as appropriate.

**NOTE: All Inpatient specimens should be sent to the lab with the computer-generated label.**

- C. Specimens submitted on slides:
  1. Slide must be labeled in pencil.
  2. Slide must have patient's full name and medical record number or date of birth.
  3. Slide container must be labeled with all the information listed in Item B above.

If the information described above is not provided, the specimen will be rejected and the nursing unit or other area initiating the request will be informed of the error. A request will be made for a corrected specimen. If specimens are not collected according to required procedures, a staff member will notify the nursing unit. If the patient is an outpatient, the attending physician's office will be notified. Recommended collection procedure may be found listed in the individual test section. Hemolysis and/or lipemia-free specimens are required for certain procedures. If testing is performed on hemolyzed or lipemic specimens, a notation will appear on the report form. Any other observed interfering substance will also be noted on the report form.

- ☐ Specimen labeling must be on the actual sample container, not on an over wrap container or bag.
- ☐ Specimens must be submitted in solid sided, screw capped containers.
- ☐ Baggies are not acceptable.

## **SPECIMEN CONTAMINATION**

Requisitions or other paper accidentally contaminated with specimens should be discarded into an appropriate container and a new requisition form made out. Specimen containers, whose external surface becomes contaminated, should be decontaminated in its entirety with an EPA-approved hospital disinfectant.

### **Standard Precautions**

All specimens are presumed to be potentially infectious and are handled following “Standard Precautions.”

## **SUPPLIES FOR PHYSICIAN OFFICES**

The BMH Laboratory provides a variety of collection supplies to assist clinicians in obtaining samples for testing in the BMH Lab and in the Reference Labs used by BMH. An order form for supplies may be obtained by calling the laboratory at 257-8311.

Urgent Inpatient supply orders will be filled within 24 hours and non-urgent Inpatient and Outpatient supply orders will be filled within 72 hours.

It is the understanding that supplies requested are used for the sole purpose of sending samples to the BMH Laboratory. As part of the federally mandated compliance program, the laboratory may periodically audit the relationship of supplies requested to specimens received.

## **BLOOD BANK SECTION (BB)**

The Blood Bank is located in the Main Laboratory on the ground floor. The telephone is extension 8311. Transfusion services are available 24 hours per day, 7 days per week.

### **Indications for Transfusion**

Blood product transfusions should only be given when medically necessary. Indications for transfusions/recommendations are embedded within printed transfusion orders and on electronic orders

## **BB - EMERGENCY (UNCROSSMATCHED) BLOOD PROTOCOL**

For an order of UNCROSSMATCHED blood, call the Blood Bank (Ext. 8311) indicating the need for Uncrossmatched blood, stating the number of units needed. This will give the Blood Bank Tech an opportunity to begin processing the necessary paperwork and deliver the blood to the appropriate unit.

The UNCROSSMATCHED blood will be issued with a fluorescent orange “UNCROSSMATCHED BLOOD” sticker attached to the face of the unit. The “Emergency Transfusion Request” form indicating the status of the bloods issued and listing the donor units will accompany the Uncrossmatched units of blood. The Physician MUST SIGN the request form and return the form to the Blood Bank Tech.

In cases of extreme emergency where there is not sufficient time to perform a blood type, O Negative packed cells will be released.

## **BB - FROZEN PLASMA**

A call to the Blood Bank for Frozen Plasma (formerly called FFP) should be made 1 hour before the expected infusion (this is the time required to thaw the frozen plasma).

Frozen Plasma should be issued as ABO compatible (the Rh factor is insignificant). The Frozen Plasma does not need to be crossmatched.

The sooner Frozen Plasma is infused after being thawed, the greater the survival of the labile coagulation factors. Frozen Plasma must be used within 24 hours after being thawed or it must be discarded (wasted).

**Brattleboro Memorial Hospital**  
17 Belmont Ave., Brattleboro VT 802-257-0341

**PHYSICIAN'S ORDERS**  
**BLOOD & BLOOD PRODUCTS**

NOTED (Initial)			
DATE	TIME	COUNT	
			<b>BLOOD &amp; BLOOD PRODUCTS</b>
			<input type="checkbox"/> STAT <input type="checkbox"/> ROUTINE <input type="checkbox"/> Pre-op surg Date: _____ Time: _____
			<b>BLOOD PRODUCTS</b>
			<b>INDICATION - CHECK ONE</b>  <div style="display: flex; justify-content: space-between;"> <div> <b>Hemoglobin / Hematocrit</b>  <input type="checkbox"/> &lt; 6 gm/dL / 18%  <input type="checkbox"/> 6.0-9.0 gm/dL / 18% - 27%  <input type="checkbox"/> &gt; 9 gm/dL / 27%         </div> <div> <b>When to Transfuse - Guideline</b>  <u>Almost always</u>            Sometimes - with significant risk factors  <u>Almost never</u> - only with VERY HIGH risk factors         </div> <div style="border: 1px solid black; padding: 5px;"> <b>Risk Factors:</b>            Cardiac Condition            Respiratory Failure            Cerebral Ischemia            Hx of Hemorrhage         </div> </div> <b>DIAGNOSIS - CHECK ALL THAT APPLY</b> <input type="checkbox"/> Acute anemia due to acute blood loss (of 750 ml) or 15% blood vol. with symptoms of hypovolemia <input type="checkbox"/> Acute anemia of unspecified origin (e.g.: fall in HCT > 6 points within 24 hours) <input type="checkbox"/> Anemia due to chronic disease ( <u>CIRCLE ONE</u> : cancer, renal failure, or other _____) <input type="checkbox"/> Aplastic anemia <input type="checkbox"/> Anemia due to hemolysis <input type="checkbox"/> Other _____
			<b>ORDER:</b> <input type="checkbox"/> Type & Cross-Match _____ PRBC's (Leukodepleted) units <input type="checkbox"/> Irradiated PRBC's (order units for entire treatment course) <input type="checkbox"/> CMV Neg PRBC's
			<b>PLATELETS</b>
			<b>DIAGNOSIS - CHECK ONE</b> <input type="checkbox"/> Platelet count < 10,000/cc3 w/ failure to produce Check one: <input type="checkbox"/> Unspecified Thrombocytopenia    or <input type="checkbox"/> Specify Type: _____ <input type="checkbox"/> Platelet count < 20,000/cc3 w/ signs of hemorrhagic diathesis <input type="checkbox"/> Platelet count < 50,000/cc3 w/ active hemorrhage or invasive procedure (recent or in progress) <input type="checkbox"/> Platelet dysfunction as documented by: (specify) _____ <input type="checkbox"/> Special circumstances: (specify) _____
			<b>ORDER:</b> Platelets (Platelephoresis) _____ # units (NOT stocked at BMH - minimum of 8 hours to receive)
			<b>PLASMA</b>
			<b>DIAGNOSIS - CHECK ONE</b> <input type="checkbox"/> <u>Emergent</u> reversal of Warfarin effect or <u>Emergent</u> correction of elevated INR <input type="checkbox"/> Abnormal coagulation studies and significant hemorrhage. <input type="checkbox"/> Other _____
			<b>ORDER:</b> Fresh Frozen Plasma (FFP) _____ # units
			<b>CRYOPRECIPITATE</b>
			<b>DIAGNOSIS- CHECK ONE</b> <input type="checkbox"/> Fibrinogen < 100 mg/dl <input type="checkbox"/> Fibrinogen < 150 mg/dl - with active hemorrhage <input type="checkbox"/> Other - specify _____
			<b>ORDER - units for entire course of treatment</b> Cryoprecipitate _____ # units to be given (NOT stocked at BMH - takes a minimum of 8 hours to receive) <input type="checkbox"/> Cryoprecipitate: Single unit (20 ml) <input type="checkbox"/> Cryoprecipitate: Pooled (5 units) <input type="checkbox"/> Other - specify _____

**Short Stay Fax: 802-257-8865**

Revision date: 12/6/09

MD Signature	MD	Date	Time
Orders noted	RN/LPN	Date	Time
24 hr chart check	RN/LPN	Date	Time
Med faxed to pharmacy	Initials	Date	Time

**Laboratory Fax: 802-257-8287**



## BB - PATIENT SAMPLE COLLECTION

Blood samples submitted to the Blood Bank for testing must be properly labeled or they will not be accepted. Type and Screen and Crossmatch samples must be labeled with a Securline Blood Band at the time of collection.

The preferred specimen type is the EDTA (pink) tube. The individual collecting the sample must positively identify the patient and before leaving the bedside **MUST label the blood sample tubes with:**

- 1) Patient's full name (no initials or nicknames)
- 2) Medical Record number, social security number or date of birth
- 3) Date of collection
- 4) Time of collection
- 5) INITIALS of individual collecting the blood sample.

Please bear in mind that the majority of Fatal Transfusion Reactions are not due to incorrectly matched blood or immune antibodies, but rather are due to CLERICAL ERRORS, ESPECIALLY ERRORS OF IDENTIFICATION.

## **BB – PLATELETS**

Platelets are transfused as a platelet pheresis (equivalent to 6-8 platelet concentrates).

Platelets should be ordered by 11:00 am for transfusion the same day Monday through Friday. If platelets are ordered by 11:00 am, platelets will be ready for transfusion by 4:30 pm.

Call the Blood Bank (ext. 8311) to order platelets.

Platelets are stored at room temperature and must be continually rotated on a rotator until infusion. Platelets should be infused as quickly as possible after they have been released from the Blood Bank and must not be stored prior to transfusion.

## **BB - POLICY FOR THE RETURN OF ISSUED UNITS OF BLOOD**

If blood is issued for transfusion and then a change in the patient's clinical status or other difficulty necessitates a delay in the transfusion, the following must be adhered to:

- 1) Return the blood to the Blood Bank as soon as possible, but always before 30 minutes has elapsed since issuance. Blood stored at 1°C to 6°C warms to 10°C in about 30 minutes at room temperature. Therefore, the blood transfusion must be either started or returned to the Blood Bank within 30 minutes from the time the unit was issued.
- 2) The entrance ports to the blood container must not have been penetrated or entered in any way so that sterility can be assured.
- 3) If the above conditions have been met, the blood may be brought back to the Blood Bank and be re-issued again when transfusion becomes possible.

## **BB - RELEASE OF CROSSMATCH BLOOD**

Blood that is crossmatched will be held for 72 hours and then released.

One person may pick up blood for ONLY one patient at a time. Only one unit of blood will be issued per patient except in an emergency.

## **BB - REQUESTS**

Requests for Blood Bank testing are made in the Hospital Information System through Order Entry, or by completing the Laboratory Requisition Form. The patient should have a Complete Blood Count done by this laboratory within 24 hours before transfusion.

### **Pre-Admission Surgical Patients**

The Type and Screen or Crossmatch procedures are always performed on the day of surgery. It is important that the blood sample used for compatibility testing represents the patient's current immunological status. Recent transfusion or pregnancy may evoke or stimulate production of unexpected antibodies.

The Blood Bank cannot accept testing results for Type and Screen or Crossmatch procedures performed at testing labs other than the BMH Bank since the samples would not be available for crossmatching if required.

## **BB - TRANSFUSION POLICY**

Type-specific blood (blood of the same group and Rh as the patient) is generally issued for transfusion. However, if the required group and Rh are not available, ABO compatible packed red cells may be utilized. Group A, Group B, Group O or Group AB packed red cells may be transfused to an AB recipient. Group O recipients **MUST** receive Group O blood. Group O packed cells may be transfused to a recipient regardless of the ABO type.

An Rh positive recipient may be transfused with Rh positive or Rh negative blood. An Rh negative recipient should **NOT** receive Rh positive blood except in an emergency situation with Pathologist approval and only if the patient does not have anti-D.

### **Informed Consent**

All patients undergoing non-emergent transfusions must be informed of the risks and benefits of blood and blood components and consent to their use. The physician should discuss the possibility of blood transfusion with the patient, the risk and benefits of transfusion, the methods whereby blood transfusion may be avoided or minimized, the positive and negative aspects of receiving homologous blood, and pre-donating and receiving autologous blood. The informed consent form documents that this discussion has taken place and must be signed by the patient.

## BB - TRANSFUSION REACTIONS

Any adverse symptoms or physical signs occurring during transfusion of blood or its components should be considered potentially a part of a life-threatening reaction.

The individual hanging the blood should take the following actions immediately:

- 1) STOP the transfusion to limit the amount of blood infused.
- 2) Keep the intravenous line open with the infusion of normal saline.
- 3) CHECK all labels, forms and patient identification to determine if the right patient received the correct blood or component.
- 4) Report the suspected transfusion reaction to Blood Bank personnel immediately.
- 5) Complete the information on the top part of the Transfusion Reaction form and send the form to the Blood Bank as soon as possible along with the discontinued unit.
- 6) Hives are considered a transfusion reaction and the transfusion should be stopped if the patient develops hives.

## **BB - URGENT ORDER FOR BLOOD**

An emergency order for crossmatched blood takes approximately 1 hour to complete if the patient does not have an antibody and if a type and screen needs to be performed. This usually requires a new blood sample to be drawn.

If a type and screen has already been performed within the last 72 hours, it takes approximately 30 minutes to crossmatch up to four units of blood.



## CLINICAL CHEMISTRY

Routine and STAT Clinical Chemistry tests are performed in the main laboratory. The telephone extension is 8311. Technical personnel provide twenty-four hour coverage. This section of the Laboratory operates 24-hours a day, 7 days a week. The types of tests performed are shown below:

### TESTING SCHEDULE

Monday	Tuesday	Wednesday	Thursday	Friday	Sat/Sun
Chem Tests	Chem Tests	Chem Tests	Chem Tests	Chem Tests	Chem Tests
Immunology	Immunology	Immunology	Immunology	Immunology	Immunology
Therapeutic Drug	Therapeutic Drug	Therapeutic Drug	Therapeutic Drug	Therapeutic Drug	Therapeutic Drug
Drugs of Abuse	Drugs of Abuse	Drugs of Abuse	Drugs of Abuse	Drugs of Abuse	Drugs of Abuse

**Cobas 6000:** Chemistry Profiles: Basic Metabolic, Comprehensive Metabolic, Electrolytes, Hepatic and Lipid.  
 Acetaminophen, Alanine Amino Transferase (ALT), Albumin, Alkaline Phosphatase, Ammonia, Amylase, Aspartate Amino Transferase (AST), Calculated LDL, Carbamazepine (Tegretol), Carbon Dioxide, Chloride, Cholesterol, Cortisol, Creatine Kinase, Creatinine, C-Reactive Protein (CRP), C-Reactive Protein - high sensitivity, Digoxin, Direct Bilirubin, Estradiol, Ethanol, Fentanyl, Ferritin, Free T3, Free T4, Folate, Follicle Stimulating Hormone (FSH), Gamma Glutamate Transferrin (GGT), Gentamicin, Glucose, HDL-Cholesterol, Hepatitis A IgM, Hepatitis B Core IgM, Hepatitis B Surface Antibody, Hepatitis B Surface Antigen (HBsAg), Hepatitis B Surface Antigen Confirmatory Test, Hepatitis C Antibody (HCV), Hemoglobin A1c, Hormone Chorionic Gonadotropin, quantitative ( $\beta$ -hCG), Iron, Lactate Dehydrogenase (LDH), Lactic acid, Lipase, Lithium, Luteinizing Hormone (LH), Magnesium, Microalbumin, Parathyroid Hormone Intact (PTH Intact), Phenytoin (Dilantin), Phosphorus, Potassium, Pro BNP, Prostate Specific Antigen (PSA), Protein, Rheumatoid Factor, Rubella, Salicylate, Sodium, Theophylline, Thyroid Stimulating Hormone (TSH), Tobramycin, Total T3, Total T4, Total Bilirubin, Total Iron Binding Capacity (TIBC), Triglycerides, Troponin-T, Urea Nitrogen, Uric Acid, Valproic Acid, Vancomycin, Vitamin B12, Vitamin D.  
 CSF: Protein and Glucose.

**MEDTOX:** Amphetamines, Barbiturates, Buprenorphine, Benzodiazepine, Cocaine, Methadone, Methamphetamine, Opiates, Oxycodone, Phencyclidine, Propoxyphene, Tetrahydrocannabinol, Tricyclics.

**Manual Testing:** STAT HIV (for needlesticks and prenatal Mothers with unknown HIV status), Beta hydroxybutyrate, Fluid pH except Pleural Fluid which is performed by the Respiratory Therapy Department.

## HEMATOLOGY

The Routine Hematology Laboratory performs all blood counts and coagulation testing. Additional analyses are body fluid cell counts and bone marrow preparations. This section operates 24-hours a day, with many analyses available on a STAT basis 24 hours a day.

Bone marrow biopsies are provided in conjunction with the Histology Section. Consultation on peripheral and marrow smears is available with the Pathologist.

Special stains may be considered following consultation with the Anatomic Pathology Department (Ext. 8311).

### **Specific Requirements: Body Fluids Other than Cerebrospinal Fluid**

Body fluids other than cerebrospinal fluid should be collected in an EDTA anticoagulated tube for cell counts to prevent clotting of the specimen.

## **MICROBIOLOGY SECTION**

Regular Microbiology personnel are on duty from 0700 to 1530 on weekdays and 0700 1500 on weekends and holidays. Twenty-four hour coverage is provided for emergency Gram stains, rapid group A strep testing on throat swabs, rapid antigen testing for influenza A & B, Legionella and RSV and specimen planting. Gram stains from positive blood cultures are read and reported on a 24/7 basis.

### **Specimen Collection**

Most microbiology specimens should be collected by the physician or by the patient at home (stool & sputum samples). The laboratory does not have sufficient privacy for collections that require the patient to disrobe. Wound, drainage and skin scraping samples are best collected by the trained physician to ensure testing of appropriate material. The laboratory does not collect naso-pharyngeal swabs or washings required for pertussis, RSV testing or influenza testing.

The laboratory will collect blood cultures and clean catch urine for culture.

Generally, all specimens must be received in Microbiology within 1 to 2 hour(s) of collection. Swabs and other material refrigerated for up to 24 hours will be accepted. Special transport media for anaerobes and viral culture are available. Stool for parasite examination, white blood cells or culture must be placed in fixation within half an hour of collection. Refer to specific test pages in the Test Menu for individual guidelines.

### **Anaerobic Cultures**

The Microbiology Laboratory processes specimens for isolation and identification of anaerobic bacteria. Specimens for anaerobic culture must be submitted in appropriate anaerobic transport media (available in Microbiology) and should be accompanied by a specimen for aerobic culture from the same site. Specimens from non-sterile sites having anaerobic bacteria as a component of the normal flora are generally not acceptable for anaerobic culture. The processing of such specimens will be considered on a case-by-case basis.

Examples of such specimens are: Throat swab, sputum or bronchoscopic specimens contaminated with upper respiratory secretions, feces or rectal swabs, urine, vaginal or cervical swab, material from abdominal wounds contaminated with upper respiratory or GI tract secretions.

## **MICRO - ANTIMICROBIAL SUSCEPTIBILITY TESTING**

Antimicrobial susceptibility testing is performed on isolated pathogens by specific site in accordance with national laboratory standards. All culture requests are understood to be “C&S” requests. (The determination to perform an antimicrobial susceptibility test on any given isolate is made in the Microbiology Laboratory, based upon identification of the isolate and the source of the culture.) Requests for additional susceptibility testing should be made by the clinician directly to the Microbiology Laboratory. We will attempt to provide additional test results as technically possible, including sending samples to another laboratory as needed. Consultation with Infectious Disease or our Pathologists may be suggested.

Antimicrobial susceptibility testing is performed routinely using an automated system. Interpretation of these values is based upon achievable drug levels in body fluids and tissues. This information can be found in various physician handbooks and in pharmaceutical literature. Organisms, which are not suitable for automated MIC tests, will be tested by the Kirby-Bauer disc diffusion method. This method provides the S, I, R category calls only.

## **MICRO - BLOOD CULTURES**

All routine blood cultures are screened for aerobic and anaerobic organisms. All organisms isolated from blood cultures are identified. Antimicrobial sensitivity tests are performed on most aerobic isolates. Certain organisms, when recovered, are suggestive of contamination from skin. These include coagulase negative Staph sp., diphtheroids, Propionibacterium sp., and Bacillus sp. However, clinical circumstances must be considered in evaluating the significance of any blood isolate.

## **MICRO - GENERAL BACTERIOLOGY**

This section receives and processes specimens for routine culture. The specimens are accessioned, inoculated and incubated. Appropriate transfers are made to isolate and identify human pathogenic bacteria, and perform appropriate susceptibility testing. The sections below give a brief description of the major sub-areas of bacteriology and the other areas that comprise Microbiology.

## MICRO - MISCELLANEOUS CULTURES

Specimens from normally sterile sites such as C.S.F., bone marrow, surgical specimens, joint fluids, pleural and peritoneal fluids, etc., are cultured for aerobic pathogenic organisms. Anaerobic pathogens may be detected by routine cultures; however, be aware of the special requirements for the isolation of anaerobes (see below). If an anaerobic infection is suspected, a specimen should be submitted for anaerobic culture.

Bone marrow, eye swabs, joint fluids and spinal fluids are routinely screened for fast growing aerobic pathogenic bacteria, including Haemophilus sp. and pathogenic Neisseria.

Genital tract specimens are routinely cultured for aerobic pathogenic organisms (and tests for Neisseria gonorrhea, Chlamydia trachomatis and Trichomonas vaginalis are routinely performed by the PCR method. However, if Haemophilus ducreyi, or Gardnerella vaginalis is suspected, a special request should be made. A graded gram stain or wet prep is appropriate for evaluation of vaginosis as opposed to vaginal culture.

Specimens from wounds, abscesses, incisions and pus are screened for non-fastidious fast-growing aerobic organisms. If an anaerobe is suspected, a specimen must be properly submitted. See the specific anaerobic culture listings for details.

## MICRO - MYCOBACTERIOLOGY (ACID FAST, TB)

Mycobacteriology deals with detection, isolation and identification of acid fast bacilli (AFB) Mycobacteria from clinical specimens and includes both smear and culture procedures. Specimens in Mycobacteriology commonly fall into one of six categories. These are:

- 1) Respiratory, including sputum, bronchial washings and brushings, and tracheal aspirates.
- 2) Urine.
- 3) "Sterile" pus.
- 4) Sterile body fluids, including blood.
- 5) Biopsied tissue specimens.
- 6) Stool / feces.

Category 1, 2 and 6 specimens are decontaminated with an alkali solution prior to inoculation on selective slants and liquid growth media. Category 3-5 specimens are incubated directly on a non-selective Mycobacterial culture slant. The slants are routinely incubated for 8 weeks before a final negative result is reported.

Acid fast smears (either concentrated or direct) are reported with 30 hours of receipt of sample in Microbiology. Culture updates are reported weekly after an initial 3 weeks of incubation.

Mycobacterium tuberculosis and other acid fast isolates are sent to the Vermont Department of Health for culture and susceptibility testing. Urine for AFB does not include a smear. Stool for AFB is not accepted on Fridays. Blood cultures for AFB are collected in yellow isolator tubes and sent to the University of Vermont Medical Center.

In Addition, Mayo Clinical Laboratories offers nucleic acid testing for *M. tuberculosis* as appropriate.

## MICRO - MYCOLOGY

This area deals with the detection, isolation and identification of fungi from clinical specimens, and includes various smears and microscopic procedures for the direct detection of fungi within clinical material, as well as cultures. Specimens for Mycology commonly fall into one of several categories.

These are:

- 1) Superficial scrapings and clippings including hair, nails, skin and mucous membranes.
- 2) Respiratory: sputum, tracheal aspirates, bronchial washings, and brushings.
- 3) Sterile body fluids.
- 4) Biopsied tissues.

Category 1 and 2 specimens are inoculated onto both selective and non-selective fungal media. Category 3 and 4 specimens are inoculated onto a non-selective fungal medium. Fungal cultures are routinely incubated for 4 weeks before a final negative result is reported. KOH on category 1 specimens are reported with 30 hours. Culture updates are sent weekly. Yeast isolates are identified in the Microbiology Laboratory as either presumptive Candida albicans or Yeast not Candida albicans. Further identification or susceptibilities testing can be requested. The testing will be sent to a reference laboratory. Mold isolates are sent to a reference laboratory for identification.



## MICRO - RESPIRATORY CULTURES

Nose, naso-pharyngeal swabs, throat, sputum, bronchial and tracheal aspirations are considered respiratory tract specimens. All specimens from these sites will be screened for fast-growing aerobic pathogenic organisms and certain fastidious isolates of possible clinical significance. Screening cultures and antigen detection for group A beta Strep are also available upon request.

Examples of organisms not isolated by routine culture are: Neisseria gonorrhoeae, Corynebacterium diphtheriae and Legionella pneumophila. For information on culture of non-routine organisms, see Culture Test Listing or call Laboratory if not included.

Throat specimens are to be collected so as to avoid contamination with organisms from mouth, tongue or dentures. Throat specimens designated for group A Strep will be screened for that organism only. Throat specimens for Neisseria gonorrhoeae will be screened for that pathogen only and must be plated at the time of collection.

## **MICRO - SPECIAL SUSCEPTIBILITY TESTS**

Tests falling into this category must be specifically requested within 72 hours of submission of the clinical specimen. Blood culture isolates are an exception to this rule, being retained for 4 weeks or longer on request. Special susceptibility tests include the following:

- 1) Testing an isolate against antimicrobials not included in our routine panels. The Kirby-Bauer (disc method) will be utilized in this case, yielding category (not MIC) results. An additional charge will be levied in such cases. In most cases, MIC determinations for antimicrobial not included in our regular panels will have to be submitted to a reference laboratory.
- 2) Testing of a patient's serum for bacteriocidal level against a clinical isolate. Specimens for such tests will be submitted to a reference laboratory.

## **MICRO - SPUTUM SPECIMENS**

Instruct the patient to remove dentures, rinse mouth and gargle with an antiseptic mouthwash, cough deeply and expectorate into a sterile container. Cap tightly and submit to Laboratory.

All expectorated sputum specimens will be subjected to macroscopic and microscopic evaluation prior to accepting the specimen for culture. The presence of foreign bodies or  $\geq$  25 squamous epithelial cells per low per field will be considered grounds for rejection of the specimen based upon quality. Specimens obtained by trans-tracheal or bronchial aspiration will not be subjected to screening. Use of these collection techniques must be clearly indicated on the requisition form.

## **MICRO - SUBMISSION OF SPECIMENS**

### **TECHNIQUE AND AVAILABILITY:**

Specimens for Microbiology must be collected using aseptic techniques. Contamination with extraneous normal flora from the patient's skin or with environmental organisms leads to confusing and erroneous results. Specimens must be transported to the Laboratory in sterile, leak-proof containers. We follow the Laboratory policy for acceptance or rejection of specimens. Please consult the test listing section for timing requirements for submission following collection. All specimens should be brought to the Main Laboratory or Routine specimens may be dropped off at Richards Building during the hours of 7 to 6 pm on Weekdays and at 8 to 12 pm on Saturdays. Laboratory personnel will accession tests as ordered and give to the Microbiology section

### **REFLEX TESTING:**

A throat culture screen for group A strep will be performed whenever an ordered group A strep antigen screen has tested negative. This reflex testing is in compliance with manufacturer's recommendations. Because of this requirement, we ask that 2 throat swabs be collected and submitted with each group A strep antigen test request.

## **MICRO - URINE CULTURES**

Specimens for routine urine culture (voided and catheterized) can be submitted to the Main Laboratory at any time. Urine specimens will be cultured for the aerobic, rapid growing organisms generally involved in urinary tract infections.

Non-catheterized urine samples must be obtained by specific “clean catch” method to avoid contamination by skin, fecal or vaginal organisms.

All urine samples are cultured quantitatively and a colony count is reported. Decisions for susceptibility testing are made based on colony count, purity of the organisms found and method of collection.

## **MICRO - VIRAL CULTURES**

Specimens for viral testing must be collected and transported in special holding media, and in some cases, with rigid temperature requirements. Therefore, the laboratory should be notified in advance of any such collections so that proper arrangements can be made. Antigen detection procedures for Respiratory Syncytial Virus and Influenza A & B are available in the Microbiology Laboratory.

Specimens for viral isolation are referred to a reference laboratory.

## SEROLOGY

**Manual Testing:** STAT HIV (for needlesticks and prenatal Mothers with unknown HIV status), Rheumatoid Arthritis Screen, Mononucleosis Screening, Serum and Urine hCG testing at all times and Syphilis screen (RPR) on Mondays.

## URINALYSIS

The Urinalysis Section Laboratory performs routine urinalysis.

**SIEMENS STATUS:** Qualitative hCG.

**Manual Testing:** STAT HIV (for needlesticks and prenatal Mothers with unknown HIV status), Beta hydroxybutyrate, specialized urine tests as well as occult blood analysis of feces and gastric contents.



## **SPECIMENS REFERRED TO REFERENCE LABORATORIES**

### **Cytopathology**

If there is a delay in delivery to the Laboratory, fixed specimens should be refrigerated.

### **SUPPLIES:**

The following supplies are available to physicians' offices from the Laboratory:

- Instructions to the Patient for urine / sputum collection
- Sterile containers for urine and sputum.
- Requisitions
- Biohazard specimen bags
- Thin Prep collection vials with spatula and Endocervical brush
- Endocervical brooms

## **PATHOLOGY SPECIMENS**

**Except for frozen sections, all pathology specimens are processed by the University of Vermont Health Network.**

All specimens must be submitted to the BMH Main Laboratory accompanied by the appropriate completed requisition, including relevant history and pre-operative diagnosis. Responsibility for providing all required information rests with the clinician requesting the consultation. Please consult the BMH Specimen Collection Guide or Test Menu for appropriate fixatives and transport media.

Requisitions that may be used for the various types of pathology and cytopathology specimens are shown in the pictures on the following pages.

## PATHOLOGY-AUTOPSY

**Brattleboro Memorial Hospital offers non-medical-legal service for performing autopsies based on certain criteria. The criteria include:**

- The cause of death is uncertain;
- The cause of death is unexpected or a major diagnosis is in doubt;
- Medical complications of uncertain etiology exist;
- A potentially hereditary disease exists with potential inherited sequel;
- The patient belongs to a medical or study protocol;
- The death occurs in the peri-operative or post-operative time period;
- A public health issue exists;
- Death occurs in an obstetrical, neonatal, pediatric or adult patient under the age of 40.

Current information on the performance of autopsies is available in the BMH Autopsy policy on SharePoint (*last reviewed January, 2020*).

In certain cases, deaths may be reportable to the Medical Examiner of Vermont State. Current information on cases for the Vermont Medical Examiner is recorded in the BMH policy on SharePoint entitled Medical Examiner Cases for BMH (*last reviewed/revised February 2020*).

# REQUISITION FOR HEMEPATHOLOGY/FLOW CYTOMETRY AND GENETIC TESTING

University of Vermont MEDICAL CENTER		Hemepath / Flow Cytometry / Genetic Laboratory Form 111 Cordwainer Avenue • Burlington, VT 05401 • (802) 847-6121 www.uvmhealth.org/mccosmssbs		PATIENT DEMOGRAPHIC INFORMATION	
Provider: _____ First and last name required				NAME (LAST, FIRST, MI) _____ _____ _____	
				PANG - MPN _____ DOB _____ SSN _____ SOCIAL SECURITY NO. _____	
ACCOUNT INFORMATION / REPORT CODE		Additional copy of report to (first and last name required):		CLIENT ID:	
URM - Rutland Memorial Hospital (802) 257-8311					
<b>BILLING INFORMATION</b>		RESPONDING PARTY NAME		PHONE NO.	
<input type="checkbox"/> BILL INSURANCE FULL IN LINES 1-5 OR SEND FACE SHEET <input type="checkbox"/> BILL CLIENT ACCOUNT FULL IN LINES 1-5 OR SEND FACE SHEET <input type="checkbox"/> NO INSURANCE BILL PATIENT FULL IN LINES 1-2		1 ADDRESS (STREET, TOWN, STATE, ZIP CODE) 2 MEDICARE NO. 3 MEDICAID NO. 4 INSURANCE COMPANY NAME 5 SUBSCRIBER NAME		MANAGED CARE MEDICAID NO. STATE CERT. NO. GROUP NO. EMPLOYER	
*FOR MEDICARE PATIENTS: Medicare will only pay for services that it determines to be "reasonable and necessary" under section 1832 (b)(1) of the Medicare law. If Medicare determines that a particular service, although it would be otherwise covered is not "reasonable and necessary" under Medicare payment standards, Medicare will deny payment for that service.					
Preauthorization: For Molecular and Chromosome testing please obtain preauthorization from the patients insurance prior to sample collection.					
<b>DIAGNOSIS INFO</b>		Signs, symptoms, pertinent clinical history and lab data required. ICD-10 codes must reflect the same information that appears in the patients medical record. No rule out R/O.			
<b>SAMPLE INFO</b> Please Contact Customer Service prior to sending sample 800-891-2799 or 847-5121. Collect Date: ____/____/____ Collect Time: ____:____		<b>BONE MARROW MORPHOLOGIC EVALUATION</b> (Check all that apply) <input checked="" type="checkbox"/> Core biopsy (10% Zinc Formalin) <input checked="" type="checkbox"/> Clot/Particle sections (10% Zinc Formalin) <input checked="" type="checkbox"/> Peripheral Blood _____ Smears _____ EDTA _____ *Current CBC and Differential results are required for complete evaluation.			
<b>SAMPLE TYPE (Check ✓)</b> <input type="checkbox"/> Blood <input type="checkbox"/> Bone Marrow (BM) <input type="checkbox"/> Lymph Node <input type="checkbox"/> Tissue / Tumor <input type="checkbox"/> PCC Other: _____		<b>MEDIA (Check ✓)</b> <input type="checkbox"/> Na Heparin <input type="checkbox"/> BM Media <input type="checkbox"/> EDTA <input type="checkbox"/> Formalin Time in Formalin: _____ <input type="checkbox"/> RPMI <input type="checkbox"/> Hanks Solution <input type="checkbox"/> Other: _____		<b>BONE MARROW WITH REFLEX TESTING</b> (Check all that apply) <input checked="" type="checkbox"/> For a new diagnosis <input checked="" type="checkbox"/> For a follow-up of a known diagnosis (indicate dx here) _____ <input checked="" type="checkbox"/> For possible new onset acute leukemia or pancytopenia (Collect extra EDTA Tube) <input checked="" type="checkbox"/> For Evaluation of myeloma or MGUS (Collect extra Sodium Heparin Tube) <input checked="" type="checkbox"/> This patient requires additional non-reflex testing (indicate testing here) _____	
<b>LAB USE:</b> Other Testing: _____		<b>BONE MARROW REFLEX OPTION:</b> If you wish to decline reflex indicate here (Check all that apply) <input type="checkbox"/> I decline CytoGenetics <input type="checkbox"/> I decline Flow Cytometry <input type="checkbox"/> I decline FISH <input type="checkbox"/> I decline Mutational Analysis <input type="checkbox"/> I decline Multigene Panel (genomic testing)		<b>Leukemia / Lymphoma Panel</b> Bone Marrow collect: BM Media or NaHep Blood collect NaHep Lymph Node collect in Hanks Solution PCC/Tissue/Tumor collect -Hanks Solution <b>FISH CONGENITAL</b> Blood collect NaHep DiGeorge Syndrome 22q11.2 Williams Syndrome 7q11.23 <b>FISH NEOPLASTIC (BM Media or NaHep)</b> t(8;14) MYC/IGH and MYC Burkitt's Lymphoma t(8;21) RUNX1/RUNX1T1 Acute Myeloid Leukemia (AML) t(9;22) BCR/ABL Chronic Myelogenous Leukemia (CML) t(11;14) CCND1/IGH Mantle Cell Lymphoma 11c23 MLL Rearrangement AML, ALL, MDS t(12;21) ETV6/RUNX1 Acute Lymphoblastic Leukemia (ALL) t(14;18) BCL2/IGH Follicular Lymphoma t(15;17) PML/RARA Acute Promyelocytic Leukemia (APL) t(16;16) CBF6 Rearrangement AML with Eosinophilia CLL FISH Panel	
<b>INITIAL TEST</b>		<b>REFLEX CRITERIA</b>		<b>ADDITIONAL OPT. BILLED</b>	
Bone marrow aspiration and/or biopsy		Suspicion of a hematolymphoid malignancy		Examples include 00203, 00204, 00291, 00104-88189, and additional codes as may be applicable	
<b>Genetics Testing:</b> Submission of an order for any Laboratory test constitutes the certification to UVMHC that (1) the Ordering Provider has obtained the "Informed Consent" of the patient as required by any applicable state or federal laws with respect to each test ordered; and (2) the Ordering Provider has obtained from the patient authorization permitting UVMHC to report results of each test ordered directly to the ordering physician.		<b>REFLEX TEST(S):</b> CytoGenetics, flow cytometry, FISH, PCR, mutational analysis, and/or genomic testing			
<b>SIGNATURE</b> _____ Please provide signature with lab orders		DATE _____		TIME _____	

UVMHC LABORATORY COPY



LAB Form # 23-040125 (Rev. 2/13/2018)

# GYN CYTOLOGY AND GENERAL REQUISITION



OUTPATIENT LABORATORY ORDER FORM  
111 Colchester Avenue • Burlington, VT 05401  
(802) 847-5121 • 1-800-891-2799 • Fax: (802) 847-5935  
UVM Labs TestCatalog.org

## PATIENT DEMOGRAPHIC INFORMATION

NAME (LAST, FIRST, MI)

UVMCC - MRN

DOB

SEX

CM

CF

SOCIAL SECURITY NO.

Provider: \_\_\_\_\_  
(first & last name)

Ordering provider please provide signature below\*

ACCOUNT INFORMATION / SUBMITTER CODE

HBMH- Brattleboro Memorial Hospital (802) 257-9311

ADDITIONAL COPY OF REPORT TO (First and Last Name Required)

CLIENT I.D.

## BILLING INFORMATION

- ☐ BILL INSURANCE  
FILL IN LINES 1-5  
OR SEND FACE SHEET
- ☐ BILL CLIENT ACCOUNT  
FILL IN LINES 1-5  
OR SEND FACE SHEET
- ☐ NO INSURANCE BILL PATIENT  
FILL IN LINES 1-5

X Client Bill

## DIAGNOSIS INFORMATION

Clinical diagnosis (ICD-10), signs, symptoms, pertinent history, etc. (Include lab rules regarding medical necessity, see "Samples Information" on back)

## SPECIMEN INFORMATION

Collect Date: / /

Collect Time: / /

Fasting: ☐ Yes ☐ No

Urine: ☐ Yes ☐ No

Other: ☐ Yes ☐ No

Phone to #

FAX 002-257-0287

(24 Hour Urine Volume)

## PANELS Panel info on back

BMP Basic Metabolic Panel T

CMP Comprehensive Metabolic Panel T

LYT Electrolyte Panel T

LPR Lipid Panel T

LIVR Hepatic Panel T

PNAT Treadmill Panel B, L, R, ✓

THCA6 Thyroid Cascade T

CHEMISTRY

ALB Albumin T

ALP Alkaline Phosphatase T

ALT ALT T

AMY Amylase T

ANAIFA (ANA) Anti Nuclear Ab. FA T

ANCAIF (ANCA) Anti Neutrophil Ab. FA T

AST AST T

DBIL Bilirubin Direct/Indirect T

CDP Celiac Disease Panel T

CRPP C-Reactive Protein T

CA125T Cancer Antigen 125 T

CA Calcium, Total T

CEA CEA T

CHOL Cholesterol, Total T

CK CK T

DNA Anti ssDNA T

BUN Blood Urea Nitrogen T

CREAT Creatinine T

SDRPF Electrophoresis, Serum T

FER Ferritin T

SERFLC Free Light Chain, Serum T

FSH FSH T

GGT GGT T

GLU Glucose T

GTI Glucose, 1 hr Glucose Tolerance Test X

HCGS HCG Pregnancy T

HCGUM HCG Misc Pregnancy T

HDL HDL Cholesterol T

HABRI Hepatitis A Total, Ab T

HAAB2 Hepatitis A Total, Ab w/ Reflex T

HABRI2 Hepatitis B Ab (Surface) T

HBSAB Hepatitis B Antigen (Surface) T

HBCOR Hepatitis B Core Ab T

HSCOR2 Hep C Ab w/ Reflex PCR T

HATC Hemoglobin A1C T

SIGNATURE PROVIDER'S SIGNATURE

## MICROBIOLOGY

IGAS Iga T

IGGS IgG T

IGNS IgM T

IRGN Iron T

IBC Iron Binding Capacity T

LDR Lactate Dehydrogenase T

LEAD Lead T

LH Luteinizing Hormone T

LIPA Lipase T

LYNAB Lyme Antibody T

MEASL Measles IgG Ab T

MG Magnesium T

MPDS Monoclonal Protein Dx Panel T

MDMD Monospot T

MUWPG Mumps IgG Ab T

NTBHP NT BNP On T

PTHIN Parathyroid Hormone, Intact X

PHOS Phosphorus T

K Potassium T

PROL Prolactin T

PSA Prostate Specific Antigen T

PSAB PSA Screen T

RFS Rheumatoid Factor T

RU8G2 Rubella IgG Ab T

NA Sodium T

SYPH Syphilis Serology T

T3, Free T3, Free T

T4, Free T4, Free T

TESTO2 Testosterone T

TEST2 Testosterone, Total and Free T

THYAB Thyroid Ab Profile T

THYH3 Thyroid Stim Hormone T

THFS Transferrin T

TRIG Triglycerides T

T3, Total T3, Total T

TRIC Acid T

VALP Valproic Acid T

VARH Varicella IgG Ab T

B12 Vitamin B12 T

WTD Vitamin B, 25-OH, Total T

## MICROBIOLOGY

Site: \_\_\_\_\_

Culture and Gram Stain\* T

CTGC Chlamydia T

LAB215 Clinic Collect COVID-19 SW

SXBBD Group B Strep, PCR SW

THSC Pharyngeal Culture SW

IDFLUR Influenza / RSV, PCR X

HSVLM Herpes Simplex, PCR X

VZVLUM Varicella-zoster, PCR X

CBC CBC T

CBCDF CBC with DW L

HGB Hemoglobin L

HCT Hematocrit L

PRD Prothrombin Time B

PTT PTT B

RET Reticulocyte Count L

SWE Sed. Rate, Westergren L

FECAL TESTS

C, Bifidob, PCR U

FECBD Fecal Bacterial Pathogen X

FELF Fecal Lactoferrin for WBC U

GICR Giardia/Cryptosporidium O

HPSA H. pylori Fecal Ag U

OCCB Occult Blood, Feces, Diagnostic U

SOCBR Occult Blood, Feces, Screening U

OP Ova and Parasite O

URINE TESTS

UMLSU Albumin-to-Creatinine Ratio U

AMCOM UA Chemical + Sediment U

ARKUA UA Chemical U

AREUR UA Sediment U

LAHSGS UA Sediment w/ Reflex to URIC U

LAB215 UA Chem + Sediment w/ Reflex to URIC U

VDPG Depressants Panel U

VSTIM Stimulants Panel U

VOPB Opioids Panel U

VPOXY Polydrugs Use Panel U

For specimen and container info see back of form

IF YOU WISH TO DECLINE REFLEX INDICATE TESTS HERE

DATE TIME

Form # 23-314951 (7/21/21)

UVMCC LABORATORY COPY

BMH LAB GUIDE  
GENERAL INFORMATION



# SURGICAL PATHOLOGY NON-GYN CTYOLOGY REQUISITION

<b>University of Vermont MEDICAL CENTER</b> SURGICAL PATHOLOGY/NON-GYN CYTOLOGY REQUISITION 111 Colchester Avenue • Burlington, VT 05401 • (802) 847-5121 <a href="http://www.uvmhealth.org/medcenterlabs">www.uvmhealth.org/medcenterlabs</a>		<b>PATIENT DEMOGRAPHIC INFORMATION</b> NAME (LAST, FIRST MI) UVMHC - MRN DOB SEX SOCIAL SECURITY NO.	
Ordering Provider _____ (First and Last Name)			
REPORT CODE/ACCOUNT NAME <b>Brattleboro Men's Hosp. 002-257-0311</b>		ADDITIONAL COPY TO (First and Last Name Required) CLIENT I.D.	
<b>BILLING INFORMATION</b> <input type="checkbox"/> BILL INSURANCE FILL IN LINES 1-5 OR SEND FACE SHEET <input type="checkbox"/> BILL CLIENT ACCOUNT FILL IN LINES 1-5 OR SEND FACE SHEET <input type="checkbox"/> NO INSURANCE BILL PATIENT FILL IN LINES 1-2		RESPONSIBLE PARTY NAME Residents must document as attending physician ADDRESS (STREET, TOWN, STATE, ZIP CODE) MEDICARE NO. MEDICAID NO. INSURANCE COMPANY NAME SUBSCRIBER NAME SUBSCRIBER'S DOB RELATIONSHIP EMPLOYER	
		PHONE NO. MANAGED CARE MEDICAID NO. STATE CERT. NO. GROUP NO.	
<b>SAMPLE AND DIAGNOSIS INFORMATION AREA - COMPLETE THIS SECTION FOR ALL SPECIMENS.</b>			
COLLECTION DATE	COLLECTION TIME	FAX TO #	CALL TO #
	AM PM		
CLINICAL DIAGNOSIS (ICD-10) SIGNS, SYMPTOMS, PERTINENT HISTORY AND LAB DATA IS REQUIRED, NO R/D			
REFLEX OPTIONS: If you wish to decline reflex indicate here <input type="checkbox"/> Do not perform any H&E testing on this sample. H&E testing is not performed on Case Specimens unless specifically requested. <input type="checkbox"/> Do not perform Estrogen and Progesterone receptor testing on breast specimens with only ductal carcinoma in situ (DCIS). <input type="checkbox"/> Do not perform Cytogenetics on non-tumor, fully karyo >1000, bone marrow or soft tissue biopsies. <input type="checkbox"/> Do not perform MMR1, MMR2, MMR3, MMR4 testing on patients with colon cancer or malignant polyps, colorectal adenomas, or colorectal cancer in situ (DCIS). <input type="checkbox"/> Do not perform GeneFlow Solid Tumor or "non-solid cell lung cancer" or "peritoneal, suspected lung cancer primary" and diagnosed unresectable. <input type="checkbox"/> Do not perform FISH (FISH) testing on "non-solid cell lung cancer" or "peritoneal, suspected lung cancer primary" and diagnosed unresectable or advanced Head and Neck squamous cell carcinoma.			
SEE BACK OF THIS FORM FOR ANATOMIC PATHOLOGY REFLEX TESTING CRITERIA			
<b>SURGICAL PATHOLOGY (Tissue Samples)</b> Tissue Submitted/Method Obtained Time in Formalin:		<b>NON-GYN CYTOLOGY TESTING (Cells/Fluid)</b>	
		<b>Fine Needle Aspirate (FNA)</b> FNA Palpation FNA Radiology Guided <b>Respiratory</b> Sputum cytology Bronchial washing cytology Bronchial brushing cytology Transbronchial FNA Bronchoalveolar lavage cytology Specimen request on BAL <b>Gastrointestinal</b> Esophageal washing cytology Esophageal brushing cytology Gastric washing cytology Gastric brushing cytology Colonic brushing cytology <b>Fluids</b> Pleural fluid cytology Peritoneal fluid / ascites cytology Peritoneal washing cytology Diaphragmatic washing cytology Diaphragmatic brushing cytology	<b>Urine</b> Urine, voided, cytology Urine, catheterized, cytology Urine, barbottle, cytology Renal pelvis washing cytology Renal pelvis brushing cytology Ureteral washing cytology Ureteral brushing cytology <b>Neuroscience</b> CSF Cytology Skin Scraping cytology (Tzanck prep) Specify site <b>Other</b>
ORDERING PHYSICIAN SIGNATURE		DATE TIME	
ANATOMIC PATHOLOGY COPY PTH Form # 23-017154 (1/6/2022)			