

FACILITY: Veterans Affairs Medical Center: Pathology and Laboratory Medicine
1700 S. Lincoln Ave. Lebanon, PA 17042
Dr. Jan Abramczuk, MD, PhD, Medical Director
General Laboratory

LABORATORY WARD MANUAL

April 2014

The procedures contained in the Pathology & Laboratory Medicine Ward Manual are approved as developed by the Pathology & Laboratory Medicine staff; composed of Chief of Pathology and Laboratory Medicine Services (P&LMS) Lebanon and a QM committee composed of medical technologists. The Laboratory Manager, under the guidance of the Chief of Pathology and Laboratory Medicine Services (P&LMS) Lebanon, shall provide periodic review and approve all revisions. All procedures contained in this manual have been reviewed and approved by the undersigned.

Jan Abramczuk M.D., PhD
Chief, P&LMS, Lebanon

DIST: COS (20) - 2
Manager Clinical Support Services (700) - 2
Manager EC (500) - 2
Manager MH&BS (600) - 3
Manager PC (400) - 2
Manager AC/SS (300) - 2
Primary Care (400) - 20
Emergency Department (312) - 2
Acting Associate COS for Nursing (22) - 3
Camp Hill (410) - 10
Pathology & Laboratory Medicine (713) - 30
All physicians, PA's, and Nurse Practitioners
All wards

TABLE OF CONTENTS

Introduction

Section 1: Laboratory Testing Requests

List of Phone Numbers and Room Numbers	4
Laboratory Hours	4
Laboratory Requisitions	4
Laboratory Testing During Off hours	5
Emergency Requests (STAT)	5
Abbreviated Procedure for Entering Immediate Collect Orders in CPRS	5

Section 2: Laboratory Testing

Laboratory Reports	6
Critical Results Protocol	7
Critical Lab Result List	8
Specimen Collection	9
Sending Specimens to the Lab	10
Results Turnaround Time (TAT) Policy	10
Order of Blood Tube Collection	10
iFecal Occult Blood Specimen Collection - Preparation – Handling	10
Routine Urine Collection	11
Collection of 24 Hour Urine Specimens	11
Rejection of Specimens	12

Section 3: Supplies **Page 13**

Section 4: Procedures performed at Referral Laboratory **Page 13**

Section 5: Procedures Offered by Laboratory Service

Chemistry	14
Chemistry Tests	15
B-Type Natriuretic Peptide (BNP)	17
Rapid HIV	17
Collection of Urine Specimens for Chemistry Testing	17
Urinalysis	18
Hematology	18
Coagulation	19
Miscellaneous Procedures	20
Sperm Count and Semen Analysis	20
Spinal Fluid – Collection and Test Requests	20
Body Fluid – Collection and Test Requests	20
Cytology	21
Routine Sputum Collection	22
Surgical Pathology Specimens	22
Pathology Procedures	22

Section 6: Transfusion Service

Transfusion Service	23
Transfusion Reactions	25
Other Blood Products	26
Therapeutic Phlebotomy	26

Section 7: Cultures

MRSA Screens	26
Blood Cultures	27
Microbiology	27
Tissue Cultures	28
Swabs (for Wounds or Abscesses)	28
Swabs (for Throat cultures)	28
GC/Chlamydia Screen	28
Urine	28
Sputum	29
Stool	29
C. Difficile Testing	29
Parasitology	30
Mycobacteriology (AFB) Cultures	30
Mycology Cultures	30
Flu Testing	31
HP Fast	31

Section 8: Ancillary Testing

Ancillary Testing (Point of Care)	31
Ancillary Testing Sites for Lebanon VAMC	33

SECTION 1-INTRODUCTION

LIST OF PHONE NUMBERS AND ROOM NUMBERS

Main Lab (General Information)	Ext. 4188; Rm. 3
Blood Bank	Ext. 5958; Rm. 4
Chemistry /Special Chemistry	Ext. 4179; Rm. 3
Hematology/Coagulation	Ext. 4186; Rm. 3
Microbiology (Performed at Philadelphia VAMC)	(215) 823-5800 ext.6289/6290
Specimen Processing	Ext. 6137; Rm. 3
Urinalysis/Reference Lab Testing	Ext. 4188; Rm. 3
Phlebotomy	Ext. 6137; Rm. 3
Surgical Pathology/Cytology	Ext. 4181; Bld 1, Ground Fl.
Laboratory Office	Ext. 4191; Bld 1, Ground Fl

All inquiries concerning results should be directed to the section performing the tests. If information is needed regarding collection of specimens or requests for tests, call Specimen Processing.

LABORATORY HOURS

The laboratory is staffed 24 hours a day/ 7 days a week. Full staff is available 8am-4:30pm, Monday through Friday. At all other times, a reduced number of technologists are on duty.

To contact laboratory personnel outside regular hours, **page 3121**.
For blood products, call X5958 or x4188.

LABORATORY REQUISITIONS

All routine laboratory requests for laboratory testing are submitted through Computerized Patient Record System (CPRS).

Inpatient:

- Routine Lab Collect requests are printed on collection lists at 7am.
- Routine Lab Collect for ICU is automatically drawn at 5am unless otherwise specified.
- If a request is not for the routine 7am time, an Immediate Collect order ([detailed below](#)) must be entered.
- All STAT requests are to be paged to the laboratory when the Immediate Collect order is submitted. **page 3121**

Outpatient:

- Test requests from any clinic area are entered through CPRS and the "send patient" appointment list is printed in the laboratory daily.

- Test orders are acceptable 120 days prior to or/and 60 days following the patient visit. INR orders are acceptable 7 days prior to and 7 days forward of the patient visit due to more frequently scheduled visits.

Requests for surgical pathology (eSF515) and cytology (eSF541) must be requested on their respective forms.

LABORATORY TESTING DURING OFF HOURS

Due to reduced staff on duty during off tour hours, only testing that is essential to immediate patient care will be performed. Ward Collect Specimens should be delivered to the lab to insure timely processing and testing for optimal Veteran care. ALL testing from inpatient wards, ICU, and ED will be performed on all shifts.

All other laboratory tests are to be scheduled by the Lab Manager at ext. 4192.

EMERGENCY REQUESTS (STAT)

STAT requests are submitted through the computer using CPRS as Immediate Collects. Laboratory staff is notified through the paging system @ **3121**.

ABBREVIATED PROCEDURE FOR ENTERING IMMEDIATE COLLECT ORDERS IN CPRS

👉 STEP 1- SELECT MED LAB TESTS.....

Vista CPRS in use by: Wood,Robert M. (dhcserver)

File Edit View Action Options Tools Help

ZZTEST, BILLY LUTHER LAB Apr 26, 05 14:30 Primary Care Team Unassigned

000-00-5678 Jun 25, 1947 (57) Provider: ZANGWILL, BRUCE C

Flag Remote Data Postings CWAD

View Orders

All Orders - LABORATORY

Service Order Start / Stop Provider Nrs Clk C Sts

UNIVERSITY SERVICE MAIN MENU

1 Discharge/Transfer to... 82 ABD 2 Views

2 Transfer from ICU to 1 2A 40 IV FLUIDS... 83 MRI

3 ICU ADMISSION... 84 MRI/MRA

4 IMC/NHCU ADMISSION... 48 BLOOD PRODUCTS... 85 RESPIRATORY...

5 ADMISSIONS... 51 MEDICATIONS... 90 Consults

6 TELEMETRY ADMISSIONS... 52 NON VA MEDS 91 VASCULAR LAB STUDIES...

7 DETOX/PSYCH ADM... 60 PCA MORPHINE 92 CARDIOLOGY PROCEDURE

8 Allergies 61 I & O 93 ECG

9 Hep Well 62 HEP WELL 94 Echocardiogram

10 VITAL/MEASUREMENTS 70 MED LAB TESTS... 95 Transplant Menu

11 Vital/Measurements 71 Nursing Lab Order Menu 96 Care Coordination Menu

15 ACTIVITY ORDERS... 75 PREP FOR FLEX SIG 99 Nursing Free Text Order

16 RESTRAINTS... 76 Bowel Prep Menu (Inpatient O

20 DIETETICS... 80 RADIOLOGY... 99

81 Chest PA & Lat

>> VANDCO P&T vandco: Peak and Trough Do Trough 1/2 hour prior to next dose Do Peak 1/2 hour following next dose Zupanick,C lapsed

GLUCOSE BLOOD SERUM LC Zupanick,C lapsed

Cover Sheet Problems Meds Orders Notes Consults Surgery D/C Summ Labs Reports

Start

10:57 AM

☞ **STEP 2 – SELECT TEST**

☞ **STEP 3 – SELECT COLLECTION TYPE – IMMEDIATE COLLECT**

The screenshot shows the VistA CPRS interface. At the top, the patient information is displayed: ZZTEST, BILLY L, 000-00-5678, Jun 25, 1947 (55). The test selected is CBC PROFILE. The collection type is 'Immediate Collect' and the urgency is 'STAT'. The dialog box also shows the 'Available Lab Tests' list, which includes CBC PROFILE, CBC/ <CBC & DIFF>, CD10, CD19, CD2, CD20, CD38, CD4, and <HELPER T CELLS>.

☞ **STEP 4 – SELECT URGENCY – STAT**

☞ **STEP 5 – ENTER COLLECTION DATE/TIME – N for Now; or Selected date and time**

☞ **STEP 6 – ACCEPT/SIGN ORDER**

☞ **STEP 7- Notify the lab by pager (3121) that the order is in.**

SECTION 2-LABORATORY TESTING

LABORATORY REPORTS

- Completed laboratory reports are entered into Veteran Health Information System and Architecture (VISTA).
- As soon as results are verified by technical personnel, they appear in the computerized patient record system (CPRS).
- Any **"Critical Results"** will be called immediately to the ordering physician.

- **"Pending"** next to the order means that the specimen has not been collected.
- **"Collected" or "ACTIVE"** next to the order means that the specimen has been collected and is in the process of being tested, but results are not available.

CRITICAL RESULTS PROTOCOL

All Critical Results, to include referral laboratory testing, are called directly to the ordering physician within 60 minutes of discovery. Instant Messaging is used to alert the CBOC providers of a critical result. The provider is responsible for contacting the lab to receive the result.

The physician is required to read back these results. If the provider is with another Veteran patient, the provider will advise the lab tech. The lab tech will then state the patient's name and full social security number. The provider will confirm this information is written down and then will repeat back the test name and quantitative or qualitative result.

Weekday Dayshift 8:00AM-4:00PM

1. Call Ordering Physician- If specialist is unavailable, call primary care provider.
2. If no response after 2 pages, call Attending on Call and then ACOS Medicine or Surgery OR ACOS Primary Care for primary care patient OR CBOC Medical Director.
3. Call Chief of Staff.

Off tour hours (4:00PM-7:00PM weekdays)

1. Call operator to page the Primary Care physician on call
2. If no response after 2 pages,
Outpatient -Call Chief of Primary Care
Inpatient -Call Attending on call, if no response
Call ACOS for Medicine or Surgery depending on care line
3. Call Chief of Staff

Off tour hours (7:00PM-8:00AM, weekends, holidays)

1. Call Resident/Attending physician, Hospitalist, Night Float or ED
2. If no response after 2 pages, call ACOS Acute Care
3. **Outpatient**-Call ACOS PC or CBOC
3. Call Chief of Staff

The coverage list is on the INTRANET under training calendars.

CBOCs have cell phones and providers have pagers. Call the operator to have a provider paged if the number is unknown to lab personnel.

Critical Lab Result List CHEMISTRY

TEST & UNITS	LOWER LIMIT	UPPER LIMIT
Calcium mg/dL	6.5	12
CO2 mmol/L	15	40
Creatinine mg/dL	-	3.0
Glucose mg/dL	50	400
Magnesium mg/dL	1.0	4.5
Phosphorus mg/dL	1.8	6.0
Potassium mmol/L	3.0	5.8
Sodium mmol/L	125	150
Troponin ng/ml	-	>0.03
Digoxin ng/ml	-	1.7
Lithium mmol/L	-	1.5
Phenobarbital mcg/ml	-	40
Phenytoin mcg/ml	-	25
Theophylline mcg/ml	-	20
Vancomycin mcg/ml	Trough>20	
Gentamycin mcg/ml ***		Random & Trough >2.0

Positive HIV results are not critical but are to be called to the physician

HEMATOLOGY

Hemoglobin g/dl	8	18
Platelets k/uL	30	750
WBC k/uL	-	30
Absolute Neutrophil Count cells/mcL	<500	-
PT INR	-	4.0
APTT seconds	-	120

RESPIRATORY

Provider is notified of critical result by respiratory staff.

pH	7.3	7.5
pCO2 mmHg	30	50
pO2 mmHg	55	

MICROBIOLOGY

**Positive FLU results are not critical but are to be called to the physician.
The Primary Care Provider is notified with positive iFOBT results.**

CSF Culture	-	Positive
Blood Culture	-	Positive
MRSA	-	Positive
Rapid HIV	-	Positive
C Diff	-	Positive
VRE	-	Positive
KPC	-	Positive
AFB	-	Positive
CRE	-	Positive
ESBL	-	Positive
Shiga Toxin (Ecoli 0157)	-	Positive
Legionella Urine Antigen	-	Positive
Legionella Culture	-	Positive

ANATOMIC PATHOLOGY

- Frozen specimen if permanent findings are different
- New malignancy except Squamous and Basal cell carcinomas of the skin
- Any infectious organism seen on a body fluid smear
- Major discrepancy in diagnosis on a second review

SPECIMEN COLLECTION

Routine collection of specimens is performed by laboratory personnel daily at 5am (ICU Only) and 7am. For any other times, refer to the [Emergency Requests](#) section above.

Note: Patient identification using name and FULL SSN must be verified before any specimen is collected.

The phlebotomist may make 2 attempts at collecting blood. Another phlebotomist may make an additional 2 attempts at obtaining blood for testing. If still unsuccessful, provider must be notified.

SENDING SPECIMENS TO THE LAB

1. All specimens collected outside of the laboratory are submitted to the laboratory in Biohazard bags. These can be obtained from the Logistics Line Item Manager (LIM).
2. **ALL** specimens will be labeled with Full Name, Full SSN, date and time of collection, and the collector's initials.
3. The specimen is placed in the sealable part of the bag and the appropriate paperwork (e.g. printed copy of doctor's order) is placed in the side pouch.
4. All specimens are processed in the specimen collection area (Room 3).
5. STAT specimens are handed directly to laboratory personnel, so that processing will not be delayed.
6. Orders for testing must come from a Lebanon VHA provider.

RESULTS TURNAROUND TIME (TAT) The following laboratory guidelines are monitored by the Medical Center and Pathology & Laboratory Medicine QM Committees. For all delays in STAT testing, the laboratory will call the physicians.

- STAT tests 1 hour
- Routine <8 hours
- Contact the laboratory for TATs on Special Chemistries and Send Out tests.

The Expected TAT for Microbiology Reports:

Routine cultures	2 days
Blood cultures	7 days
Fungus cultures	4 weeks
AFB cultures	6 weeks

ORDER OF BLOOD TUBE COLLECTION

When multiple blood specimens are drawn at one time, the following "order of draw" is used to minimize the chance of tube additive contamination.

- Blood Culture tube (sterile yellow top containing SPS)
- Coagulation tube (light blue top)
- Clot activated tube (red top SST)
- Heparin-containing tube (light or dark green top)
- EDTA-containing tube (pink, white, or purple top)
- Oxalate/fluoride-containing tube (gray top)

IFECAL OCCULT BLOOD SPECIMEN COLLECTION

Specimen Collection:

1. Unscrew cap of the Fecal Collection Tube and remove Applicator Stick.
2. Randomly insert the Applicator Stick into the fecal sample from 3 to 6 times.
3. DO NOT CLUMP, SCOOP, OR FILL THE TUBE.

4. Return the Applicator Stick into the Fecal Collection Tube and tighten the cap thoroughly.

5. Shake the tube to mix the sample with the Extraction Buffer.

*******Stools with visible blood or tar-like should be sent the laboratory for processing and testing**

Labelling Requirements:

- Veteran's full name
- full SSN
- date and time of collection
-

Transportation:

- Place the Fecal Collection Tube in the specimen pouch of a Biohazard Bag.
- A copy of the doctor's order must accompany the specimen in the side pouch
- of the Biohazard bag.
-

Storage Requirements:

- After Fecal Collection Tube is inoculated, store at room temperature for up to 14 days.

Cautions:

- FOR IN VITRO USE ONLY
- Do not test beyond expiration date.
- Use new specimen collection tube for each test to limit cross contamination.
- Interference may be caused by menstrual bleeding, constipation bleeding, hemorrhoid bleeding, and urinary bleeding.

Frequency:

- Manufacturer recommendation is ONE sample

Limitations:

- Negative results may be obtained due to intermittent bleeding.
- Positive results may be obtained due to GI irritation caused by certain medications.

ROUTINE URINE COLLECTION

- Specimen:
- At least 12.0 mL. of freshly voided, mid-stream urine.
- All specimens must be collected in a chemically clean container with a tight fitting lid.
- Labelling Requirements:
- Label specimen cup (not the lid)
- Veteran's full name
- full SSN

- date and time of collection ***For urine specimens collected by outpatients: Date and time of collection will be recorded as time of accession.
- Transportation:
- Specimens must be transported to the laboratory within 2 hours of collection.
- Specimens may be refrigerated after collection, if immediate lab delivery is not possible.
- All specimens must be processed into the lab within 8 hours of collection.
- Place specimen in a plastic Biohazard bag, with a copy of the doctor's order in the side pouch. Date and time of collection is written on the doctor's order.

COLLECTION OF 24 HOUR URINE SPECIMENS

- Pre-Collection Instructions:
- Before collecting any urine, check with the laboratory about appropriate containers, preservatives and/or special procedures necessary for the test requested.
- Check that the container is labeled with the contents of any additives and note any precautions.
- Storage Requirements:
- Check with the laboratory for the appropriate storage conditions.
- Procedure for the Collection of a 24-hour specimen:
- Prior to the collection, have the patient void at a definite time (this, generally, is the 1st morning urine), completely emptying his bladder, and discard the urine.
- All urine passed for the next 24 hours is saved.
- At exactly 24 hours, have the Veteran empty his bladder and add this urine to the 24-hour collection (this also, generally, is the 1st morning urine).

Labelling Requirements:

- Veteran's full name & full SSN
- note date and time of start and finish of collection

REJECTION OF SPECIMENS

Below are listed specimen rejection criteria:

1. Unlabeled specimens
2. Specimen lacking patient name and/or total social security number.
3. Date and time of collection and phlebotomist's initials not noted.
4. Grossly hemolyzed specimens.
5. Microbiological specimens submitted in unsafe, damaged, non-sterile containers or not submitted in transport bag.
6. Microbiological specimens that have been spilled in transport bag or contaminated in anyway.

7. Fluids received in a syringe containing an attached needle.
8. Microbiology specimens where site and type of specimen are not specified.
9. Urine specimens when more than 2 hours have elapsed between collection and arrival in laboratory, unless they have been refrigerated.
10. Urine specimens when more than 8 hours have elapsed between collection and time of testing, even if they have been refrigerated
11. Urine specimen that has leaked in transit.
12. Inappropriate sample; i.e. a Urinalysis specimen in a Microbiology tube.
13. Tissue or cytological specimens without eSF 515/541 or with incomplete eSF515/541.
14. Requisitions or copy of the doctor's order brought with specimens that are not time stamped or lack collection date and time.
15. Inadequately or improperly completed requests for blood.
16. Pink top tube for Blood Bank containing any label other than a computer generated identification, to include full name, full social security number, date, time and initials of person drawing the blood.

The documentation of reason for rejection and notification of appropriate personnel are made in the comment section of the computer record of the rejected specimen.

There is an on-line log for rejected, mislabeled, and other specimen issues.

In circumstances when recollection is not possible or practical, correction of information to the label may be permitted. Such specimens include:

1. Body fluids other than urine
2. Biopsy/tissue specimens
3. Cultures in which antibiotics have already been administered to the patient
4. Gynecological specimens that are partially labeled

Documentation of the correction will be completed in the lab using the Occurrence Report Form.

SECTION 3-SUPPLIES

SUPPLIES

Supplies for all lab testing can be obtained from the laboratory by submitting a "Request for Laboratory Supplies" or an Outlook email to VHALEB LAB GROUP. Supplies can be picked up at the main Laboratory (Bldg.1, Room 3) or arrangements should be made to pick them up.

1. Whole blood glucose - Testing strips, Control Solutions, Nursing barcodes, procedures and proficiency specimens.
2. iSTAT Cartridges
3. CoaguChek strips and controls.
4. HCG kits-Women's Health
5. iFecal Occult Blood collection devices


6. Formalin containers
7. Blood Collection tubes
8. 24 hour urine containers
9. Viral transport media
10. Thin Prep collection kits and brooms/brushes for PAP smears
11. Stool containers for culture and parasite exam

Other supplies are ordered through Logistics.

SECTION 4-PROCEDURES PERFORMED AT REFERRAL LABORATORY

Assays not performed in-house are sent to our approved referral laboratory. These assays are sent on a fee basis. The physician must be able to justify these requests, as they are costly. If there are tests requested that are not listed for our laboratory, they are sent out on fee basis. Contact laboratory, ext.4188, if you have any questions regarding collection of specimens or availability of assays. Laboratory staff should follow catalogue instructions for collection and order requirements.

SECTION 5 -PROCEDURES OFFERED BY THE LABORATORY SERVICE

 Performance specifications for all of our current laboratory methods are available upon request through the Laboratory Manager.

- The type of tube required, pertinent data and instructions for collection are given under comments.
- If you are requested to draw blood, aseptic technique must be used.
- If specimen is drawn from an A-line, a discard tube must be drawn first. This ensures there is no contamination of the specimen from other solutions.
- If at all possible, specimens should not be drawn from IV areas. However, it is acceptable to draw blood below an IV site.
- Specimen must be accurately labeled with patient's name, full social security number, location, time and date of collection and initials of phlebotomist.
- ***Note: Veteran identification using full name and FULL SSN must be verified before any specimen is collected.***
- Deliver specimens to laboratory personnel as soon as collected.
- If during off hours, page laboratory personnel to inform them those specimens are being delivered.

CHEMISTRY

> NOTE: Lithium-Heparin (Light green tops) are preferred for all STAT testing, except Lithiums.

CHEMISTRY Tests

<u>PROCEDURE</u>	<u>TUBE REQUIREMENT</u>	<u>COMMENTS</u>	<u>REFERENCE RANGE</u>
Albumin	red top SST		3.5-5.0 g/dL
Ammonia	light green top (Li Heparin)	Place on ice; <i>Notify lab 15 mins. in advance</i>	11-35 mmol/L
Amylase	red top SST		25-125 IU/L
Beta HCG	red top SST		<5 mIU/mL
Beta Hydroxybutyrate	red top SST		0-0.3mmol/L
BNP	purple top		<100 pg/mL
Bilirubin, Direct	red top SST		0-0.5 mg/dL
Calcium	red top SST		8.6-10.6 mg/dL
Carbamazepine	red top SST		4-12.0 µg/dL
Chloride	red top SST		95-110 mmol/L
Cholesterol	red top SST		150-250 mg/dL
HCO ₃	red top SST		22-37 mmol/L
CPK	red top SST		48-275 IU/L
Creatinine	red top SST		0.5-1.6 mg/dL
Digoxin	red top SST	draw before dose or 5 hrs after dose.	0.5-2.0 ng/mL
Dilantin (Phenytoin)	red top SST		10-20 µg/mL
Glucose	red top SST		70-110 mg/dL
GOT (AST)	red top SST		10-42 IU/L
GPT (ALT)	red top SST		10-60 IU/L
HDL-Cholesterol	red top SST		30-75 mg/dL
Iron, Total	red top SST		45-160 µg/dL
Iron, TIBC	red top SST		262-474 µg/dL
Lactate	gray top on ice		0.5-2.2mmol/L
LDH	red top SST		80-190 IU/L
LDL-Cholesterol	red top SST		0-130 mg/dL
Lipase	red top SST		7 -60 U/L
Lithium	red top SST		0.4-1.1 mmol/L
Magnesium	red top SST		1.6-2.6 mg/dL
Phosphatase, Alk	red top SST		20-170 IU/L
Phosphorus	red top SST		2.6-4.9 mg/dL
Protein, Total	red top SST		5.5-8.0 g/dL
Potassium	red top SST		3.5-5.5 mmol/L
Salicylate	red top SST		0 - 30mg/dL
Sodium	red top SST		135-145mmol/L

CHEMISTRY Tests

<u>PROCEDURE</u>	<u>TUBE REQUIREMENT</u>	<u>COMMENTS</u>	<u>REFERENCE RANGE</u>
------------------	-----------------------------	-----------------	----------------------------

Theophylline	<u>red top SST</u>	draw before dose or 4 hrs after dose	10-20 µg/mL
<hr/>			
Troponin	<u>light green top</u>		equal to or <0.03ng/mL
Triglycerides	<u>red top SST</u>	Fasting	32-176 mg/dL
Urea Nitrogen	<u>red top SST</u>		8-25 mg/dL
Uric Acid	<u>red top SST</u>		2.6-7.2 mg/dL
Valproic Acid	<u>red top SST</u>		50-100 µg/mL
Vancomycin, trough	<u>red top SST</u>		5-10 µg/mL
Vancomycin, peak	<u>red top SST</u>		18-40 µg/mL
<hr/>			
Ethanol	<u>gray top</u>		<10 mg/dL
Hemoglobin A1C	<u>purple top</u>	one per 3 months	4.2-5.8%
Rapid HIV	<u>purple top</u>		negative
Drug Screen	<u>random urine</u>	Collect at least 25 mL	none detected
(Amphetamines, Barbituates, Benzodiazepines, Cannabinoids, Cocaine, Ethanol, Methadone, Opiates, Phencylidine)			
Oxycodone	<u>random urine</u>	<u>25 ml urine</u>	<u>presumptive pos/neg</u>
<hr/>			
CEA★	<u>red top SST</u>		<3.0 ng/mL
Ferritin★	<u>red top SST</u>	male 17.9 - 464 ng/mL Female <50 yrs. 6.24 - 137 ng/mL Female >50 yrs. 11.1 - 264 ng/mL	
<hr/>			
Folate★	<u>red top SST</u>		2.76 - 20ng/mL
FSH★	<u>red top SST</u>	male 1.55-9.74mIU/mL female: varies with menstrual cycle	
<hr/>			
LH ★	<u>red top SST</u>	male 1.0 - 8.0mIU/mL female: varies with menstrual cycle	
<hr/>			
PSA ★	<u>red top SST</u>		0.00 – 3.9 ng/mL
T3, Total ★	<u>red top SST</u>		0.97-1.69 ng/mL
<hr/>			
T4, Free★	<u>red top SST</u>		0.78-2.19 ng/dL
Testosterone★	<u>red top SST</u>	Female: 5.71-77.0 ng/dL Males age 20-49yrs: 132-813 Males age >50yrs: 72-623	
<hr/>			
Transferrin★	<u>red top SST</u>		203 - 360 mg/dL
TSH★	<u>red top SST</u>		0.465 – 4.68 mIU/mL
Vitamin B12★	<u>red top SST</u>		143 - 689 pg/mL
Vitamin D3, 25 OH	<u>red top SST</u>		32-100 ng/mL

★(performed at Phila VA, Must be a red top SST, no Lithium-Heparin (Light green tops) are allowed)

NOTE: When drawing specimens, 1 red top SST tube is sufficient for 7 assays.

B-TYPE NATRIURETIC PEPTIDE (BNP)

1. BNP is a useful tool in distinguishing CHF from other causes of dyspnea in patients with signs and symptoms that may or may not represent heart failure.
2. BNP should only be run with proper preliminary evaluations. These include dyspnea, chest X-ray and EKG.
3. CHF is usually absent at BNP levels <100 pg/mL and present at levels >400 pg/mL.

Rapid HIV

1. The test is used for the qualitative detection of antibodies to HIV-1 in whole blood collected in a lavender EDTA tube.
2. Rapid HIV is ordered in the event of an exposure to blood or body fluids.
3. It is performed on the patient (source) from whom the exposure came.
4. Results are reported as positive/negative and phoned to the provider if positive.

COLLECTION OF URINE SPECIMENS FOR CHEMISTRY TESTING

Collect random urine specimen in the same manner as a urinalysis ([see Routine Urine Collection](#)). Results of Random specimens are provided without a reference range. See [Collection of 24 Hour Urine Specimens](#) for 24 hour urine chemistry specimens

<u>PROCEDURE</u>	<u>SPECIMEN REQUIRED</u>	<u>COMMENTS</u>	<u>REFERENCE RANGE</u>
Chloride	random urine	<i>varies with diet and time of collection</i>	
Chloride	24-hr urine	obtain container	110-250 mmol/24 hr
Creatinine	24-hr urine	obtain container	800-2000 mg/24 hr
Creatinine Clearance *	24-hr urine	obtain container *a serum creatinine must be done within 3 days of collection	80-120 mL/min.
Microalbumin	random		0 - 20 mg/L
Microalbumin/Creat Ratio	random		<29.0 mgALB/gCreat
Potassium	24-hr urine	obtain container	25-125 mmol/24hr
Potassium	random	<i>varies with diet and time of collection</i>	
Protein	24-hr urine	obtain container	<165 mg/24hr
Sodium	random urine	<i>varies with diet and time of collection</i>	
Sodium	24-hr urine	obtain container	40-220 mmol/24 hr
Amylase ★	24-hr urine	obtain container	0-14 IU/24 hr

LEBANON VAMC		Laboratory Ward Manual	
Calcium ★	24-hr urine	obtain container	40-355 mg/24 hr
Urea	random urine	<i>varies with diet and time of collection</i>	
Urea	24-hr urine	obtain container	12-20g/24 hr
Uric Acid ★	24-hr urine	obtain container	250-750 mg/24hr

★*performed at Phila VA*

URINALYSIS

NOTE: STAT URINALYSIS MUST BE HANDED TO A LABORATORY STAFF MEMBER FOR IMMEDIATE PROCESSING.

Urine Specimen Collection: Refer to [Routine Urine Collection](#) for proper specimen collection.

All specimens submitted for routine analysis will be examined for

Color	glucose	bile
Appearance	protein	urobilinogen
specific gravity	blood	nitrite
pH	ketones	leukocyte esterase

- ⇒ If there are positive results for blood, protein, nitrite or leukocyte esterase, a microscopic examination is performed.
- ⇒ All other tests must be specifically requested.

Reference Ranges:

pH 5-7

Urobilinogen <1.0 EU/dl

specific gravity 1.010-1.025

glucose, protein, blood, ketones, bile, nitrite, leukocyte esterase - negative.

HEMATOLOGY

- Patients do not need to be fasting.
- If specimen is to be collected, follow [blood collection procedures under chemistry section](#).
- After drawing blood specimen, invert the tube 4 or 5 times to avoid clumps and ensure that anticoagulant in the Vacutainer tube mixes completely with blood.

<u>PROCEDURE</u>	<u>TUBE REQUIRED</u>	<u>COMMENTS</u>	<u>REFERENCE RANGE</u>
CBC includes WBC, RBC, HGB, HCT, indices,	purple top	invert 4-5 times	see separate procedures below

Platelet count			
Eosinophil	purple top	invert 4-5 times	150-250 cells/cmm
Hematocrit	purple top	invert 4-5 times	39-48%
Hemoglobin	purple top	invert 4-5 times	13 - 16 gm/dL
Indices-			
RDW	purple top	invert 4-5 times	12-15%
MCV	purple top	invert 4-5 times	86-98 fL
MCH	purple top	invert 4-5 times	27-32 pg
MCHC	purple top	invert 4-5 times	32-35 g/dL
WBC	purple top	invert 4-5 times	4,500-10,000/ μ L
RBC	purple top	invert 4-5 times	3.9-5.2 million/ μ L
Platelet Count	purple top	invert 4-5 times	150,000-350,000/ μ L
Reticulocyte	purple top	invert 4-5 times	0.45-2.28%
Sed Rate	purple top	invert 4-5 times	0-15 mm/hr male <50yrs. 0-20 mm/hr male >50yrs. 0-20 mm/hr female <50yrs. 0-30 mm/hr female >50yrs.
(WBC) Peripheral Smear (Diff)	purple top	invert 4-5 times	4.5 – 10.0 K/uL
Neutrophils		50-70% Neut#	2.2-7.0 K/uL
Lymphocytes		20-40% Lymph#	0.9-4.0 K/uL
Monocytes		5.5-11% Mono#	0.2-1.1 K/uL
Eosinophils		1- 6% Eos#	0.0-0.6 K/uL
Basophils		0- 1% Baso#	0.0-0.1

COAGULATION

- Patients do not need to be fasting.
- If specimen is to be collected, follow [blood collection procedures under chemistry section](#).
- After drawing blood specimen, invert the tube 4 or 5 times to avoid clumps and ensure that anticoagulant in the Vacutainer tube mixes completely with blood.

<u>PROCEDURE</u>	<u>TUBE REQUIRED</u>	<u>COMMENTS</u>	<u>REFERENCE RANGE</u>
INR Non Therapeutic	blue	invert 4-5 times; must have 4.5 mL blood in tube	0.8-1.3INR
INR Low Intensity	blue	invert 4-5 times; must have 4.5 mL blood in tube	1.5-2.0INR
INR Moderate Intensity	blue	invert 4-5 times; must have 4.5 mL blood in tube	2.0-3.0INR
INR	blue	invert 4-5 times;	2.5-3.5INR

High Intensity		must have 4.5 mL blood in tube	
PTT	blue	invert 4-5 times; must have 4.5 mL blood in tube	23-34secs.
PTT DVT or PE	blue	invert 4-5 times; must have 4.5 mL blood in tube	67-104secs.
D-Dimer	blue	invert 4-5 times; must have 4.5 mL blood in tube	0-0.48 μ g/ml FEU

MISCELLANEOUS PROCEDURES

See above instructions for proper labeling and handling of specimens.

<u>PROCEDURE</u>	<u>SPECIMEN REQUIRED</u>	<u>COMMENTS</u>	<u>REFERENCE RANGE</u>
Body Fluid	Peritoneal, Pleural fluid	use <u>purple top</u> tube; invert 4-5 times	< 1000 TNC (Total nucleated)
Body Fluid	Spinal Fluid	use sterile screw cap tube	< 10 TNC
Body Fluid	Synovial Fluid	use <u>purple top</u> tube; Invert 4-5 times	13-180 TNC
POST Vasectomy Sperm Count		Yellow Capped Urine Container	

Semen Analysis—Collected and performed at Hershey Medical Center

SPINAL FLUID - Collection and Test Requests

- Send spinal fluid in sterile screw cap test tubes, obtained from Logistics Line Item Manager.
- **Label tubes in order of collections.**
- A copy of the doctor's order with the collection date and time noted must accompany the specimens to the lab.
- If a CSF specimen is submitted for cytology, then a completed eSF 515 must accompany it.
- Label tubes with patient's name, full social security number, location, date and time of collection.
- Deliver **immediately** to the laboratory, stamp the doctor's order with date and time, and deliver to a technologist.

Normals:

cell count: 0-10 lymphs
protein: 15-45 mg/dL
chloride: 120-130 mmol/L
glucose: 40-70 mg/dL

bacteriology studies: Culture-no growth
gram stain: no organisms seen.

BODY FLUID – Includes Synovial Fluid (Joint Fluid), Pleural Fluid (Thoracentesis Fluid), Peritoneal Fluid (Ascites or Paracentesis Fluid)

- Send body fluid in a [purple top](#) for cell count and a [red top SST](#) for chemistry
- Send body fluid in a sterile cup or [red top SST](#) for culture.
- Send body fluid in a [sodium heparin](#) tube for pH and crystal analysis.

-A copy of the physician's order with collection date and time noted must accompany the specimens to the laboratory.

-If a body fluid specimen is submitted for cytology, then a completed eSF 515 must accompany the fluid.

-Label tubes with patient's name, full social security number, location, date and time of collection.

-Deliver **immediately** to the laboratory, stamp the doctor's order with date and time, and deliver to a technologist.

CYTOLOGY

All specimens must be labeled with patient's name, full social security number, location, date and time collected, and specimen source. When delivered, requisition must be stamped in laboratory with date and time.

- ❖ Non-Gyn material collected must be sent immediately to Laboratory
- ❖ ALL specimens sent for cytology require an 'Electronic Clinical Record-Tissue Examination' (eSF 515), filled out completely.
- ❖ Sputums, ascitic fluid, bronchial washings, body fluids, etc. must be collected in a sterile container and taken to the Laboratory immediately.
- ❖ Fluids, greater than 20 mL., should be brought to the laboratory in clear VAC bottles, obtained from the Logistics Line Item Manager.
- ❖ Gyn material must be sent to the lab in a labeled PAP Smear container along with a GYN Examination Form (eSF541) filled out completely

Smears of any material may be prepared as follows:

- Using two clean microscopic slides, smears are made by applying material on one microscopic slide and smearing material from one end to the other (place specimen just past the frosted end and smear toward non-frosted edge). A cotton tipped swab is acceptable to apply smear material.

- Fix immediately with fixative and deliver immediately to the laboratory. Cytologic Fixative may be procured from the histology laboratory.
- All slides must have patient's name and full SSN written on the frosted end of the microscopic slide, using a pencil.
- Place slide in a slide folder and attach a label with patient's name, full social security number, location, date and time of collection to the outside of the folder, using a rubber band.

ROUTINE SPUTUM COLLECTION

1. Sputum specimens should be collected when patient arises and before eating. Instruct patient to rinse out his mouth several times prior to collection.
2. Instruct patient to breathe deeply 8-10 times, cough deeply and then expectorate into the appropriate container. Procure container from the Logistics Line Item Manager.
3. Insure that the container is securely capped.
4. Label specimen container with patient's name, full SSN and specimen source carefully and note time and date of collection on the copy of the doctor's order.
5. On the copy of the doctor's order, indicate whether this is the first, second or third specimen.

For Induced Sputum specimens: contact Respiratory Therapy to collect the necessary specimen.

SURGICAL PATHOLOGY SPECIMENS

- All specimens collected, except for frozen sections, are immediately placed in 10% formalin, obtained from the laboratory. The specimen needs to be covered by the formalin.
- Send labeled specimen and completed eSF 515 (see [Rejection of Specimens](#)) to the Laboratory.
- Label specimen with patient's full name, full social security number, location, date and time collected and specimen source.
- Deliver specimen as soon as possible. Stamp requisition with date and time when delivered to laboratory.

PATHOLOGY PROCEDURES

- The pathologist and histology staff assist with a number of Pathology Procedures, including ***Intraoperative Frozen Section and Gross consultations, Fine Needle Aspiration adequacy and processing, Bone Marrow Aspiration processing, Endobronchial Ultrasound (EBUS) Biopsy adequacy and processing, and Autopsy arrangements.***
- Procedures should be scheduled 72 hours in advance.

SECTION 6-TRANSFUSION SERVICE

TRANSFUSION SERVICE

1. Transfusion requests are submitted through CPRS. A copy of the order is printed and used to verify the following:

- Veteran's name
- social security number
- ward
- physician's name
- diagnosis
- type of component needed (packed red cells, fresh frozen plasma, etc.)
- previous history of transfusions (if known)
- date required

- Specimen Collection:

The Lebanon VAMC Transfusion utilizes the Hollister Ident-a-Band system for positive Veteran identification. Only specifically trained personnel may draw specimens for transfusion requests. Contact the laboratory for these collections.

- Specimen Retention:

Crossmatched blood is held for 3 days only, unless other arrangements have been made with the Blood Bank i.e. out-patient pre-admission testing. A specimen can be used for any blood bank test or crossmatch for up to 3 days. When multiple transfusions are required over a period of several days, a sample of the recipient's blood will be obtained every 3 days.

- 2 historical patient blood types are required to perform the electronic crossmatch.

It is strongly recommended that the provider or nurse call the blood bank when components are needed at X5958.

Packed RBCs and FFP are kept in inventory. Platelets are ordered from CPBB when needed. Advanced notification is required for platelet product.

2. Issuing Blood Products:

Only one unit of packed cells may be released at one time, except for O.R. cases or emergent situations.

- Authorized representative of the requesting physician must pick up blood.
- When picking up blood/components a copy of the patient's orders to infuse must be presented to the technologist releasing the blood.

3. OR Procedures:

- There is no need for orders to transfuse when the blood is issued to the OR, but an index card with the Veteran's addressograph on it is sufficient for the issue process.
- When picking up blood, carefully check all information on the unit of blood against the tag, computer, and BTRF (Blood Transfusion Record Form.) After carefully checking all information, issue the unit in VBECS.
- Blood should be transported in a cooler to the O.R. and the blood kept in the OR blood bank refrigerator until it is used or returned to the laboratory blood bank.
- When blood is issued from the OR refrigerator to the Operating Room, an index card with the patient's name and full SSN must be checked against the tag, computer, and transfusion form. If all matches 100%, the person retrieving the blood is to initial and date the index card and place the card on top of the OR refrigerator.
- At the end of the day, any unused blood and/or index cards are to be returned to the Blood Bank.

4. Blood picked up for ward patients must be returned to the laboratory within 30 minutes if not used. A technologist must be notified of the return and the return time indicated in issues section of VBECS.

5. Before starting a transfusion:

- a nurse must check the donor number on the bag and on the tag with the donor number on the request.
- The nurse must also check that all these tags, unit of blood and the Hollister Patient I.D. Band all have the same numbers.
- Check all other information to be sure it correlates with the Veteran.
- Two nurses and/or physicians must verify the Veteran's identity at the bedside and they must sign the transfusion request in the appropriate places.

6. Infusing the blood product

- Solutions other than isotonic saline must not be used with, or to start, blood transfusions. Do not add any medications to blood.
- The patient's temperature, blood pressure and pulse must be taken before the transfusion is begun.
- It is recommended that vitals also be taken 2 hours after each transfusion.
- The first 50 mL of blood must be given slowly (20 drops/minute) under constant supervision.
- **If any reaction occurs**, immediately stop the transfusion.
- **If no reaction has occurred**, the transfusion rate may be stepped up.

- The minimum time for transfusion of 450 mL of blood is 90 minutes; maximum is 4 hours of the time of issue noted on the BTRF Blood Transfusion Record Form.) Note exact time transfusion is started.
- A nurse must be on the ward within easy access during the entire transfusion.
- After the transfusion, complete all information on the BTRF.
- Send the completed copy of the Transfusion Form and tag to the blood bank.
- Transfusions not completed within four hours must be terminated, returning completed paperwork and unused portion of blood back to the blood bank.

TRANSFUSION REACTIONS

The most common immediate reactions to blood transfusions are: chills, fever, tightness in the chest, backache and urticaria.

If any of these reactions occur,

- discontinue transfusion and
- call the attending physician.
- Do not pull out needle until told to do so by the physician.
- If physician suspects a transfusion reaction, they must examine the patient, sign the BTRF and immediately inform the technologist on duty.
- The provider must order a Transfusion Reaction Workup in VBECS.
- The technologist on duty will follow a transfusion reaction policy that requires obtaining a blood and urine specimen.
- Send the donor bag with remaining blood, with any attached IV solutions (Saline) and the copies of the completed transfusion request to the laboratory.

OTHER TESTS PERFORMED IN TRANSFUSION SERVICES

<u>PROCEDURE</u>	<u>TUBE REQUIRED</u>	<u>COMMENTS</u>	<u>REFERENCE RANGE</u>
Blood group (ABO & Rh)	pink or Purple top K ₂ EDTA		
none			
Antibody Screen (indirect coombs)	pink top K ₂ EDTA		negative
Direct Coombs	pink Top K ₂ EDTA		negative
Cold Agglutinins (Send Out)	plain red	blood must be kept at Room temperature	negative

OTHER BLOOD PRODUCTS

For additional blood products such as platelet concentrates, cryoprecipitate and fresh frozen plasma - the laboratory Blood Bank section is notified at X5958 or pager X3555 and procurement of these products is made.

- ***fresh frozen plasma is available upon completion of thawing the unit***
- ***platelet concentrates and cryoprecipitates must be specially ordered and may take 2 hours to process.***

THERAPEUTIC PHLEBOTOMY

Therapeutic phlebotomy is performed Monday through Friday, excluding holidays, between 0800-1400 hours. **The procedure is scheduled with the lab by chemotherapy clinic at least 72 hours in advance.**

1. Informed consent must be obtained and documented prior to the procedure in CPRS under "Request for Administration of Anesthesia and for Performance of Operations, Other Procedure and Transfusion".
2. The blood bank must have a written request for the procedure from the Veteran's physician. The Health Tech/Collector must record:
 - Amount of blood drawn
 - Start and Finish time of phlebotomy
 - Disposal of Blood unit
 - Documentation of the procedure is added to the provider note in CPRS.

SECTION 7-CULTURES

MRSA Screens

To obtain adequate specimen, follow the instructions in this section closely.

- 1.** Ask the patient to tilt his/her head back. Insert dry swabs approximately 1–2 cm into each nostril.
- 2.** Rotate the swabs against the inside of the nostril for 3 seconds. Apply slight pressure with a finger on the outside of the nose to help assure good contact between the swab and the inside of the nose.
- 3.** Using the same swabs, repeat for the second nostril, trying not to touch anything but the inside of the nose.

4. Place the swabs into the plastic transport tube. The swabs should go all the way into the tube until they rest on top of the sponge at the bottom of the tube. Make sure the red cap is on tightly.
5. Label the swab with patient name, FULL SSN, location, date and time of collection and send to the laboratory.
6. A copy of the order must accompany the specimen.
7. Store swab specimen at room temperature (15–30 °C).

BLOOD CULTURES:

1. Scrupulous aseptic techniques must be followed. Blood is collected aseptically after cleaning the phlebotomy site(s) with 70% alcohol, then a ChloroPrep (Chlorhexidine 2%) or 10% PVP Iodine.
2. Blood culture tubes must also be prepped with a ChloroPrep.
3. Collect 15-20 mL blood divided equally in 2 yellow-topped, Sterile Vacutainer tubes.
4. Tubes must be labeled with patient's name, social security number, location, date and time of collection.
5. Deliver immediately to laboratory.

NOTE: A maximum of 2 sets of blood cultures can be ordered in a 24-hour period. ***For suspected Endocarditis 3 sets of blood cultures may be ordered in a 24-hour period. For optimum results, blood cultures should be drawn during a period when the patient's temperature is >100°F.

MICROBIOLOGY – All Testing is performed at the [Philadelphia VAMC](#).

- ♦ Specimens for microbiology must be accompanied by a copy of the doctor's order. The copy of the doctor's order must have the date and time of collection written on it.
- ♦ All specimens must be collected in sterile containers and collected using aseptic techniques. Universal precautions must be followed. Do not contaminate the external surface of the collection container and/or its accompanying paperwork.
- ♦ All specimens must be transported to the lab in a transport bag with an outside pouch for the paperwork.
- ♦ Specimen will be rejected if
 - the container is broken
 - not capped
 - not sterile
 - leakage is noted
 - not submitted in a plastic sealable transport bag with a separate pouch for paperwork.
- ♦ All specimens must be labeled with patient's name, full SSN, location, type of specimen, source of wound cultures, date and time of collection.
- ♦ Deliver to the laboratory and stamp in with date and time.

TISSUE CULTURES:

Tissue should be collected and placed in a properly labeled 50 cc conical (FALCON) tube in 5cc of sterile saline. **DO NOT** submit tissue on a swab.

SWABS (for wounds or abscesses):

- ♦ The area surrounding the culture site must be disinfected with 70% alcohol and then a 10% solution of povidone-iodine.
- ♦ Swab in the deepest area of the wound or abscess, avoiding contamination by the surrounding tissue.
- ♦ After collecting specimen, label the swab with Veteran's full name, FULL SSN, date and time of collection and place into biohazard bag.
- ♦ Send a copy of the doctor's order and specimen to laboratory immediately. Note date and time of collection on the copy of the doctor's order.

SWABS (for throat cultures): No site preparation is necessary.

- ♦ After collecting specimen, label the swab with Veteran's full name, FULL SSN, date and time of collection and place into biohazard bag.
- ♦ Send a copy of the doctor's order and specimen to laboratory immediately. Note date and time of collection on the copy of the doctor's order.

GC/Chlamydia Screen:

- Use multi collection kit for both male and female collections.
- Acceptable specimens include urine (both male and female) -**first 20 mls(Not clean catch)**
- Endocervical swab
- Vaginal swab
- Urethral swab
- After collecting specimen, label the swab with Veteran's full name, FULL SSN, date and time of collection and place into biohazard bag.
- Send a copy of the doctor's order and specimen to laboratory immediately. Note date and time of collection on the copy of the doctor's order.

URINE:

- ♦ Collect either a clean catch midstream or catheterized specimen in a sterile container or use Vacutainer system (obtained from SPD). Never collect urine specimens from bedpans or urinals.
- ♦ When collecting a clean catch midstream specimen, allow the first few milliliters of urine to pass, and then collect the specimen.
- ♦ If patient is female, the urethral opening must be cleaned with soap, rinsed and dried before collecting a midstream specimen.

- ♦ If the patient is male, cleanse the penis, retracting the foreskin if not circumcised, with warm soapy water, rinse and dry.
- ♦ After collecting specimen, label the swab with Veteran's full name, FULL SSN, date and time of collection and place into biohazard bag.
- ♦ Send a copy of the doctor's order and specimen to laboratory immediately. Note date and time of collection on the copy of the doctor's order.

NOTE: If specimen is collected from foley, completely cleanse the foley outside where you are going to enter. Discard some urine before collecting sample.

SPUTUM:

- ♦ Expectorated:
 - collect first morning specimen in a sterile container. Have the patient rinse mouth and gargle with water before eating, then have them do deep coughs.
 - Instruct patient not to expectorate saliva or postnasal discharge into the container.
 - Collect specimen resulting from a deep cough.
 - Securely cap the collection container. **Specimen may be rejected if spilled into the anaerobic transport tube or in the biohazard bag.
- ♦ Induced:
 - Induced specimens are the specimens of choice. Have the specimen collected by Respiratory Therapy.
 - Immediately send the specimen and a copy of the doctor's order to the lab.
- ♦ After collecting specimen, label the swab with Veteran's full name, FULL SSN, date and time of collection and place into biohazard bag.
- Send a copy of the doctor's order and specimen to laboratory immediately. Note date and time of collection on the copy of the doctor's order.

STOOL:

- Do not use stool contaminated with urine or other materials.
- Routine cultures are placed in **Para-Pak C&S** vials and immediately sent to the laboratory along with a copy of the doctor's order. Culture includes Salmonella, Shigella and Campylobacter.
- Vibrio and Yersinia are cultured upon special request.
- Sensitivity tests will be done whenever pathogenic organisms are grown. Immediately send the specimen.

C. difficile testing: Stool must be liquid in nature and submitted in a sterile container.

- Only 1 specimen/day will be accepted.
- Once positive result is obtained, testing will be discontinued.


PARASITOLOGY:

- Place a small sized specimen in a ~~Para-Pak ZN-PVA/~~ **Formalin** container accompanied by a copy of the doctor's order, complete with date and time of collection (DO NO REFRIGERATE). Label specimens with patient's name, social security number, location, date and time of collection.
- Under no circumstances should water or urine be present in the container.
- Specimen should not be collected for 7-10 days after barium or bismuth has been given.

MYCOBACTERIA (AFB) CULTURES:

- Sputum specimens must be collected using AFB Collection Kits with conical tube. First morning collection is required.
- Urine specimen must be first morning collection.
- Body fluids and wound aspirates should be placed in a sterile 50 cc conical (FALCON) tube or syringe with appropriate cap. **Swabs are not acceptable.**
- Blood is to be inoculated into a BD Myco/Flytic bottle.
- Refer to Collection of Specimens under Microbiology for the correct collection technique.
- Label specimen with Veteran's name, FULL SSN, location, date and time of collection. Immediately send the specimen with a copy of the doctor's order to the lab in a transport bag and time stamp the copy of the doctor's order upon arrival at lab.

MYCOLOGY CULTURES:

- For collection of sputum, blood, wounds, abscesses, feces, or urine refer to the appropriate collection procedures under Microbiology.
- For other specimens:
 - Scrapings: scrape the area with a sterile scalpel blade and pickup with double-swab from a Culturette. Insert double-swab into Culturette immediately. Scrapings may be submitted in sterile containers.
 -  Aspirate: Cleanse area with 70% alcohol, use aseptic technique, collect aspirate in a syringe and immediately place the collected specimen into a FALCON tube or other sterile screw capped tube.
- Label specimens with Veteran's name, FULL SSN, location, date and time of collection. Indicate site of collection.
- Deliver immediately to the lab in a transport bag and stamp the date and time on the copy of the doctor's order.

FLU TESTING:

- Collection kits may be acquired from the laboratory
- Swabs must be placed into viral media
- OR regular culture swab may be used.
- If delivery to the lab is delayed, the specimen may be maintained at 2-8°C and tested within 72 hours after collection
- After collecting specimen, label the swab with Veteran's full name, FULL SSN, date and time of collection and place into biohazard bag.
- Send a copy of the doctor's order and specimen to laboratory immediately. Note date and time of collection on the copy of the doctor's order.

HP FAST- Helicobacter pylori detection from gastric mucosal endoscopic biopsy

- Obtain testing agar from laboratory
- Bring agar to room temperature
- Insert biopsy into gel agar
- Label specimen with Veteran's name, FULL SSN, location, date and time of collection.
- Deliver to lab with completed SF 557

SECTION 8-ANCILLARY TESTING**ANCILLARY TESTING**

The Medical Director of Pathology and Laboratory Medicine Service will review medical appropriateness and provide guidance for all point of care tests performed in community based outreach clinics (CBOC), home based primary care (HBPC) and Lebanon VA medical center.

WBG (whole blood glucose)

Roche Accu-Chek Inform II system **-NOT to be used on "Critically Ill", defined as veterans with Mean Arterial Pressure (MAP) <60 mmHg.** Refer to SOP No: POC-1, Accu-Chek Inform II, for other limitations of the method. In general, consideration of plasma glucose testing in the laboratory for verification of finger stick results is suggested whenever there are any clinical questions or concerns.

cPROTIME/INR (whole blood PT/INR)

Roche Coagucheck XS Plus system

iTROP (whole blood troponin)

Abbott iSTAT 1 system

ABG/Hct (whole blood hematocrit and blood gas)

Abbott iSTAT 1 system

Wet Preps (KOH or saline PPM)

BBL 10% Potassium Hydroxide Dispensing Droppers

Nephron Pharmaceuticals Corp 0.9% saline

POC FOBt (rectal stool specimen for occult blood)

Hemosure immunochemical Fecal Occult Blood Test

POC HCG Qual (Urine Pregnancy Screen)

Sure-View, hCG-STAT test kit

POC Synovial Crystals (synovial fluid aspirate)

Microscopic examination, no reagents required

Laboratory & Pathology SOP for each test method is located in the POC SOP manual at each CBOC, HBPC Lebanon home office and Lebanon VAMC testing locations (as specified in following chart).

Test reagents and kit components are supplied by ATC. Send requests via Outlook or complete a laboratory requisition form. FS lancets, alcohol wipes and disinfecting wipes are supplied by Logistics. 0.9% saline is obtained from Pharmacy.

ATC should be notified whenever a problem is encountered with a test method which cannot be resolved. ATC x4182, B-1, Rm 37, mailcode 713. POC medical devices not performing satisfactorily off hours and weekends, notify laboratory x4188 for replacement (lab tech available 24/7)

Ancillary Testing Sites for Lebanon VAMC

D= Definitive Testing

S = Screening Testing

	WBG	cPT	iTROP	ABG/ Hct	Wet Preps	KOH	iFOBT	hcG
OR/PACU	D/S	D		D				
Emergency department	D/S		D				S	
Respiratory				D				
Specialty Clinics	D/S					D (Derm Only)	S (GI Only)	
Podiatry Clinic	D/S							
Pulmonary Rehab	D/S							
Primary Care 17-2	D/S							
Primary Care 17-3	D/S							
Primary Care 17-5	D/S							
Building 1, Floor 5	D/S							
Building 1, Floor 4B	D/S							
Building1, Floor 4A	D/S							
Building 1, Floor 3A	D/S							
Building 1, Floor 3B	D/S							
Building 1, Floor 2A	D/S							
Intensive Care Unit	D/S							
Building 18, Floor 2	D/S							
HBPC		D						
Berks CBOC	D/S	D			D			S
York CBOC	D/S	D			D	D	S	S
Camp Hill CBOC	D/S	D			D	D	S	S
Lancaster CBOC	D/S	D			D	D	S	S
Lebanon Women's Health					D			S
Dental	D/S							
Chemo/Onc	D/S							