

MADIGAN HEALTHCARE SYSTEM

2013

**DIRECTORY OF SERVICES, TESTING AND
SPECIMEN SUBMISSION**



DEPARTMENT OF PATHOLOGY
AND AREA LABORATORY
SERVICES

Version 13.0, (JAN 2013)

2013 BLOOD SPECIMEN TUBE GUIDE

Kind of Tube	Additive	Name of Test		
<p><i>Invert gently 5 times</i></p> <p>Gold 5 ml</p> 	<p>Clot activator and gel for serum separation</p>	<p>AFP (Alpha Fetal Protein) Alpha-1 antitrypsin Albumin Alkaline Phosphatase (ALP) Alaline Phosphatase (ALT) Amylase ASO Aspartate Aminotransferase (AST) ANA Basic Metabolic Panel - BMP BHCG (Quantatative/Qualatative) CA 19-9 CA15-3 CA 125 Calcium C3, C4 CEA Ceruloplasmin Chem 10 - CMP Chem 7 - BMP Chloride Cholesterol CK/ MB CMV Cortisol CPK Creatinine CO2 Comprehensive Metabolic Panel- CMP CRP Electrolyte Panels Estradiol</p>	<p>Ferritin FT4 Folate Free PSA FSH Gastrin Glucose H.Pylori Haptoglobin Hepatitis Homocysteine HSV HDL - Chol Hepatic Function Panel - HFP Immunoglobulin (AGME) IgE Allergens – RAST Integrated Screen I & II Iron Insulin Kappa Ketones Lambda LDH LFT - HFP LH Lipase Lipid Profile Magnesium MHA-FT Mono Myoglobin</p>	<p>OB Panels Osmolality Parvo Prealbumin Phosphorus Prolactin Potassium PSA Progesterone Quad Screen Renal Function Panel RPR RF (Rheumatoid Factor) Rubella SPEP Sodium Total Bilirubin Total Protein Thyroid AB TIBC Torch- 4 tubes Transferin Troponin Triglyceride TSH Testosterone - Total Urea Nitrogen (BUN) Uric Acid VDRL Vitamin B12</p>
<p><i>Invert gently 5 times</i></p> <p>Red/Yellow 7 ml</p> 	<p>Clot activator and gel for serum separation</p>	<p>HIV</p>		
<p><i>Invert gently 5 times</i></p> <p>Red 6 ml</p> 	<p>Clot activator</p>	<p>Acetaminophen Anti GBM ASA - Salicylate Calcitonin HIT panel (2 tubes) Lithium Testosterone Free and Total (2 tubes) Theophylline Therapeutic Drugs (Vancomycin, Dilantin, Tegretol, Gentamycin, Penobarbital, Valproic) Very Long Chain Fatty Acid (Morning draw)</p>		
<p><i>Invert gently 10 times</i></p> <p>Pink 6 ml</p> 	<p>K2EDTA</p>	<p>AB Screen ABO Rh Antigen Testing Coomb's Test (Direct & Indirect) Cord Blood</p>	<p>DAT Fetal Bleed Screen (Rosette Test) Prenatal Screen Rh IG Type Cross / Screen</p>	

Kind of Tube	Additive	Name of Test
<p><i>Invert gently 8 times</i></p> <p>Green 6 ml</p> 	Lithium Heparin	Ammonia (On ice) BMP-Chem 7 (NICU) PTH Intact / Interop Pyruvate Neobilirubin
<p><i>Invert gently 8 times</i></p> <p>Green 10 ml</p> 	Sodium Heparin	Chromosome Study HLA-B27- Do not draw on Fridays CGH- Green and Lavender top tube
<p><i>Invert gently 8 times</i></p> <p>Grey 6 ml</p> 	Potassium Oxalate/ Sodium Fluoride	Alcohol Lactate Adult and Pediatric (On ice) Glucose Tolerance
<p><i>Invert gently 10 times</i></p> <p>Lavender 3 ml</p>  <p>Lavender 6 ml</p> 	K2EDTA	Absolute Eosinophil ACTH BNP Body Fluid Cell Count CBC Cyclosporine DNA ESR Factor V. Leiden (Requires positive APCR) Fragile X G-6PD HCT & HGB Hemoglobin Electrophoresis (Include pt. history) Hep B PCR Hgb A1C (Glycosylated Hgb.) Histamine HIV PCR Kleihauer - KB Lead Lymphocyte Subsets Malaria Manual Differential Metanephrine Fractionated Platelet Count Prothrombin 20210- mutation Pyruvate Kinase RBC Cholinesterase (2 tubes) Reticulocyte Count Sickle Cell Somostatin VAP WBC Count Y Microdeletions
<p><i>Invert gently 8 times</i></p> <p>Blue (large) 4.5ml*</p>  <p>Light Blue 1.8ml*</p>  <p><i>*Use only for Newborn & difficult draws in pediatrics</i></p>	Sodium Citrate (3.2%)	APC-R D-Dimer DIC panel Factor Assays Factor VIII (2 tubes) Factor X A Fibrinogen FSP LAC (Lupus Anticoagulant) Mixing Studies PT PTT Thrombin Time VWF2
ABG Syringe Minimum 1 ml	Dry Lithium Heparin	Arterial Blood Gas (On ice) Ionized Calcium (On ice) Venous Blood Gas (On ice)

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SECTION I - GENERAL INFORMATION

LABORATORY ACCREDITATIONS

MAMC Department of Pathology and Area Laboratory Services

- Our Laboratory is committed to excellence in the delivery of health care. Virtually every aspect of laboratory operations is examined through well defined quality control and quality assessment programs.
- All areas of the Department must meet the very stringent accreditation, license and/or registration standards set forth by applicable overseeing agencies, such as:
 - College of American Pathologists (CAP),
 - American Association of Blood Banks (AABB)
 - Joint Commission (JC)
 - Food and Drug Administration (FDA)

PUBLICATION INTENT AND AVAILABILITY

Intent

- Information contained within this manual is provided as a reference to assist you in the use of available laboratory services. During the performance of any/all specific clinical procedures mentioned within this manual, the attending Healthcare Provider should always reference those respective established clinical SOPs and procedures for that procedure. This document is meant only to supplement the established existing regulations, procedural policies, SOPs and guidelines as set forth within the Madigan Healthcare System, TJC, CAP, AABB and the FDA.

Information Availability

- This document along with Laboratory Test Information Guides 1 and 2 are available as PDF documents linked from the MAMC SharePoint Homepage. Document security and non-printability attributes are maintained to prevent circulation of out-dated and obsolete information through-out the hospital and clinics; allowing only publication from a master copy. For additional information on testing methodologies or performance specifications, please contact the applicable POC listed below. In addition, current Quest Diagnostic specimen requirements may be found in vendor hard-bound published Directory of services or online at: <http://www.questdiagnostics.com>

FEEDBACK

Survey Participation

- In our constant efforts to improve the quality of care and services provided, we encourage our customers to participate in our Health Care Provider Satisfaction and Patient Satisfaction Surveys. You can find survey suggestion boxes within Pathology areas. These surveys are reviewed by the Laboratory Management and by the Patient Liaison. Each comment, criticism, or problem cited are fully investigated and appropriate actions taken. A prompt response will be returned to the initiator. Please also visit the DPALS [HCP Satisfaction Survey](#) located on MAMC SharePoint. This survey is accessible from the Public DPALS SharePoint Homepage.

SECTION II - LABORATORY CONTACT INFORMATION

MAILING ADDRESS

Madigan Army Medical Center
ATTN: Chief, Dept of Pathology & Area Laboratory Services
9040A Jackson Avenue
Tacoma Washington 98431-1100

LOCATIONS AND PHONE NUMBERS

The Department of Pathology is located on the ground floor Building 9040A, MAMC. Other area laboratory locations are as noted.

Main Reception/Phlebotomy	G-46-10	968-1930
Specimen Receiving	G-47-01	968-1182
Specimen Shipping	G-46-02	968-2533
Transfusion Service	G-38-03	968-1722
Chemistry Section	G-47-2B	968-1945
Hematology/Urinalysis	G-47-2B	968-1409
Special Hematology/Coagulation	G-37-3A	968-2716
Microbiology	G-45-14	968-1753
Cytology	G-34-C5A	968-1729
Histology	G-45-04	968-1728
Decentralized Labs Coordinator	G-46-01	968-1719
McChord Clinic Lab	McChord AFB	982-2073
Winder Clinic Lab	Winder Clinic, 221-Lab	966-7783
Okubo Clinic Lab	Okubo Clinic, D03-Lab	966-7641
Puyallup CBMHL, Puyallup WA	10507 E. 156 th St. Suite 112	(253) 477-5087
S. Sound CBMHL, Olympia WA	Suite D1, 3415 Pacific Ave SE	(253) 982-0319
Chief, Dept of Pathology	G-37-10	968-1920
Laboratory Manager	G-36-06	968-1880
Laboratory QA/QI Administrator	G-36-11	968-1890
Laboratory NCOIC	G-37-06	968-1718

REQUESTS FOR INFORMATION

Requests for general information, lab services offered, test methods and performance specifications utilized for analysis may be made by calling the respective section Chief, Medical Director and/or the Laboratory Manager.

SECTION III - LABORATORY SERVICES

LABORATORY HOURS OF OPERATION

Main Lab, MAMC

- Main laboratory: Normal duty hours 0700 – 1700 Monday – Friday (including designated military training holidays). Routine services (Outpatient specimen collection, processing and testing) are offered during these times. Limited staffing and services are available non-duty hours, weekends, and Federal holidays.
- Clinical laboratory services are offered 24 hours a day, 7 days a week. When laboratory testing is required during non-duty hours, the specimen is to be collected by the requesting service and transported to the laboratory for processing and testing.
- Emergency (STAT) testing is performed 24 hours a day, 7 days a week.

Area Laboratory Services

- **McChord AFB Clinic Lab:** Duty hours 0700 – 1600 Monday – Friday only. No STAT testing offered. ASAP and Routine services are NOT offered during non-duty hours, weekends, Federal holidays and designated training holidays.
- **Winder Clinic Lab:** Duty hours 0700 – 1600 Monday – Friday only. No STAT testing offered. ASAP and Routine services are NOT offered during non-duty hours, weekends, Federal holidays and designated training holidays.
- **Okubo Clinic Lab:** Duty hours 0630 – 1600 Monday – Friday only. No STAT testing offered. ASAP and Routine services are NOT offered during non-duty hours, weekends, Federal holidays and designated training holidays.
- **Community Based Medical Home (Puyallup and South Sound) Locations:** Duty hours 0830 – 1700 Monday– Friday only. No STAT testing offered. ASAP and Routine services are NOT offered during non-duty hours, weekends, Federal holidays.

PHLEBOTOMY SERVICES

Ward Round Collection

- Ward rounds are conducted at 0500 hours every day with the exception of training and federal holidays. Appropriately marked laboratory requests must be received by the laboratory no later than 0300 hours. Collection of specimens other than blood or collection of blood at times other than 0500 hours will be performed by the physician or ward personnel. ASAP is the highest priority specimen recognized and collected by ward round / phlebotomy staff. Laboratory requests requiring special handling **NOT** collected on ward rounds are:
 - **Urines**
 - **Sputum**
 - **Timed Drug Levels**
 - **STAT Priority**- The collection and delivery of STAT specimens is the responsibility of the physician/clinic/ward. Because of their emergency or critical nature, the laboratory will not collect these specimens on morning ward rounds.

Outpatient Collection

- Ground floor ambulatory patient specimen collection and processing service is staffed by phlebotomists and processing personnel 0700-1700 hours, Monday through Friday to support outpatient clinic/service operations. This service is NOT offered on weekends, Federal holidays, and training holidays. When the lab is closed, the requesting clinic/service is responsible for the collection and transportation of the sample to the ground floor lab processing area.

Inpatient Specimen Processing

- Specimen processing service is staffed 24 hours a day, 7 days a week. This service supports the processing of inpatient/outpatient samples that have been collected by ward / clinic personnel and transported to the laboratory.

REFERRAL TEST SHIPPING SERVICE

Commercial Send-Out Testing Service

- The laboratory contracts and ships specimens to a variety of military and commercial laboratory services for contingency and specialized tests not performed in-house. Requests for referral testing must have prior approval from the Chief of Clinical Pathology.
- Tests are orderable in CHCS either under the same reference lab (i.e. Quest Diagnostics) name or under another similar CHCS name. The exact CHCS order entry name will be provided within the Laboratory Test Information Guide. For tests not found in CHCS, the test must be ordered under test name: **Miscellaneous Shipping**. It is imperative that the name of the test being requested is entered at the prompt to "Enter comment for Miscellaneous Referral Test", otherwise the test and samples cannot be collected and processed.

Time-sensitive Tests.

- Generally, most specimens can be submitted during other than normal duty hours. However, time sensitive send-out test specimens should not be submitted during other than normal duty hours since it is unlikely that the test will be able to be referred to a reference laboratory, shipped and/or performed within the required time constraints. Specimens for such tests usually have to be recollected on the next duty day. Please consult with laboratory POCs before collecting specimens for such tests.
- See: "SECTION VI – REQUEST / ORDER TESTS, Referral Send-Out for Commercial Testing" in this manual for ordering instructions pertaining to send-out testing.

Shipping Hours

- Normal hours 0700 – 1700 Monday – Friday. In order to ship out a specimen on the same day received the specimen must be submitted prior to 1400.
- Specimens for the certain types of testing done locally and supported by local courier service may be shipped during non-duty hours.

- No specimens are shipped to non-local referral labs via FedEx during non-duty hours. Therefore please plan accordingly for testing approvals, specimen collection, processing, storage and shipment.

RESULT REPORTING

Lab Test Results Reporting

- All laboratory results once verified are either electronically or manually placed into each respective patient's electronic record in CHCS. The CHCS electronic patient file is considered the official file and the HCP should review patient results there.
- Critical results are called directly to the requesting HCP as well as being available to the HCP via CHCS/computer terminals located throughout MAMC and clinics.
- All results for tests ordered STAT, ASAP, all tests whose certified results exceed laboratory "Critical Values", and all results that are amended will cause a Priority Result Bulletin to be automatically generated in CHCS. This bulletin is sent to the HCP entered in the system as the ordering physician. The bulletin informs the user that priority laboratory results are waiting and instructs the user to use the RNR option to retrieve.
- HCP who receives critical laboratory results that they have not ordered should bring the issue to the immediate attention of the pathology resident on call. The pathology resident will take appropriate steps to notify the correct provider of the critical laboratory results.
- Lab results are never released to the patient, or to unverified medical personnel. All patients are referred to their physician for results.

Obtaining Results During CHCS Downtime / Unavailability

- During times of system unavailability all STAT, ASAP and/or Critical results are faxed to the respective requesting location and Critical results are also called. See: Critical Lab Results And Notification below, for more on Critical results reporting.
- Results are entered and available for review in CHCS once the system is back up and operational.
- In cases where the system is down for a longer period of time, routine results are available if a request is made telephonically to the specific testing section. Those results when requested are faxed to the requesting location.
- No patient results are given out telephonically to unconfirmed requesting individuals and locations. A call back (using MAMC published phone roster) to the requesting location is used to verify requests for results.

CRITICAL RESULTS AND NOTIFICATION

Definition

- A critical laboratory value is defined as, "a value at such variation with normal as to present a pathophysiologic state that is life threatening unless some action is taken in a very short time and for which an appropriate action is possible." It is a laboratory's responsibility to communicate these values immediately and flawlessly to the responsible clinician(s). See table below for a list of analytes and established critical values.

Notification Policy and Procedure

- For complete policies, procedures and flow chart for rapid communication of critical results of tests and diagnostic procedures performed by the laboratory, See: Madigan Regulation 40-138, COMMUNICATION OF CRITICAL RESULTS OF TESTS AND DIAGNOSTIC PROCEDURES PERFORMED BY THE LABORATORY in Appendix E-1 of this document.

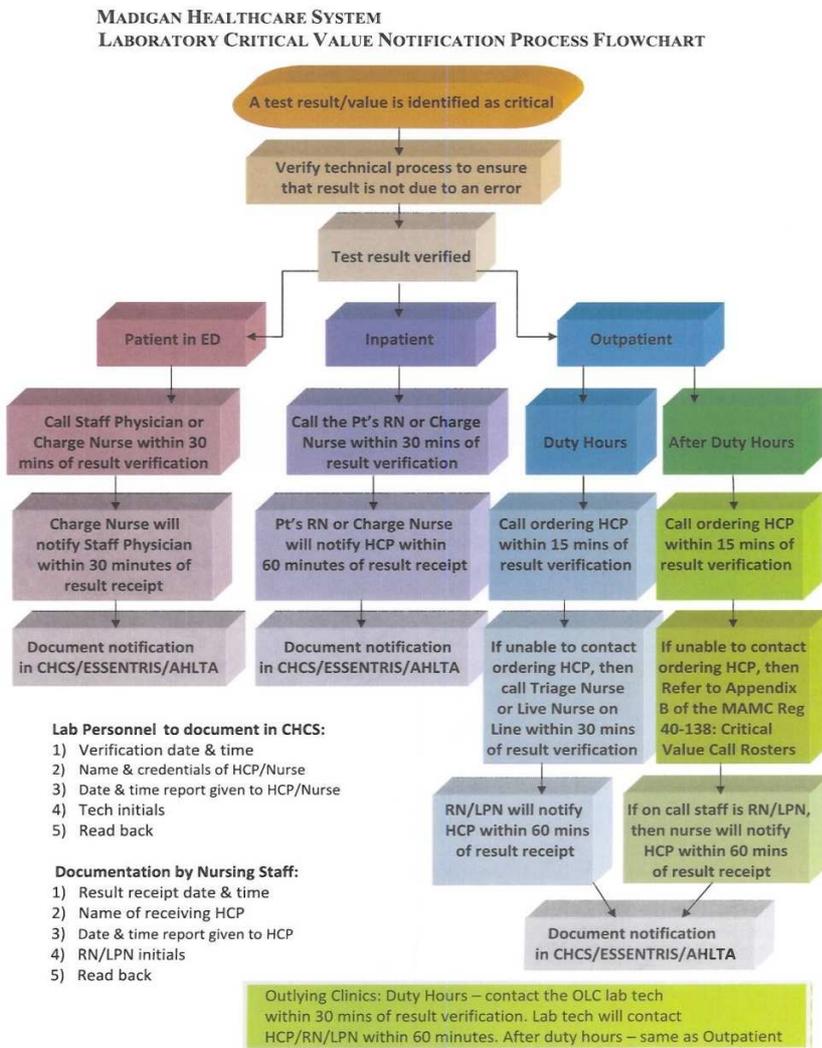
Other Related Information

Notify the Transfusion Service Medical Director or his assigned pathology resident during normal duty hours or call the Laboratory Officer of the Day (LOD) after duty hours and on

weekends/holidays immediately (within 60 minutes) if any of the following critical issues occur: The notified Pathologist will then contact the patient's physician and/or other responsible personnel and do the necessary footwork for appropriate patient management.

- Any Transfusion Reaction Workups
- Notification by the MAMC Microbiology section or a supplier donor center of a potentially bacterial contaminated platelet unit after that unit has been transfused.
- No (or very few) compatible units available for a specific patient, or if the potential exists for difficulty in finding sufficient compatible blood because a patient has multiple antibodies, an antibody against a high-frequency antigen, an antibody that cannot be immediately identified, or a warm autoantibody.
- An anticipated delay in the provision of blood for a patient, either due to the reasons stated above or because of inventory shortages. The patient can be either one in need of blood the same day, or a pre-op patient with surgery scheduled for another day. An anticipated delay for any patient is cause for pathologist/physician notification.
- A unit of blood or a blood component is transfused to the wrong patient.

Notification Process Flow Chart – Excerpt from Appendix E of this document.



**CRITICAL LAB
RESULT VALUES
LISTING**

Critical Result Values – For an itemized listing by testing section see Tables 1-6 of Madigan Regulation 40-138, COMMUNICATION OF CRITICAL RESULTS OF TESTS AND DIAGNOSTIC PROCEDURES PERFORMED BY THE LABORATORY in Appendix E-1 of this document.

**CRITICAL
LABORATORY
TESTS AND
NOTIFICATION**

Tests That are Classified as "Critical"

- These tests are not to be confused with the aforementioned critical test result(s). Tests that are determined to be "Critical" are automatically called to the provider regardless of outcome of result. Notification of these tests is within the time limits of STAT testing (within 60 minutes from the time specimen is received in the laboratory).

Critical Test Notification

- **Intraoperative Consultations** – when the on-call pathologist for intraoperative consultations is paged at 596-9936 the pathologist responds to the call immediately. He/she will wait at the frozen section room until the specimen arrives. When the procedure is completed the pathologist reports the findings immediately (within 60 minutes from the time specimen was received). Diagnosis is relayed verbally over the phone to the attending Health Care Provider or other licensed responsible caregiver. The diagnosis is recorded in written format on the internal DPALS frozen section worksheet.
- **Acute Hemolytic Transfusion Reaction** - Transfusion Service personnel will do the following upon notification of an actual Hemolytic Transfusion Reaction:
 - Notify the Medical Director, Transfusion resident, or LOD (Laboratory Officer of the Day). Upon initial notification, the Transfusion resident or LOD is responsible for reviewing the clinical situation, vital signs, etc., and discussing the case with the clinician, if necessary. He/she will then direct the transfusion workup in case additional testing, such as an elution, culture and/or gram stain on the unit, needs to be done.)
 - The Transfusion resident or LOD will notify the attending Health Care Provider of the results immediately upon receiving them from the technician. The results of the initial investigation (e.g. DAT, repeat ABO/Rh, urine free hemoglobin) will be called to the HCP or other licensed responsible caregiver within 60 minutes of receiving the blood bag, IV tubing, require clinical specimens and properly completed paperwork (SF 518 and MAMC Form OP1097-L).

**CONSULTS / LOD
ON CALL**

Consult Staff Availability

- All sections within the Laboratory have a Medical Director available at all times for consultation with the clinical staff. Medical Directors can be reached by calling the listed phone number for each respective lab section.
- During non-duty hours, the LOD may be reached by paging 291-0144.
- It must be emphasized that an autopsy permit is a consult and NOT a command to perform an autopsy.
- Autopsies are generally NOT indicated when death is a predicted part of the disease course. Autopsies should be sought only after consultation with the pathologist.

**COURIER
SERVICE**

Contracted Courier Service

- Service is available for pickup and delivery of specimens from outlying clinics to the main lab for the purpose of testing and/or shipment to commercial lab. Pickups are scheduled by request only. Please call main lab to obtain current contractor phone number.
- This courier service is maintained by MAMC and also provides services to other departments as well as to the lab. Therefore the lab is not responsible for maintaining, scheduling and/or providing the status of external pickups and deliveries which do not involve laboratory operations.

**MORGUE
SERVICES**

For morgue utilization pertaining to receiving, disposition of deceased, postmortem exam and medical-legal autopsies see: SECTION VII, ANATOMIC PATHOLOGY SERVICES, AP COMPONENT C – AUTOPSY of this manual.

SECTION IV - SPECIMEN COLLECTION, LABELING AND REJECTION CRITERIA

OSHA STANDARD PRECAUTIONS

Safety Observance

- Because the potential for infectivity of any patient's blood and body fluids is unknown, Blood and Body Fluid Precautions required by OSHA will be adhered to for all patients. These precautions, called Standard Precautions, will be followed regardless of any lack of evidence of the patient's infective status. For complete guidelines regarding infection control, see "MAMC Infection Control Policy Manual", under MAMC Policies, Regulations and Forms maintained on the MAMC intranet.
- The practice of Standard Precautions eliminates the need for using specific warning labels on specimens obtained from patients infected with Hepatitis B virus or Human Immunodeficiency Virus (HIV).
- **Safety Note:** All specimens must be treated as if infectious and capable of transmitting a serious infectious disease.

SPECIMEN LABELING CRITERIA

Label Requirements

- All respective specimen containers must be labeled in the presences of the patient, at the time of specimen collection procedure; prior to walking away from the patient/patient's location.
- Patient identification (Full Name, Social Security Number, Date of Birth) must be confirmed by reading patient's armband/ID and/or ID Card; with verbal confirmation with the patient and by comparing the Patient's NAME and DOB with the label
- The specimen collection container must be legibly and accurately labeled with the following information:
 - Patient's complete name.
 - Patient's complete SSN with FMP.
 - Patient's date of birth (DOB).
 - Date and time of specimen collection.
 - Initials of individual who collected the specimen.
 - Other label information as required for blood compatibility testing, AP specimens as well as additional information required for special testing. See the respective Section in this services guide and/or the specific test listed within the Laboratory Test Information Guide.

Other Special Label Requirements

- Additional labeling requirements may apply based on each respective section's guidelines. (i.e., Transfusion Service, Cytology, Histology) and specimen types.
- Please refer to each section listed within this manual for additional labeling requirements.

SPECIMEN COLLECTION

Preparation

- Prior to each collection, review specific applicable clinical procedures and the Directory of Services, Testing and Specimen Submission guide. Published there are specimen collection and handling requirement(s). If questions arise, feel free to contact the laboratory directly.
- Note the type of specimen to be collected, required container(s), the amount of specimen, collection material, the procedures to be used, handling and storage requirements. If specimen to be collected is for specialized referral send-out testing, complete proper forms and obtain approval by the Chief of Clinical Pathology before obtaining patient sample.

- Provide the patient with appropriate collection instructions in advance, including any applicable information on fasting, diet, and medication restrictions.
- Time sensitive send-out test specimens should not be submitted during other than normal duty hours since it is unlikely that the test will be able to be referred to a reference laboratory, shipped and/or performed within the required time constraints. Specimens for such tests usually have to be recollected on the next duty day. Please consult with laboratory POCs before collecting specimens for such tests.

Amount of specimen

- One specimen should be submitted for each test requested. However, a single tube for a multiple test request may be drawn when a large number of tests are being ordered on a particular patient and the tests are performed on the same test specimen (e.g., serum or plasma). Drawing a tube for multiple test requests helps to ensure that blood draws are limited to the least amount of blood possible, which benefits the patient.
- When a single tube is collected for a multiple test request, laboratory testing section personnel will split the specimen and ensure patient demographics are accurately transcribed to each aliquot tube. The individual overseeing the specimen collection must ensure sufficient specimen is provided for performing the requested test(s). (NOTE: Serum or plasma normally makes up approximately 40% - 45% of blood collected in a tube. Of this amount, about 75% can be removed from the clot/sediment cells, therefore only about 3 ml of serum/plasma can be obtained from a full 7-mL tube.)

Preparation of specimen

- To avoid incorrect identification, label the specimen container(s) using an adhesive specimen label immediately following the collection. Confirm the identification of the specimen in the presence of the patient.
- Process the specimen as required and store properly. The process of specimen collection, preparation, and submission presents a much greater possibility of a clerical error than the actual testing or examination of the specimen. **Errors in storage and handling compromise the integrity of the specimen and, thus, the test results.**
- Specimens should be in a leak-proof primary container with a secure closure. Care must be taken by the person collecting the specimen not to contaminate the outside of this container.
- Before being transported to the laboratory, the primary container must be placed into a secondary container that will contain the specimen if the primary container breaks or leaks in transit to the laboratory. Plastic bags with zip lock or twist tie closures are acceptable as secondary containers.
- Laboratory requisition slips (or computer generated orders i.e., Essentris Laboratory Requisition Form) should be protected from contamination and separated from the primary container. Contaminated paper such as requisition and/or transmittal forms will not be accepted. The submitting location will be notified with a request to replace any contaminated paper forms

Vacuum Tubes Containing Anticoagulants. When using vacuum tubes containing anticoagulants and preservatives:

- Tap the tube gently at a point just below the stopper to release any additive adhering to the tube or stopper.
- Permit the tube to fill completely to ensure the proper ratio of blood to additive. To ensure adequate mixing of blood with anticoagulant or preservative, use a slow, rolling wrist motion to invert the tube gently five or six times. Rapid wrist motion or vigorous shaking contributes either to small clot formation or hemolysis and fails to initiate proper mixing action.
- Check to see that all the preservative or anticoagulant is dissolved. If any preservative powder is visible, continue inverting the tube slowly until the powder is dissolved. If multiple samples are drawn, invert each as soon as it is drawn. **DO NOT DELAY.**

Vacuum Tubes Without Anticoagulants. Permit the tube to completely fill when using vacuum tubes not containing anticoagulants or preservatives.

Turbidity (Lipemic Serum). Lipid-containing serum/plasma may not be a true indicator of the patient's physiological state. It is important to obtain a representative specimen that will help the physician differentiate between transient dietary lipemia and chronic lipemia caused by other factors. To avoid dietary induced high lipid levels prior to testing, many physicians require patients to exclude the high fat foods from their diets or to fast 10 to 14 hours prior to specimen collection. For morning specimen collection, in some cases the patient may be required to fast from 8 P.M. on the previous evening.

PATIENT COLLECTED SPECIMENS

Patient Self Preparation and/or Collection

- Certain specimens require some degree of self preparation and/or collection by the patient. This may involve one or more of the following: special diet, fasting, collection in special containers, preservatives, timed collections and/or specific time of collection. The list is as follows:
 - Fecal Fat, 72-Hour Collection Instructions
 - General Collection Instructions for All Stool Specimens
 - Glucose, 1-Hour Tolerance Test

- Pinworm Collection
- Semen Analysis Collection and Submission Instructions
- Urine, 24-Hour Collection
- Urine, 24-Hour Collection Urorisk
- Urine Sample, Collecting a Clean Catch Urine Sample

Patient Instructions

- Step-by-step procedure Handouts for each collection type listed above are available at the Laboratory Front Desk. These procedures are also available in the Appendices of this manual.

SPECIMEN REJECTION CRITERIA

Specimen Rejections

- The rejection of unacceptable specimens and the special handling of sub-optimal specimens will be considered very carefully and on a case-by-case basis by the specimen processing supervisor. If a specimen must be rejected, the requester will be notified and advised of the reason(s) and a comment will be entered in the laboratory report.

Errors That Give Cause For Rejection

- **Common Collection and Labeling Errors:**
 - Improper specimen container and/or specimen preservative used for requested assay.
 - Mismatched specimen and slip - submitting service will be notified and given the opportunity to correct this situation, with exception: No corrections can be made to TS Type/Cross and Type/Screen specimens. The band will need to be cut and the process will have to be re-started from the beginning. Ward/service will not be able to correct these once they are received in the Transfusion Service. TS rejects their own mislabeled specimens, not specimen processing.
 - Contaminated specimen or slip - submitting service will be contacted and given the opportunity to provide a new specimen or slip.
 - Insufficient quantity (ensure collection container is filled to the appropriate level).
 - Inaccurate/incomplete patient instructions prior to collection.
 - Failure to label specimen and/or requisition slip correctly and to provide all pertinent information.
 - Failure to tighten specimen container lids, resulting in leakage and/or contamination of specimens.
 - Failure to provide legible physician's full name (name stamp if available), physician's last four of SSN or unique provider number, and physician's clinic/ward/pager telephone number so that results can be sent to the proper provider.
 - Failure to follow special timed draw and/or time sensitive collection requirements.
 - Failure to annotate date and time of specimen collection.
- **Serum- Collection Errors (Most Common):**
 - Failure to separate serum from red cells within 30 to 45 minutes after venipuncture.
 - Hemolysis - RBCs damaged and intracellular components spilled into serum.
 - Turbidity - cloudy or milky serum sometimes due to patient's diet.
 - Failure to annotate date and time of collection.
- **Plasma- Collection Error (Most Common):**
 - Failure to mix with proper additive immediately after collection.
 - Hemolysis - RBCs damaged and intracellular components spilled into serum.
 - Incomplete filling of the collection tube, thereby creating an error in the anticoagulant to blood ratio: affecting the accuracy of the test result(s).
 - Failure to separate plasma from cells within 30 to 45 minutes after venipuncture.
 - Failure to annotate date and time of specimen collection.
- **Urine- Collection Errors (Most Common):**
 - Failure to obtain a clean catch, midstream specimen, when required.
 - Failure to refrigerate specimen.
 - Failure to provide a complete 24-hour collection or other timed specimen.
 - Failure to add proper preservative to the urine collection container after receipt of the specimen, prior to aliquoting.
 - Failure to provide a sterile collection container and to refrigerate specimen when bacteriological examination of the specimen is required.
 - Failure to tighten specimen collection lids, resulting in leakage of specimen.
 - Failure to provide patients with adequate instructions for 24-hour urine collection.
 - Failure to annotate date and time of specimen collection.
- **Hemolysis** - In general, grossly or even moderately hemolyzed blood specimens are not acceptable for testing. Hemolysis results when the red blood cells rupture and

hemoglobin and other intracellular components spill into the serum/plasma. Hemolyzed serum/plasma is pink or red, rather than the normal, clear, straw color

- **Vacuum Tubes Containing Anticoagulants.** When using vacuum tubes containing anticoagulants and preservatives:
 - Tap the tube gently at a point just below the stopper to release any additive adhering to the tube or stopper.
 - Permit the tube to fill completely to ensure the proper ratio of blood to additive.
 - To ensure adequate mixing of blood with anticoagulant or preservative, use a slow, rolling wrist motion to invert the tube gently five or six times. Rapid wrist motion or vigorous shaking contributes either to small clot formation or hemolysis and fails to initiate proper mixing action.
 - Check to see that all the preservative or anticoagulant is dissolved. If any preservative powder is visible, continue inverting the tube slowly until the powder is dissolved.
 - If multiple samples are drawn, invert each as soon as it is drawn. **DO NOT DELAY.**
- **Vacuum Tubes Without Anticoagulants.** Permit the tube to completely fill when using vacuum tubes not containing anticoagulants or preservatives.
- **Turbidity (Lipemic Serum).** Lipid-containing serum/plasma may not be a true indicator of the patient's physiological state. It is important to obtain a representative specimen that will help the physician differentiate between transient dietary lipemia and chronic lipemia caused by other factors. To avoid dietary induced high lipid levels prior to testing, many physicians require patients to exclude the high fat foods from their diets or to fast 10 to 14 hours prior to specimen collection. For morning specimen collection, in some cases the patient may be required to fast from 8 P.M. on the previous evening.

SECTION V - SPECIMEN TRANSPORT AND SHIPPING

SPECIMEN TRANSPORT REQUIREMENTS

Specimen Containment

- Specimens should be in a leak-proof primary container with a secure closure.. Care must be taken not to contaminate the outside of the container. Needles should be removed and disposed of properly in a sharps container.
- **Safety Note:** Needles should never accompany a specimen being submitted to the lab.
- Follow all established specimen handling procedures to maintain integrity of specimen.
- The primary container will then be placed inside a secondary container. The secondary container's purpose is to contain any accidental breaks or leaks by the primary container during transport. Plastic bags with zip-lock or twist-tie closures work well for this purpose.
- Laboratory Requisition and/or other paper forms should be protected from contamination by separation from the primary container. Contaminated requisition forms will be rejected, with notified given to requesting location for replacement.

Transport Types Authorized

- Specimens transported from within MAMC to the lab processing area may utilize the Cart and/or pneumatic tube systems for delivery. **Please note that there are exceptions and certain types of specimens must be hand carried to the lab.**
- Specimens that must be hand carried and can **NOT** be placed in the MAMC cart and/or pneumatic tube system as per MAMC regulation and policies are as following.
 - Body Fluids
 - Donor Blood Bags
 - Stool

Other Special Delivery Requirements

- **Blood Gas** samples require a prior phone notification and delivery on ice immediately for testing.

**SHIPPING
SPECIMENS TO
MAMC**

- **KOH and Wet Prep** samples for Microbiology should be hand delivered immediately for testing.

General Information

- Follow all established specimen handling requirements and procedures to maintain integrity of specimen during shipment.
- Medical Treatment Facilities (MTFs) on-line with CHCS will process laboratory requests in CHCS and CHCS transmittal lists will be used to accompany all shipments.
- Individual request slips must be completed for each test/panel requested for those MTFs not on-line with MAMC's CHCS. Each slip must be clearly stamped with the name and address of the submitting activity. Alternatively, a shipping list (e.g., a work document or transmittal list that lists the patient name, SSN, date of birth, and requested tests) containing all necessary information may be used to place the orders within MAMC's CHCS.
- Each specimen container must have an appropriate and completed label as described within this manual.
- Facilities utilizing Laboratory Interoperability (LIO) will include a copy of the Shipping List Batch with each shipment. Any paperwork included should be protected from contamination by separation from the primary specimen container(s).

Containment and Safety

- Specimens readied for shipment will utilize both the primary and secondary containers to minimize possible breakage and/or leakage during shipment. The shipping box does not qualify as a secondary container.
- Absorbent material must be packed around contents to protect from any transportation shock and to contain leakage in case of primary and secondary container failure.
- DOT Hazardous Material Labeling Requirements apply. Labeling requirements are found in 29 CFR 1910.1200.

Shipping Address

- Packages being shipped to MAMC for testing should be addressed as follows:

Madigan Army Medical Center
ATTN: Specimen Receiving, Department of Pathology and ALS
9040A Fitzsimmons Drive
Tacoma, WA 98431-1100

SECTION VI – REQUESTING LABORATORY TESTS

**ORDERING LAB
TESTS**

Laboratory Test Order Requests

- The Composite Healthcare System (CHCS) is the official information system utilized by the laboratory and should be the primary means by which healthcare providers order and view laboratory test results. Decentralized Order Entry using CHCS allows HCP to enter orders for ALL clinical laboratory tests, cytology tests, surgical specimens, and limited blood bank procedures.
- For CHCS lab test information and ordering options, follow screen prompts, menu choices and Online User's Manual (OLUM) provided within the Composite Health Care System.
- All Clinical and Anatomical specimens and requests submitted to the Department of Pathology and ALS for testing must meet criteria set forth by CAP and TJC regulations and guidelines.

- Electronic orders must be completed to be processed by the laboratory. Any order that is not completed, finished or closed out will not be a valid laboratory testing request.
 - All specimens must be accompanied by an approved paper or electronic laboratory requisition form.
 - Laboratory tests are performed only at the written or electronic request of an authorized healthcare provider. Verbal orders are not acceptable as a sole source request for testing. Verbal requests for add-on testing must be immediately followed with a paper or electronic requisition.
 - Approved paper requisitions include completed/active ALTHA and CHCS orders.
 - All written requests include the required information and must be legible to ensure timely and accurate specimen processing and proper testing.
 - The laboratory will contact the ordering provider to confirm laboratory test orders that may be unclear (e.g., orders using no-standard or non-specific terms.)
- Approved paper requisitions include completed Essentris Laboratory Requisition print outs, provider prescriptions, non-MAMC provider Laboratory testing requisitions , or MAMC/Standard Form Lab Request forms; provided that all the required information has been included on the form. Examples of the following forms may be found in the Appendices of this manual:
 - Clinical Laboratory Test Procedure Request MAMC Form 1787-L, JAN 12.
 - Miscellaneous SF 557
- Because the blood bank module is not available, laboratory orders for blood bank transfusion products CANNOT be entered into CHCS. Orders for blood and blood products will continue to be placed exclusively from written orders. Additionally, autopsy requests will be completed in writing and not by using CHCS.

Lab Order Requisition Form Information Requirements

- The requisition slip must be complete and include the following:
 - Patient's full Name (last, first, MI)
 - Patient's Social security number (SSN) with Family Member Prefix (FMP)
 - Patient's Gender
 - Patient's Date of Birth (DOB)
 - Ward, clinic, or requesting location, to include the MEPR location code
 - Date/time Specimen collected
 - Test(s) or Assays requested
 - Priority (ROUTINE, ASAP, PREOP, STAT)
 - Physician's full name (name stamp if available) and physician's clinic/ward/pager telephone number. Outside provider test requests must include the address of the office/facility of the provider.
 - Pertinent clinical information for assays requiring laboratory interpretation
 - Specimen Source

Note: Completed orders entered in CHCS or ALTHA capture all the information above.

- Failure to provide the proper information on requests may result in specimen rejection.
- When entering laboratory requests into Essentris, Healthcare providers must ensure that all the information requirements listed are populated and the electronic order is completed

Tests with Special Ordering Requirements

- Some testing areas require special and/or additional information and procedure requirements which are outlined in that respective section of this manual. They include the following:
 - Cytology
 - Histology
 - Reference / Send-out commercial testing

- Surgical Pathology
- Transfusion Services

Additional Orders/Add-ons Requests Using Previously Submitted Specimens

- Verbal requests for add-on testing must be immediately followed with a paper or electronic requisition. When ordering additional orders for tests on specimens which have already been delivered to the laboratory, **Please alert laboratory staff** as to the patient's name and the additional tests that are being ordered. Reasons:
 - CHCS does not give a computer generated alert to lab staff that additional tests have been added.
 - Notice of an add-on request will allow lab staff to verify that the specimen is still viable and in sufficient quantity
 - For add-on order requests that are not ordered in CHCS, a new requisition slip from the requestor is required.

CHCS Computer Downtime/Unavailability

- The MAMC Form 1787-L, Essentris Laboratory Requisition Print out and/or other appropriate laboratory requisition slips must be used for ordering tests whenever the Composite Healthcare System (CHCS) is inoperative and/or when patient care would be compromised by waiting until the system is again available for use. If the computer downtime is known to be one hour or less, please refrain from placing manual orders unless absolutely necessary for patient care.
- During these circumstances specimens and the accompanying request slips must be properly and legibly labeled.
- All requests will be regarded as "Routine" priority unless marked "STAT" or "ASAP".
- If requests are illegible, the laboratory is not responsible for improper delivery of results. The requesting location will be given the chance to come to the lab to correct inadequate requests; patients will not be used for this purpose.

REFERRAL SEND-OUT FOR COMMERCIAL TESTING

Requesting and Approval

- When requesting /ordering specialized commercial referral laboratory testing, the HCP must have prior approval from the Chief of Clinical Pathology. This is accomplished by submission of a DPALS Form 4 Jan 2010, Request for Referral to Commercial Laboratory form by the HCP to DPLAS for review, validation and then coordination with shipping and the appropriate commercial laboratory.
- Approval must be obtained before the specimen sample is collected and submitted to the lab. Failure to comply may result in shipping delays. If unsure about reference testing and requirements, please contact and coordinate with Pathology Support Services. See: Appendix B, Request For Referral To Commercial Laboratory, DPALS Form 4 Jan 2010 in this manual.

CHCS Order Entry of Commercial Tests

- Send-out tests are orderable in CHCS either under the same Quest name or under another similar CHCS name. The exact CHCS order entry name is provided within the Laboratory Test Information guide. For tests not found in CHCS, the test must be ordered under test name: **Miscellaneous Shipping**. It is imperative that the name of the test being requested is entered at the prompt to "Enter comment for Miscellaneous Referral Test", otherwise the test and samples cannot be collected and processed.

TEST ORDER EXPIRATION POLICY

CHCS Test Expiration and Cancellation

- Laboratory test orders (written or electronic) should not go longer than 60 days before collection of the specimen. When a specimen is received and/or a patient presents at the laboratory front desk, only those orders placed within the last 60 days will be accessioned. Orders exceeding this time limit are subject to case-by-case pathologist review and approval. Any subsequent cancelled order will display a cancellation comment stating that order has

exceeded the 60 day limit.

- The intent of this time limit policy is to increase the probability that all pertinent and associated order information is valid at the time of specimen reception, processing and testing. Even though CHCS will maintain an order for up to 365 days before being automatically cancelled, a more practical period of time is required to avoid patient safety scenarios such as when trying to contact the original ordering HCP to report a critical value and finding out the HCP is no longer working within the Madigan Healthcare System.

LABORATORY ORDERING PRIORITIES

Laboratory Priorities

- **STAT** - The "STAT" priority will be used ONLY when a patient's life and/or limb is in danger, wherein immediate life-saving treatment is pending laboratory result(s). This priority is used on a limited basis. Rule of thumb: The patient's status should be that or equal to being on the SI or VSI (seriously ill or very seriously ill, respectively) list or in an unstable state in the ED (Emergency Department). **Test result availability for requests submitted with a "STAT" priority are not to exceed 60 minutes regardless of outcome, starting from the time the specimen was received in the laboratory.**
- **ASAP** - The "ASAP" priority is used only in a situation wherein treatment of a patient is urgent and the results are required as soon as possible to alleviate patient suffering and to ensure the patient's well being. **Test result availability for requests submitted with an "ASAP" priority are not to exceed 120 minutes regardless of outcome, starting from the time the specimen was received in the laboratory.** This priority is normally used for the typical ED/ICU request or for requests from Outpatient Clinics when the patient must wait for a laboratory result before treatment is initiated or modified by the appropriate HCP.
- **PREOP** - This priority is not recognized at MAMC as a priority when the requesting location is a non-DOS location. To provide for Department of Surgery lab orders requiring a test to be placed ahead of routine tests, the lab recognizes and treats the specimen as "PREOP" based only on the ordering/requesting location. PREOP qualifying tests requested/ordered by DOS should only be ordered as "ROUTINE" (to be treated in a "PREOP" manner by lab personnel). DOS specimens should be received NLT noon the day before surgery is scheduled to occur.
- **ROUTINE** - This priority represents the majority of Pathology's workload. These requests usually have results available the same day but could be longer depending on the type of procedure requested and time/day of the week of specimen receipt in the laboratory. Specimens that are shipped to reference laboratories may take approximately 10 days or longer to report.

SINGLE TESTS ORDERABLE AS STAT PRIORITY

CHCS Orderable Single Tests with "STAT" as Highest Ordering Priority

CHEMISTRY	Acetaminophen Alanine Aminotransferase Albumin Alcohol, Medical (MAMC) Alkaline Phosphatase Ammonia Amylase Aspartate Aminotransferase Bilirubin, Conjugated (Direct) Bilirubin, Total Bilirubin, Unconjugated Brain Natriuretic Peptide Calcium, Ionized, Whole Blood (MAMC) Calcium Carbamazepine Carbon Dioxide (CO2) Carboxy Hemoglobin(CO hb) Chloride CK-MB (MAMC) Creatine Kinase Creatinine	HCG QN HCO3 Ketones (Serum) Lactate Dehydrogenase Lactic Acid Lithium Magnesium Methemoglobin Myoglobin, Serum (MAMC) O2% Saturation Osmolality pH (Blood Gases) pH (Body Fluids) Phenobarbital Phenytoin Phosphorus Potassium Protein Total (MAMC Only) Protein, Urine (Random) Salicylates Sodium
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	Digoxin Fasting Glucose Gamma-GT (GGT) Gentamicin Peak Gentamicin, 18-Hour Gentamicin, Random Gentamicin, Trough Glucose Body Fluid Glucose HCG QL	Theophylline Total CO2 Total Hemoglobin Troponin I Assay Urea Nitrogen Uric Acid Urine HCG Valproate Vancomycin, Peak Vancomycin, Trough
CLINICAL MICROSCOPY	HEMATOLOGY D-Dimer (CSF) D-Dimer HCT HGB Kleihauer Test Platelet Count Sickle Cell Screen Synovial Fluid Crystals WBC COAGULATION Fibrinogen Partial Thromboplastin Time (PTT) Prothrombin Time (PT)	URINALYSIS Blood (Urine) Ketones (Urine) pH (Urine) Reducing Substances Specific Gravity (Urine) OTHER Leukocyte Esterase (Amniotic Fluid)
MICROBIOLOGY	Fecal Leukocytes Gram Stain Influenza Virus A/B AG Mononucleosis Screen N.Meningitidis GP B/E. Coli RSV Rapid AG (MAMC) Strep GP A Screen	
TRANSFUSION SERVICE	ABO/Rh	
McCHORD	No STAT Testing Available	
OKUBO	No STAT Testing Available	
PUYALLUP	No STAT Testing Available	
WINDER	No STAT Testing Available	

**TEST PANELS
ORDERABLE AS
STAT PRIORITY**

CHCS Orderable Panel Tests with "STAT" as Highest Ordering Priority

<p>CHEMISTRY</p>	<p>Bilirubin, Delta Bilirubin, Total Bilirubin, Conjugated (Direct) Bilirubin, Unconjugated Delta Bilirubin (Calculated)</p> <p>Bilirubin, Neonatal (MAMC) Bilirubin, Unconjugated Bilirubin, Conjugated (Direct) Neo Bilirubin (Calculated)</p> <p>Blood Gas (MAMC) pH (Blood Gases) PCO2 PO2 HCO3 Base Excess O2% Saturation O2 Content</p> <p>BMP (MAMC) Sodium Potassium Chloride Carbon Dioxide Glucose Urea Nitrogen Creatinine Anion Gap with K+ Osmolality (Calculated) BUN/Creatinine Ratio Calcium Glomerular Filtrate Rate (Calc)</p> <p>Chem 4 Electrolyte Panel Sodium Potassium Carbon Dioxide Anion Gap with K+ Chloride</p> <p>CMP (MAMC) Albumin Bilirubin, Total Calcium Carbon Dioxide Chloride Creatine Glucose Alkaline Phosphatase Potassium Protein Total Sodium Alanine Aminotransferase Aspartate Aminotransferase Urea Nitrogen Anion Gap with K+ BUN/Creatinine Ratio Osmolality (Calculated) Glomerular Filtrate Rate (Calc)</p> <p>CO-Oximetry Profile Carboxy Hemoglobin Methemoglobin O2 Content Oxy hemoglobin Total Hemoglobin Reduced Hemoglobin O2 Capacity</p>	<p>Drug Screen-UR (MAMC) Amphetamines Barbiturates Benzodiazepines Buprenorphine Cocaine Methadone Opiates Oxycodone Phencyclidine Propoxyphene THC (Cannabinoids) Tricycli Antidepressants</p> <p>Fetal Lung Maturity Test Fetal Lung maturity Test CSF/AF Supernatant Appearance</p> <p>Glucose/Protein CSF Panel Glucose, CSF CSF/AF Supernatant Appearance CSF Protein</p> <p>Hepatic Function Panel Albumin Protein Total Alkaline Phosphatase Aspartate Aminotransferase Alanine Aminotransferase Bilirubin, Total Bilirubin, conjugated (Direct)</p> <p>OB Panel (MAMC) Urea Nitrogen Albumin Lactate Dehydrogenase Creatinine A/G Ratio Bilirubin, Total Uric Acid Alkaline Phosphatase Protein Total Aspartate Aminotransferase</p> <p>PTH-Intact / Interop (MAMC) Parathyroid Intact</p> <p>Renal Function Panel (MAMC) Sodium Potassium Chloride Carbon Dioxide Urea Nitrogen Glucose Calcium Creatinine Phosphorus Albumin Glomerular Filtrate Rate (Calc) Anion Gap with K+ BUN/Creatinine Ratio (Calc) Osmolality (Calculated)</p> <p>Urine Lytes (MAMC) Sodium Potassium</p>
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	Inspired O2 (FiO2) Sulfhemoglobin O2% Saturation HB (CO-Ox)	
CLINICAL MICROSCOPY	HEMATOLOGY CBC RBC HGB HCT MCV MCH MCHC RDW PLT MPV LYMP% MONO% NEUT% EOS% BASO% LYMP# MONO# NEUT# EOS# BASO# GRAN% GRAN# WBC Corrected WBC Smear Review CBC (Without Auto Diff) WBC RBC HGB HCT MCV MCH Cell Count with Diff WBC/cmm Extravascular Fluid Differential Appearance RBC/cmm Gastric Occult Blood and pH pH Gastric Occult Blood Hemoglobin and Hematocrit HGB HCT Manual Differential Differential RBC Morphology Platelet Morphology	Reticulocyte Count Panel Reticulocyte Count Reticulocyte ABS COAGULATION DIC Protime Partial Thromboplastin Time (PTT) Fibrinogen D-Dimer Protime INR Prothrombin Time (PT) URINALYSIS Urinalysis (MAMC) Urine – Macro Urine – Micro Urinalysis, Diabetes Urine – Micro Urine – Macro Diabetes
MICROBIOLOGY	CSF Latex Agglutination Pnl Haemophilus Influenzae Antigen N. Meningitidis GP A,C,W135,Y N. Meningitidis GP B/E. Coli Strep GP B Antigen Strep Pneumoniae Antigen Occult Blood Pnl, 1-3 Samples	Vag Wet Prep (MAMC) Squamous Epithelial (Wet Prep) WBC (Wet Prep) RBC (Wet Prep) Yeast (Wet Prep) Clue Cells (Wet Prep) Trichomonas (Wet Prep) Other (Wet Prep) Interpretation, Vag Wet Prep+GS
TRANSFUSION SERVICE	Type and Cross ABO/RH	Type and Screen ABO/RH

	Antibody Screen	Antibody Screen
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SECTION VII - ANATOMIC PATHOLOGY (AP) SERVICES

AP INFORMATION

General Information

- AP routine hours of operation are 0730 – 1630 Monday through Friday.
- Anatomic Pathology is located on the ground floor of MAMC, Bldg 9040A within the laboratory areas. It encompasses the following sections:
 - Cytology
 - Surgical Pathology / Histology
 - Autopsy
- Information on each of AP's individual section services is listed below as AP Components.
- A Pathology resident and a staff pathologist are on call during non-duty hours. A pathologist On Call roster is published monthly and distributed to all clinical services.
- All tissue, foreign bodies and similar substances, regardless of nature, may be submitted to the Laboratory for examination and report.

SAFETY PRECAUTIONS

Standard Precautions

- **Safety Note:** All specimens handled and submitted to AP services should be treated with standard precautions as potentially infectious.

Chemical Fixative Hazards

- Extreme caution should be exercised when handling AP tissue fixatives. Contact with skin and fumes should be avoided.
- Tissue samples should be gently added to the container to avoid splashing. Many fixatives contain Formaldehyde, which is listed as a Potential Carcinogen.
- Material Safety Data Sheet (MSD) information should be readily available by law to all staff and personnel for chemical identification and procedures for accidental eye and skin exposure and inhalation and ingestion, in areas where chemicals are used and stored.

AP COMPONENT - CYTOLOGY SECTION

CYTO INFORMATION

General Information

- Any specimen amenable to cytological study will be accepted. If questions arise as to how a specimen should be handled, please contact the Cytology Section.
- Unusual cases should be coordinated with the Chief of Cytology or the Cytology Supervisor
- Cytology Section location and phone: MAMC, Room G-34-C5A, (253) 968-1723/1729.
- Established guidelines for handling and collecting cytologic specimens are to ensure the quality of patient care and safety and to help nursing staff and physicians obtain meaningful diagnostic information. Procedures are established in accordance with certifying accreditation agencies such as CAP and TJC.

CYTOLOGY SPECIMEN CONTAINER AND LABELING REQUIREMENTS

Container

- Specimens should easily fit within the selected container, allowing adequate room for fixative, and must have a lid that is leak proof. Adequate room for fixation is a container that will hold 15-20 times the volume of fixative to that of the specimen. Acceptable containers include plastic, prefilled fixative containers in various sizes, and small and large plastic buckets

- All cytology specimens will be submitted in properly labeled containers whether in a specimen cup, Preservcyt® vial, Cytolyt® vial, specimen trap, Plasma-Lyte® bag, thoracentesis bag, paracentesis bag or bottle, etc. Specimens from separate anatomic sites must be submitted in separate containers, each specifically labeled as to anatomic site.

Specimen Container Labeling

- All specimen containers must be labeled with the following information in a legible fashion:
 - Patient's Full Name
 - FMP/SSN
 - Anatomic site from which specimen was taken
 - Date/Time of Collection
 - Submitting HCP Name
 - Submitting Location (Ward, Clinic)
 - Precautionary Label for specific fixative (i.e., 10% Neutral Buffered Formalin)

Specimen Slide Labeling

- Must have the following information, written with a #2 lead pencil or solvent resistant pen, on and within the frosted end of the slide:
 - Patient's Last Name and First initial
 - FMP/Last Four Digits of SSN

CYTOLOGY LABORATORY REQUESTS

Outpatient Requests

- Outpatient cytology specimens (Gyn, Non-Gyn, and FNAs) **must have a CHCS order entry by the submitting HCP before the specimen is accepted by the Cytology Section.**

Inpatient Requests

- Must have a CHCS order entry
- Inpatient cytology specimens must be accompanied by proper and completed MAMC Form(s) or computer generated copy:
 - MAMC Form 1597-1-L (Cytology Gynecologic Requisition) for Gyn and Pap Smear specimens
 - MAMC Form 1597-L (Non-Gynecologic cytology Requisition) for Non-gyn and FNA specimens

Information Required

- All Cytology laboratory requests and/or computer generated copies must be in compliance with CAP and TJC requirements and have the following legible data:
 - Patient's Full Name
 - FMP/SSN
 - Age and/or Date of Birth
 - Sex
 - Time/Date of Specimen Collection
 - Submitting HCP Name (with phone or beeper # and the priority for Non-Gyns and FNAs)
 - Hospital Area, Clinic or Ward
 - Pertinent Clinical Information
 - Reason for the Exam
 - Any other pertinent data
- Additional data required for all MAMC Form 1597-1-L, Gyn/Pap requests must also include:
 - Date of Last Menstrual Period
 - Menopausal Status
 - Current Pregnancy Status
 - Oral Contraceptive/IUD use
 - Hormone Therapy
 - History of Hysterectomy
 - Previous Abnormal Gyn Cytology Results

**CYTO CHCS
ORDER ENTRY**

Gyn Cytology Specimen Orders for Paps

- The CHCS ORDER ENTRY-TYPE field by requesting Laboratory for order type.
- At the select LABORATORY TEST prompt, either enter AP to display pick-list (then select AP: Pap smear Cytologic Gyn or enter AP: PAP.
- Follow the request through to completion by entering the data needed for PAP smear exam.

Non-Gyn Cytology Specimens

- Orders for Non-Gyn specimens (i.e., FNs, urines, respiratory specimens, fluids, etc.) will be entered into the CHCS ORDER ENTRY – TYPE field by requesting LABORATORY for order type.
- At the Select LABORATORY TEST prompt, either enter AP to display a pick list. Select AP: CYTO NON-GYN Cytologic NON-GYN or enter AP: CYTO.
- Follow the same steps for Order Entry of Routine Surgical Specimens. Pertinent required clinical information should include:
 - History
 - Preoperative findings
 - Operative findings
 - Postoperative findings
- If there are multiple Non-Gyn specimens obtained from different sites on the same patient, each specimen site must have a separate order entry.
- All Non-Gyn specimens must have the submitting HCP’s pager or phone number included in the clinical information provided.

CHCS Unavailability

- In the event that CHCS is unavailable, all specimens submissions must be accompanied by the appropriate MAMC Form and must include ALL required data legibly written.

**CYTO SPECIMEN
FIXATION**

Fixation of Specimens Prior to Submission to Cytology Section

- As a general rule, optimal cytologic diagnosis is made on fresh specimens, without addition of Cytolyt® or Preservcyt® fixative. However, certain specimens and situations require fixation at the bedside or prior to submission to Cytology Section.

**CYTO SPECIMEN
TYPES AND
REQUIREMENTS**

TYPE	REQUIREMENTS
Abdominal Cavity Washings	Vigorously wash appropriate areas (diaphragm colic gutters, cul-de-sac, etc.) with adequate volumes of physiologic balanced salt solution (Plasmalyte). Normal saline is not recommended. Aspirate washing and submit immediately (within one hour) to the laboratory. If more than a 1 hour delay is expected in delivery to the laboratory, mix washing an equal volume of Cytolyt® fixative solution.
Bladder or Ureteral Washing/Barbotage	Washing/barbotage should be performed with an adequate volume of Plasmolyte. Normal saline is not recommended. After obtaining the specimen, mix with an equal volume of Cytolyt® fixative solution. Optimal diagnostic evaluation requires simultaneous submission of voided urine on a well-hydrated freely-voiding patient immediately prior to any instrumentation procedure.
Breast Cyst Aspiration	Specimens of breast cyst fluid should be submitted unfixated to the Cytology Section. Refer to this table, "Fine Needle Aspirations".
Breast Nipple Discharge	For obtaining a specimen from a nipple discharge, gently grip the subareolar area and nipple with thumbs and forefinger. When

	secretion occurs, allow only a pea-sized drop to accumulate. Touch a clean, labeled glass slide (Note: identify the slide by writing on the frosted end with a #2 pencil the patient's name, last four digits of SSN and FMP) to the nipple and withdraw slide quickly. Fix immediately with spray fixative or by immersing in 95% reagent alcohol. Repeat procedure until all secretions from nipple are collected on two or more slides. Smears of nipple discharge should be submitted without delay to the Cytology Section, Room G-34-18.
Bronchial Brush	Prepare patients for bronchoscopy in the usual manner. Any visible lesions can be brushed. Cut brush off catheter and immediately place the brush along with any cell clumps into a pre-filled vial of Preservcyt® fixative or RPMI solution. Note: Preservcyt® fixative solution is a poison that contains methanol and it must never come in direct contact with the patient. Preservcyt® and RRMI solutions are available from the Cytology Section.
Bronchial Washings/Lavages (BAL)	Prepare patients for bronchoscopy in the usual manner. Fill the bronchus with Plasmalyte®, Normal Saline is NOT recommended. Aspirate and re-instill the solution several times. Aspirate all the fluid from the bronchus, label, and send immediately, without fixative, to the Cytology Section. If there will be more than a one-hour delay anticipated in forwarding the specimen to Cytology, place the fluid in a pre-filled vial of Cytolyt® fixative immediately after collecting the specimen. Cytolyt® is available from the Cytology Section. BALs should be sent to cytology unfixed especially if special stains are required. BALs performed during non-duty hours require coordination with the Pathologist of the day at pager 596-9936. Safety Note: Cytolyt® fixative solution is a poison that contains methanol and must not come into contact with the patient.
Buccal Smears	Call Cytology Section at 968-1729
Cerebrospinal Fluid Cytology (CSF)	Perform spinal tap in the usual manner. Collect a CSF sample in a separate container for cytologic examination. As much volume as possible should be obtained. Send the sample immediately (within one hour) to the Cytology Laboratory Room G-34-20 without fixative. If a delay is anticipated, mix with an equal volume of Cytolyt® fixative solution and send to the Specimen Processing, Room G-34-18 for immediate Cytology processing the next duty day. Samples for cell count, chemical, microbiological studies, and/or flow cytometry should be delivered to the main Specimen Processing Area.
Cytogenic Studies	Call Bone Marrow Section Staff at: 968-1935
Effusions and Fluids	Fluids yield the best cytologic diagnosis if the specimen is immediately processed without fixation. The fluid does not need fixative even when a few days delay is expected but should be sent to the Cytology Section as soon as possible.
Fine Needle Aspirations (FNA)	Aspiration biopsies should be coordinated and scheduled with the Cytology Section at 968-1301 and/or Medical Director, Cytology (968-1723) preferably with a one day notice for optimal processing and correlation with clinical and radiographic findings. A cytotechnologist and/or pathologist assistant will be provided upon request. Due to processing requirements, assistance for FNAs cannot be provided after 1630 (regular duty hours). Any FNA assistance needed during non-duty hours requires coordination with the Pathologist-of-the-Day (POD) at pager # 291-1509. <u>FNA Equipment-</u> A FNA cart with all the necessary equipment and materials is available which allows performance of the procedure in any location of the hospital (clinic, inpatient ward, radiology suite, operating room, etc.). A cytotechnologist is available during normal

	<p>duty hours to assist in preparing smears and/or render a determination of specimen adequacy. If necessary, a preliminary diagnosis can be rendered by a pathologist, only, during or immediately after the procedure. Pathologists are also available to perform FNAs on superficial lesions.</p> <p><u>Informed Consent-</u> The patients must be counseled about the procedure and any associated risks (infection, bleeding, bruise, pain, swelling, and damage to vital structures). In addition, limitations of representative sampling, to include non-diagnostic or inadequate samples, and the alternative of open tissue biopsy should be discussed. A written informed consent must be completed MAMC Form 1172-PS.</p> <p><u>Procedure for FNA of Superficial Palpable Masses-</u> The area to be aspirated is examined and cleansed with alcohol pads. A local anesthetic may or may not be used. In general, superficial palpable masses are aspirated using small gauge needles (25 or 23 gauge, 5/8, 1 or 1 ½ inch long), attached to a 10 or 20 cc syringe in a plastic Inrad syringe holder or metal Cameco holder. After proper mobilization of the mass, the needle is inserted, suction is applied and maintained, and the needle is moved in and out of the mass in short, rapid strokes.</p> <p>When aspirate material (including blood) is visible in the hub of the needle, release suction and remove the needle from the mass and skin. If no obvious material is seen in the hub of the needle, continue the aspiration attempt for at least 15 seconds, then release the suction and remove the needle. Gentle pressure should be applied to the aspiration site. Three to five separate aspiration passes should be performed for each palpable mass being evaluated by FNA. This will improve sampling adequacy.</p> <p><u>Slide Staining/Needle Rinsing-</u> One air-dried slide preparation is stained with Diff-Quik solution (Romanowsky-type stain) for immediate review. The other slide is submitted to the Cytology Laboratory for rehydration and subsequent fixation in 95% alcohol and Pap staining. The aspiration needle is rinsed in RPMI solution which is sent for preparation of ThinPrep monolayer smear (Pap-stained) and, if enough cellular material is available in the rinse fluid, a paraffin-embedded cell block will be made (hematoxylin and eosin stain). When the differential diagnosis includes lymphoproliferative disorders, flow cytometry for lymphoid surface marker analysis can be performed on any material rinsed into a vial of pink-colored RPMI sterile solution (provided by the Cytology Laboratory). In addition, aspiration material can be submitted in sterile saline for culture, or glutaraldehyde for electron microscopy (prior coordination with Cytology Laboratory is required in the request of a culture or EM).</p> <p><u>Smear Preparation-</u> Place bevel of needle directly on one of the glass slides, in approximately the center of the slide. A small drop of fine needle aspirate material is expressed onto the glass slide. Lay another slide parallel or cross-way to and on top of the first so that the aspirate spreads to create a thin smear. Air-dry both slides completely.</p>
<p>Gastrointestinal Tract Brushings or Washings</p>	<p>Prepare patients for endoscopy as usual. Any visible lesions (esophageal, gastric, small intestinal, colonic) can be brushed or lavaged. The disposable brush tip ("brush cut") can be placed into a pre-filled vial of Cytolyt solution. Note: Cytolyt® fixative solution is a poison that contains methanol and it must never come in direct contact with the patient. Gastrointestinal tract washings or lavages can be sent in the trap bottles and/or placed into sterile specimen cup(s) with approximately 30 ml of Cytolyt® labeled with the</p>

	patient's name, SSN, specimen source, and type of specimen (e.g., washing).
Pap Smear; Thin Prep® Collection w/ Medscand Cytobrush® Plus GT, gentle touch tip and Pap-Perfect® plastic spatula.	<p>To collect specimen from the ectocervix, select contoured end of the plastic spatula and rotate it 360° around the entire ectocervix while maintaining tight contact with the ectocervical surface. Remove spatula.</p> <p><u>Rinse</u> - Rinse contoured end of plastic spatula in a vial of Preservcyt® solution by swirling vigorously 10 times. Discard the spatula. Place the cap on the vial.</p> <p><u>Insert</u>- Insert Cytobrush® Plus GT device into the endocervix until the bottom-most fibers are exposed. Slowly rotate one-quarter to one-half turn in one direction. Remove device. Do not over rotate. Additional rotation may cause bleeding and contaminate the specimen.</p> <p><u>Remove</u>- Remove the cap from the original Preservcyt® vial and rinse the Cytobrush® Plus GT in the Preservcyt® solution by rotating the device in the solution 10 times while pushing it against the wall of the vial. Swirl the device vigorously to further release material. Discard the device.</p> <p><u>Tighten</u>- Tighten the Preservcyt® vial cap so that the torque line on the cap passes the torque line on the vial.</p> <p><u>Warning</u>: Do Not use the Cytobrush® Plus GT cell collector gentle touch tip for endometrial sampling.</p>
Pap Smear; Thin Prep® Collection with Broom-like Device	<p>Prepare the patient for Pap procedure in the usual manner. For collection with the Broom-like device:</p> <p><u>Obtain</u>- Insert the central bristles of the broom into the endocervical canal deep enough to allow the shorter bristles to fully contact the ectocervix. Push gently, and rotate the broom in a clockwise direction five times.</p> <p><u>Rinse</u>- Rinse the broom as quickly as possible into the Preservcyt® solution vial by pushing the broom into the bottom of the vial 10 times, forcing the bristles apart. As a final step, swirl the broom vigorously to further release material. Discard the collection device.</p> <p><u>Tighten</u>- Tighten the cap so that the torque line on the cap passes the torque line on the vial.</p> <p><u>Record</u>- Record the patient's name and SSN/FMP on the vial.</p> <p><u>Place</u>: Place the vial and appropriate requisition form in a specimen bag for transport to the Cytology Section.</p>
Pap Smear; Conventional Pap Smear (Cervical-Vaginal Cytology)	<p>Prior to obtaining the smear, identify the slide by writing on the frosted end with a #2 pencil the patient's name, last four digits of SSN, and FMP. Utilize the spatula for the ectocervical sample first and spread the material onto the glass slide, then use the cytobrush for the endocervical sample and spread the brush material directly over the previously spread spatula sample by gently twirling the handle. Spray fix the slide IMMEDIATELY with a spray Pap fixative (Cyto-fix, Pro-fix, etc.). Make sure the nozzle of the spraying apparatus is held approximately 8 to 10 inches from the slide. An alternative to the spatula and brush is the Broom-like device which takes a sample from both the ectocervix and endocervix simultaneously and this is then spread onto a glass slide with a single smooth stroke again as above spray fix the slide IMMEDIATELY with Pap fixative (Cyto-fix, Pro-fix, etc.) and the nozzle apparatus about 8 to 10 inches from the slide. For cytohormonal evaluation, a lateral vaginal wall scraping smear from the middle third of the vagina is required (for evaluation of possible vaginal adenosis, the vagina should be free of mucus before smears are made.)</p>
Post-Bronchial	Give the patient a specimen cup before the bronchoscope is

Sputum	<p>withdrawn. All sputum expectorated after bronchoscopy and for the next one hour should be collected in the patient's specimen cup and then have approximately 30 ml of Cytolyt fixative added to cover the sputa.</p> <p>Note: Cytolyt® fixative solution is a poison that contains methanol and it must never come in direct contact with the patient.</p>
Skin Scrapings or Mucosal Vesicular Fluid (Tzanck Cell Prep)	<p>Submit two smears, one spray fixed with a Pap fixative and one air dried un-fixed for Diff-Quik staining.</p>
Sputum	<p>Upon awakening in the morning, the patient should be instructed to cough deeply and expectorate into a specimen a pre-filled specimen cup with Cytolyt® fixative and refrigerate. Note: Cytolyt® fixative solution is a poison that contains methanol and it must never come in direct contact with the patient. Any additional sputum from deep coughing after the initial specimen may be included in the same sample. For maximum diagnostic accuracy, repeat for three consecutive days. The specimen should be brought to the Cytology Section during normal duty hours.</p>
Voided Urine	<p>Patient should be well hydrated prior to obtaining the specimen. Collect a clean catch specimen after the first morning sample has been voided (50-100ml of midstream urine) and immediately mix with an equal volume of cytolyt fixative. Alternatively, the specimen can be submitted fresh (unfixed) to the Cytology Section within one hour after collection. Note: 24 hour urine specimens or those obtained from a Foley catheter bag cannot be evaluated cytologically.</p>

CYTO SPECIMEN SUBMISSION

Normal Duty Hours

- Deliver specimen with all required paperwork to MAMC room G-34-C5A during normal duty hours. Specimens not accepted without acknowledgement by a Cytology Prep Tech or Cytotechnologist.
- It is strongly recommended that specimens be delivered to the laboratory as early in the normal duty day as possible to enable processing of specimens on the same day.

Non-Duty Hours

- Deliver specimen with all required paperwork to MAMC, Laboratory Specimen Processing, room G-47-1.
- Unfixed specimens obtained when the Cytology Section is closed may be refrigerated up to 24 hours.

Submissions From Remote Locations

- Specimens from remote laboratories should be submitted in tightly sealed, double lipped containers and transported in another leak proof container filled with an absorbent pad or other absorbent material.
- All specimens must be appropriately labeled.

Improperly Submitted Specimen Handling

- All improperly submitted specimens will be held unprocessed until the HCP is contacted. When the proper requests are corrected/completed by the submitting HCP, the specimen will be processed.
- Unlabeled and improperly labeled specimens are automatically rejected and may be returned to the submitting HCP/Clinic with reason of rejection stated.
- All incidents of submission and labeling errors are tracked within the Anatomic Pathology and Department of Pathology Quality Improvement Programs.

AP COMPONENT – SURGICAL PATHOLOGY / HISTOLOGY SECTION

HISTO INFORMATION

General Info

- Normal hours of operation: 0800-1700 Monday through Friday
- Histology contact phone number: (253) 968-1728/1703
- Located MAMC, room G-35-16
- All tissue removed from patients at MAMC must be submitted for examination.
- All patients admitted to MAMC for therapy (particularly for cancer therapy) based on tissue diagnosis rendered at another institution must have a tissue diagnosis from MAMC Anatomic Pathology based on a review of the outside slides and tissue examination report.

LABELING REQUIREMENTS

Container Labeling

- **Specimen containers must be labeled with the following:**
 - Patient's Full Name
 - FMP/SSN
 - Gender
 - Date of Birth
 - Patient's Location (Clinic, Ward)
 - Submitting Physicians' Name
 - Type of Specimen (i.e., Liver Biopsy)
 - Date and time Specimen Collection

HISTOLOGY LAB REQUESTS

Information Required

- The majority of surgical specimens come from the operating rooms and can be submitted with requisition form MAMC Form 1645-L (Surgical Tissue Examination Request)

- Specimens obtained in the clinics should have orders for evaluation in CHCS prior to specimen arriving in Histology.
- Inpatient operating room specimens require a completed MAMC Form 1645-L (Surgical Tissue Examination Request) that contains the following: See Appendices in this manual for form examples.
 - Patient's Full Name
 - FMP/SSN
 - Age and/or Date of Birth
 - Sex
 - Date and Time of Specimen Collection
 - Submitting HCP Name (with phone or beeper #)
 - Hospital Area with phone number (Operating Room Number, Clinic, Ward)
 - Pertinent Clinical Information
 - Type and Location of tissue (Source of Tissue)
 - MEPRS Code
 - Any other pertinent data and any specific questions that need to be addressed at frozen section examination.

Outside Review Requests

- To request review of slides by MAMC from an outside source, requires submission of the following:
 - Memorandum or letter on institution or medical treatment facility (MTF) letterhead requesting review of surgical material.
 - Completed surgical report of submitted surgical material.
- MAMC Anatomic Pathology will then request the material and upon its arrival will render a tissue examination report and will return the material to the original contributor.
- If the patient arrives at MAMC with outside slides, the slides should be submitted to the Anatomic Pathology Service with a copy of the surgical report, (for gross information to document the accuracy of the slides), and an official memorandum request from the MTF.

HISTO CHCS ORDER ENTRY

Orders must be placed into CHCS under "TISSUE EXAM – WARD/CLINIC COLLECT-TISSUE CUP".

HISTO SPECIMEN TYPES AND REQUIREMENTS

Requirements

- Tissue should be placed in a 10% formalin solution unless special procedures are required (i.e., frozen sections, lymph nodes, etc.)
- Splitting of specimens, especially body fluids, for testing in different sections is acceptable. Tissue specimens are best triaged by the on duty Resident. Questions concerning testing priority, medical history and/or specimen splitting should be directed to the Resident Pathologist.
- Tissue for Frozen Section exam should be submitted without fixative in a container of appropriate size and labeled as previously described. In addition, the letters "FS" should appear on the label to indicate frozen section. Each submitted specimen should be accompanied by a MAMC Form 1645-L (Surgical Tissue Examination Request).
- If multiple frozen sections are submitted during a given procedure, each specimen should be sequentially labeled with the letters A, B, C, etc. Should all sequential letters be used (A through Z), specimens will then be designated sequentially by numbers (e.g., 1, 2, 3...).
- At the conclusion of the procedure, a completed copy of the MAMC Form 1645-L (Surgical Tissue Examination Request) shall be submitted with any additional specimens. This form must clearly indicate each specimen with appropriate letter designation, the anatomic site, and the letters "FS" for specimen parts submitted for frozen section examination.

- For more on special requirements, see the table below and/or contact Histology during normal duty hours.

TYPE	REQUIREMENTS
Estrogen/Progesterone Assays (ER/PR)	Estrogen and progesterone receptor studies will be performed by the immuno-histochemical method at MAMC.
Intraoperative Consultations	Tissue specimens should be taken to the Frozen Section Room in a fresh state. The purpose of the frozen section is to assist the surgeon in making intraoperative or immediate postoperative decisions on patient management. Frozen sections for reasons other than immediate therapeutic decisions are strongly discouraged, particularly when only small pieces of tissue are available for examination. Diagnosis demanding evaluation of subtle microscopic changes cannot be made with certainty on frozen sections. Furthermore, the process of freezing induces severe cellular artifacts that usually impair the evaluation of permanent sections. Under normal circumstances, frozen sections will not be performed on lymph nodes suspected of harboring a lymphoproliferative disorder. The MAMC Form 1645-L (Surgical Tissue Examination Request) is sent with tissue for frozen section must contain adequate information and the exact question that is expected to be answered by the procedure; this will aid the pathologist in arriving quickly at the correct diagnosis and shorten patient's anesthesia time. If multiple specimens from the same surgical event are to be sent at different times, a MAMC Form 1645-L (Surgical Tissue Examination Request) must accompany each specimen submission. Include with the required demographics and labeling information sequential labeling with letters A,B,C etc.
Lymph Nodes	Lymph nodes removed for diagnostic evaluation should be brought immediately to Anatomic Pathology Service in the fresh state wrapped (not suspended) in saline-wet gauzes (without fixative). This is essential. Whenever bacteriologic or fungal cultures are desired, a portion of the lymph node should be removed in a sterile manner by the surgeon and placed in an appropriate container for microbiologic studies before the remainder of the node is delivered to the pathologist. Studies that can be performed on lymph nodes received in the above manner include EM, immune-histochemistry, flow cytometry, IF, and light microscopy, and touch preparations. Delay in handling lymph nodes can result in a degree of autolysis that renders the material diagnostically inadequate.
Muscle and Nerve Biopsies	Muscle specimens are handled in a unique manner. To obtain maximum benefit (immune-histochemistry, light microscopy, and EM) tissue must be submitted fresh. To ensure an adequate specimen for proper handling, it is necessary to notify the Anatomic Pathology resident on call 24 hours prior to the biopsy procedure. Nerve biopsies require special handling, including light microscopy and EM, teasing, and flash-freezing (in certain cases). Submit fresh. The pathology staff will take care of the specimen right after it has been obtained; and coordination with the pathologist, preferably 24 hours in advance, is necessary to assure proper preservation and processing of the biopsies.
Renal Biopsies	EM, IF, and light microscopy are routinely performed on all renal biopsies. It is imperative that the special fixatives for EM and IF be available at the time tissue is removed from its blood supply and that the biopsy be placed into the fixative IMMEDIATELY. Personnel from the Histology Section are available for assisting in

	<p>the collection and fixation of specimens, and should be contacted at least 4 hours (preferably 24 hours) in advance of the biopsy. For scheduling of Renal Biopsies, call the Staff Pathologist handling Renal Biopsies. A completed Renal Biopsy Clinical History Form should be submitted with every renal biopsy in addition to the other required documents.</p>
Spleens	<p>On all spleens that are to be removed for other than trauma or incidental reasons, the Anatomic Pathology Service should be notified in advance of the procedure. The spleen should be handled in a manner similar to diagnostic lymph node biopsies and delivered immediately to Anatomic Pathology Service in the fresh state. Spleens removed as incidental specimens in other operations or removed for splenic trauma should be handled as routine surgical specimens and placed in formalin fixative.</p>

HISTO SPECIMEN SUBMISSION**Normal Duty Hours**

- Normal Duty Hours: 0800 to 1700 Monday thru Friday. All specimens require accompanying request forms and transported as soon as possible to the Histology Section, room G-35-17. Do not leave specimens without informing staff. Note: Pathology Support Section (Clinical Specimen Processing) will not sign for surgical tissue specimens during normal duty hours.

Non-Duty Hours

- Submitting on non-duty days and after 1700 hours on duty days, requires notification of the Resident on Call. The Lead laboratory Tech on duty will then sign for specimens.

Frozen Sections

- During non-duty hours, the pathologist on call must be given advance notification of an impending frozen section examination, ideally 1 hour prior to tissue removal. The "on call" pathologist can be reached at pager 291-1887. If the pathologist has not arrived by the time the specimen is delivered to the Frozen Section Room, the specimen should be transported to the laboratory and placed in the refrigerator until the pathologist arrives.
- The purpose of the intraoperative consultation using the frozen section technique is to render diagnostic information for immediate therapeutic decisions or, less frequently, patient counseling. The procedure is very labor intensive with tissue sampling being relatively limited, technically difficult, and the technique results in suboptimal light microscopy due to freezing artifacts and other limitations of the procedure.

Fresh Specimens

- When collected, please contact either a Staff Pathologist or Resident Pathologist that a fresh specimen is in-coming.

Lymph Node, Renal, Muscle, and Nerve Biopsy

- Collection of these specimens should be discussed and coordinated with the Resident Pathologist (LOD) at 291-0144
- All hematopoietic tissue removed for potential lymphoproliferative disease requires unique processing and must be submitted unfixed (fresh) to the Histology Section. Following unfixed tissue examination by the pathologist, specific tissue processing protocols may be initiated. Definitive frozen section examination diagnoses will not be rendered. Tissues exempt from specific protocol examinations include lymph node dissections for non-hematopoietic malignancies and spleen removed incidentally or for trauma.

FROZEN SECTION EXAMINATION RESULTS**Notification**

- All frozen section diagnostic results will be called to the operating room or the submitting physician's pager as soon as they are available.
- To ensure notification, always include the physician phone or pager number on the MAMC Form 1645-L (Surgical Tissue Examination Request). Generally, physician notification is within 20 minutes of receiving the specimen in the Frozen Section Room.

DIAGNOSTIC LOAN MATERIAL**Pathology Consultative Reports or Glass Slides.**

- On occasion, glass slides/paraffin embedded tissue is referred in support of patient care, corroboration of previous diagnoses, medical education, or research. Formal review of such diagnostic loan material is provided by the Anatomic Pathology Service.

Formal Review

- For formal review, "loaned" diagnostic material must be accessioned by Histology staff and given a case number. Any loaned material must be accompanied by all corresponding surgical pathology consultative reports. Final diagnosis will be provided as soon as possible, but will not be treated as a priority case.

Formal Review Requirement

- All patients receiving definitive therapy, based upon an outside pathologic diagnosis, should have such diagnostic material made available to the Anatomic Pathology Service. It is the responsibility of the clinical HCP to obtain such material and make it available for MAMC pathologist review. Major medical treatment pursuant to the outside facility diagnosis should not be undertaken until such review is completed. Failure to do so engenders certain medical and/or legal risk.

AP COMPONENT - AUTOPSY

AUTOPSY INFORMATION

Indications for Autopsies Performed by Anatomic Pathology Service.

- Indications include clarification of cause of death, manner of death, delineation of extent of disease, evaluation of the effects of therapy, and medico legal reasons.
- Permission for autopsy is generally obtained by the attending physician. After the permission SF 523 (Disposition of Body) has been signed by the legal next of kin, it must be sent to the Decedent Affairs officer in the Patient Administration Office for authentication.
- For those deaths in which there is a question whether or not the Pierce County Medical Examiner has jurisdiction, the attending physician should contact the Decedent Affairs officer in the Patient Administration Office during duty hours. During non-duty hours and on weekends/holidays, the AOD should be contacted. The Medical Examiner's Office will be contacted by either the AOD or the Decedent Affairs officer. If the Medical Examiner has jurisdiction, he may either assume responsibility for the case or relinquish responsibility to MAMC

Requirements

- Before Anatomic Pathology can schedule an autopsy, both the patient's complete chart and authenticated autopsy permission must be received. Scheduling of autopsies is at the discretion of the Anatomic Pathology Service. It is our policy to perform autopsies during normal duty hours, Monday through Friday. If there is a need for an autopsy during times other than those listed above, the pathology resident on call should be notified. Autopsies cannot be performed until autopsy permission is authenticated. This stipulation also applies to postmortem needle biopsies.
- Physicians requesting postmortem examinations are encouraged to contact the pathologist performing the autopsy to provide information as to the questions expected to be answered by the autopsy (968-1699). Attendance at the autopsy by the requesting physician is also encouraged, and pathology personnel will attempt to contact the patient's physician to notify him/her about the time of autopsy.

Autopsy Result Reporting

- The Preliminary Autopsy Report of Death and the final autopsy report are submitted directly to the Patient Administration Division and the chief of the service attending the patient. The Preliminary Report is submitted within 3 working days and the final report of uncomplicated cases within 30 days. Physicians needing copies of these reports should contact the Patient Administration Division or the chief of their service.
- Questions relating to the Autopsy Service may be addressed to the office of the Chief, Anatomic Pathology Service (968-1698).

MORGUE OPERATIONS

Post mortem Examinations / Disposition of Deceased

- All bodies received by the morgue, regardless of whether or not to be autopsied must have the following requirements met prior to receipt:
 - Proper identification of the body by attaching completed DA Form 8-219 (Body Identification), one each, on hand and foot.
 - SF 523A (Disposition of Body) should accompany the body to the morgue.
 - In cases to be autopsied DD Form 565 (Statement of Recognition of Deceased) must

- o be received accompanying the SF 523A.
- o In death cases which require an autopsy, the Nurse will release medical records MEDDAC Reg 40-406 of the deceased to Anatomic Pathology Service. No autopsy will be performed without the medical record.

Authorization For Postmortem Examination

- Form SF 523 (Disposition of Body) is required
- In routine deaths without medical-legal considerations, the next of kin should be contacted and informed of the availability of autopsy services.
- A pathologist is available 24 hours a day for consultation as needed by cellular telephone - contact the laboratory for the name and phone number of the Pathologist on call.
- **Active Duty Personnel Requirements**
 - o Forward Hospital REPORT OF DEATH and the CLINICAL RECORD to Patient Administration Division during duty hours and to the AOD during non-duty hours.
 - o Autopsies may be performed on active duty personnel "by order of the deceased's Unit Commander" (usually involves the local investigating Criminal Investigation Division office) in accordance with authority and guidelines instituted by the Office of The Armed Forces Medical Examiner (OAFME) under most circumstances.
 - o Permission may also be obtained, but is not required from the next of kin, as with any other patient.
- **Dependents and Non-Active Duty Military Requirements**
 - o Witnessed signature of the LEGAL NEXT OF KIN is mandatory. Witnessed telephonic communication or telegrams may be legal forms of permission in lieu of signature. These must later be confirmed in writing.
 - o The AOD or Patient Administration Division determines the succession of next of kin.
 - o If there is any limitation specified in the authorization, it must be typed clearly on the SF 523 (Disposition of Body). Consult the pathologist regarding limitations. If no limitations are specified, the word "NONE" will be entered in the appropriate space.
- **Objections to Autopsy By the Next of Kin or Other Relatives**
 - o In certain cases a Commander, Armed Forces Regional Medical Examiner or other local authority, in accordance with authority and guidelines of the OAFME, may order an autopsy, without consent of next of kin.
 - o These cases should be brought to the attention of the commander, the Patient Administration Division, and the pathologist.
- **Special permission**
 - o Permission from the next of kin for the removal of organs to be utilized for transplantation purposes must be clearly indicated on SF 523, and SF 523B must be completed.
 - o **This is a mandatory legal requirement.** There can be no exceptions.

Medical-Legal Autopsies

- Certain autopsies are required for medico-legal purposes, are done under legal or regulatory authority of the OAFME and in cooperation with the local investigating Criminal Investigation Division Office, and need not have permission requested of next of kin. Autopsies may be performed by the OAFME in all of the following cases through command channels. Next-of-kin will not be asked.
- Reasons for Medical-legal Autopsies:
 - o Suspected cases of homicide, suicide, accidental deaths, other trauma, or use of toxic agents.
 - o Death in active duty soldiers, unless there is strong clinical evidence of a preexisting medical condition that clearly explains the death.

- Death in a person under age 18
 - Un-witnessed death in a person who is not a patient in the Health Care Center.
 - Death within 24 hours of an invasive surgical procedure.
- The physician should notify the Patient Administration Division if there is any question regarding whether or not a medical-legal autopsy is required.

SECTION VIII – CLINICAL PATHOLOGY (CP) SERVICES

GENERAL INFORMATION

- Clinical Pathology contributes multiple laboratory services found within the following area of testing:
 - Chemistry Section
 - Clinical Microscopy Section – Includes Hematology, Special Hem, Coagulation, Special Coag & Urinalysis
 - Microbiology Section
 - Molecular Diagnostics
 - Transfusion Service
- Information on each section is found within this section of this manual as Clinical Pathology (CP) Components.

CP COMPONENT – CHEMISTRY SECTION

GENERAL INFORMATION

Section Information

- Chemistry Section is located in the Dept of Pathology, Bldg 9040A, Room G-47-2B
Contact phone number: (253) 968-1945

INFORMATION AND LABELING REQUIREMENTS

Labeling Requirements

- All chemistry test request forms and specimen container(s) must contain the following information:
 - Patient's Full Name
 - FMP/SSN
 - Date of Birth
 - Date/Time of Collection
 - Initials of Person that Collected Specimen

SPECIMEN COLLECTION AND SUBMISSION

Specimen Collection and Handling Instructions

- Consult the **Lab Test Information Guide** of this manual, CHCS "Lab Test Information" (LTI), Chemistry Section and/or Specimen Processing Section for proper methods of chemistry specimen collection and handling procedures.

Specimen Rejection

- For a list of possible errors that may cause specimen rejection, see: Section IV, Specimen Collection, labeling and Rejection Criteria of this manual.
- Improper identification, labeling, collection and handling of specimens contribute substantially to inaccuracy and confusion which is detrimental to the patient. Specimen collection and/or mishandling errors will be evaluated on a case-by-case basis and may be cause for specimen rejection and/or require comments made in CHCS
- **Specimens NOT accurately labeled will be rejected.**
- Moderate to grossly hemolyzed samples will be rejected for ALL chemistry tests. A specimen redraw will be necessary.

TESTING REQUIREMENTS

Interfering Substances

- Accuracy of results on a lipemic (most commonly caused by non-fasting specimen) or hemolyzed specimen are questionable. These conditions may require specimen re-draws and testing based on the degree of severity.
- It is also important to make Chemistry Section aware of medications so that proper precautions can be taken to assure the best test results.

- Blood alcohol (ethanol) testing requires a non-alcoholic disinfectant should be used to prepare the site of venipuncture. Do not use ethyl alcohol, isopropyl alcohol, acetone, ether or Chloroprep.

Blood Chemistry: Fasting, Diet and Medications

- When certain testing requires a fasting state, this means that food and drinks, except for water, are to be withheld from the patient for a minimum of 12 hours. Water may be given, except when a gastric analysis, gastric wash or urinary concentrating ability test is to be done.
- Currently the only Chemistry test that requires the specimen to be drawn in a fasting state (12-14 hour fast) is a fasting glucose.
- If at all possible, all drug medications should be withheld from 24 to 48 hours prior to having blood drawn except for therapeutic drug monitoring.
- In the analysis of therapeutic drugs, additional data on the patient will be helpful. When ordering a therapeutic drug in CHCS, the dose time will be asked and should be answered as accurately as possible in the Order Comment section.

Blood Gas

- Blood gas testing may be ordered STAT only. The samples must, however, be handled correctly to ensure accurate results. Since arterial blood samples must be analyzed within 10 minutes if left at room temperature, the laboratory requires all samples to be placed in a mixture of ice and water before bringing the sample to the laboratory.
- Properly cooled samples must be analyzed within 1 hour to avoid sample damage. All blood gas samples must be quickly delivered to the laboratory on ice.
- All blood gas results will be called to the ordering provider, on-call provider or registered nurse.

Urine Chemistry

- Instructions and appropriate urine collection containers may be obtained at the Laboratory front desk. A 24-hour urine requiring an acid preservative may be collected in conjunction with a 24-hour test that does not require any acid or other preservative as long as the specimen is refrigerated during collection and is brought to the laboratory immediately upon completion.
- If at all possible, instruct patient to withhold all drug medications from 24 to 48 hours prior to a timed urine collection. For timed specimens, the patient should be instructed to empty the bladder upon arising in the morning of the starting day and discard that urine. All urine passed throughout the subsequent timed period is collected in the container provided and refrigerated. Upon arising the next morning, the patient completely empties the bladder and adds this urine to the container. This last specimen terminates the 24-hour collection and the urine collection is submitted to the laboratory.
- If a creatinine clearance test is requested, a blood creatinine specimen must be collected by the laboratory within the 24-hour time frame usually after termination of the collection.
 - Collection time for quantitative urine chemistry tests is of utmost importance in order to properly report urine chemistry results.
 - It is essential to be able to distinguish 24-hour urine collections from those collections which are less than 24 hours.
 - The volume of urine measured without any written indication of the collection period cannot be relied upon solely as a means of identifying the time interval of collection.
 - In order to insure meaningful and accurate reporting, please indicate the time period of urine collection. All that is required is an indication such as "random", or "24 hour" in the comment section of CHCS.

- o Your attention to the matter will facilitate the initial processing and final reporting of urine chemistry tests.

Toxicology

- Medical drug screens require a minimum of 20 mL of urine and do not require a chain of custody.
- These specimens are screened by immunoassay technology for cocaine metabolites, opiates, benzodiazepines, phencyclidines, barbiturates, cannabinoids, methamphetamine, amphetamines and methadone using recommended screening cut-off concentrations by the Substance Abuse and Mental Health Services Administration.

Blood Alcohol Testing

• **Medical Blood Alcohol**

- o Blood alcohol (ethanol) drawn for medical reasons to assist the medical officer in diagnosis and treatment are drawn in a gray-top tube.
- o A non-alcoholic disinfectant should be used to prepare the site of venipuncture. Do not use ethyl alcohol, isopropyl alcohol, acetone, or ether.

• **Legal Blood Alcohol**

- o The Department of Pathology, MAMC does **NOT** draw or accept specimens for Legal Blood Alcohol testing purposes.
- o For Legal Drug/Blood Alcohol collection and testing procedures please refer to established installation command policies, installation substance abuse program and/or local/state laws where a legal blood alcohol level determination is required as evidence in a court of law.
- o Note: A Command directed Medical Blood Alcohol may be performed at MAMC. This test result (not being a legal Blood Alcohol) can only be used in a Command Referral enrollment and treatment program. A close correspondence with the Judge Advocate General’s office is advised in these cases. Additional information on this subject may be found in AR 600-85, Army Substance Abuse Program (ASAP).

CHEMISTRY TESTING PERFORMED

“In-House” Chemistry Tests Listed by Analyzer/Method

Specimen source: serum/plasma (unless otherwise noted as CSF, Urine or other)

Abbott® TDx/FLx	BioRad® Variant II
Fetal Lung Maturity (FLM)	Hemoglobin A1C
Advanced® Micro-Osmometer	Fetal Fibronectin Kit
Osmolality Osmolality (Urine)	Fetal Fibronectin (FFN)
Bayer HealthCare® Rapid Lab 1265	Haake Buchler® Chloridometer
Blood Gases: CO ₂ Hb HCO ₃ HHB O ₂ % Saturation O ₂ Hb Met Hb pCO ₂ pH pO ₂ tHb COHb Ca++ (Ionized Calcium)	Sweat Chloride

<p>Beckman Coulter® DxI Unicel 800</p> <p>Alpha Fetal Protein (AFP) Anti-Thyroglobulin B-Type (Brain) Natriuretic Peptide (BNP) Cancer Antigen 125 (CA-125) Cancer Antigen 15-3 (CA 15-3) Carbohydrate Antigen 19-9 (CA 19-9) Carcinoembryonic Antigen (CEA) Cortisol Creatine Phosphokinase–MB (CK-MB) Dehydroepiandrosterone Sulfate (DHEA-S) Estradiol Ferritin Folate Follicle Stimulating Hormone (FSH) Free Prostate Specific Antigen (Free PSA) Free Thyroxine (Free T4) Intact Parathyroid Hormone (Intact PTH) Luteinizing Hormone (LH) Myoglobin Progesterone Prolactin Testosterone Thyroglobulin Thyroid Stimulating Hormone (TSH) Total β- H.Chorionic Gonadotropin (β-HCG) Total Prostate Specific Antigen (Total PSA) Ultrasensitive Insulin Vitamin B12</p>	<p>ImmunoCap® 250</p> <p>Cyclic Citrullinated Peptide IGG (CCP) Immunoglobulin E IgE Celiac Disease Panel (MAMC) <i>Gliadin IgA</i> <i>Gliadin IgG</i> <i>Tissue Transglutaminase IgA</i> <i>Tissue Transglutaminase IgG</i> Gliadin Disease Panel (MAMC) <i>Gliadin IgA</i> <i>Gliadin IgG</i> <i>Tissue Transglutaminase IgA</i> <i>Tissue Transglutaminase IgG</i> Northwest Rast Panel (MAMC) <i>Alder IgE KU/L</i> <i>Alternaria SP IgE KU/L</i> <i>Birch IgE KU/L</i> <i>Boxelder Tree IgE KU/L</i> <i>C Herbarum IgE KU/L</i> <i>Cat Dander IgE KU/L</i> <i>D Pteronyssinus IgE KU/L</i> <i>Dog Dander IgE KU/L</i> <i>Thistle Russian IgE KU/L</i> <i>Timothy IgE KU/L</i> Nut Food Allergy Panel (MAMC) <i>Almond IgE KU/L</i> <i>Coconut IgE KU/L</i> <i>Peanut IgE KU/L</i> <i>Pecan Nut IgE KU/L</i> <i>Sesame Seed IgE KU/L</i> Ped Food Allergy Panel (MAMC) <i>Codfish IgE KU/L</i> <i>Egg White IgE KU/L</i> <i>Milk IgE KU/L</i> <i>Peanut IgE KU/L</i> <i>Sesame Seed IgE KU/L</i> <i>Soybean IgE KU/L</i> <i>Wheat IgE KU/L</i> Shellfish Rast Panel (MAMC) <i>Clam IgE KU/L</i> <i>Crab IgE KU/L</i> <i>Lobster IgE KU/L</i> <i>Shrimp IgE KU/L</i> <i>Tuna IgE KU/L</i> Stinging Insects Panel (MAMC) <i>Bee Honey IgE KU/L</i> <i>Hornet White Faced IgE KU/L</i> <i>Hornet Yellow IgE KU/L</i> <i>Wasp Paper IgE KU/L</i> <i>Yellow Jacket IgE KU/L</i></p> <p>Note: Tests within Panels are not orderable as individual tests.</p>
<p>Beckman Coulter® Icon 25 Kit</p> <p>β-HCG, Qualitive β-HCG, Qualitive (Urine)</p>	<p>Other Testing</p> <p>Ketones</p>
<p>Beckman Coulter® Image Beckman</p> <p>Ceruloplasmin Kappa Light Lambda Light</p>	<p>Signify® Drugs of Abuse Screen Kit</p> <p>Drug Screen-UR (MAMC): (Urine) Amphetamine (d-amphetamine) Barbiturates (Secobarbital) Benzodiazepines (Oxazepam)</p>

	Cocaine (Benzoyllecgonine) Marijuana (THC) 11-nor-9-THC-9 COOH MDMA (3,4 Methylenedioxy methamphetamine) Opiates (Morphine) Oxycodone Phencyclidine Propoxyphene Tricyclic Antidepressants (Nortriptyline)
Vitros® 5600	
A-1-Antitrypsin Acetaminophen Alanine Aminotransferase (ALT) Albumin Alcohol Alkaline Phosphatase (ALP) Ammonia Amylase Amylase (Urine) Anti-Steptolysin O (ASO) Aspartate Aminotransferase (AST) Calcium Calcium (Urine) Carbamazepine Carbon Dioxide (CO ₂) Chloride Cholesterol Complement Component 3 (C3) Complement Component 4 (C4) Conjugated Bilirubin (Bc) Creatine Kinase (CK) Creatinine Creatinine (Urine) Digoxin Direct High-Density Lipoprotein (dHDL) Direct Low-Density Lipoprotein (dLDL) Direct Total Iron Binding Capacity (dTIBC) Gamma-Glutamyl Transferase (GGT) Gentamicin Glucose Glucose (CSF) Glucose (Urine) Haptoglobin High-Sensitivity C-Reactive Protein (hsCRP) Homocysteine	Immunoglobulin A (IgA) Immunoglobulin G (IgG) Immunoglobulin M (IgM) Iron Lactate Lactate Dehydrogenase (LDH) Lipase Lithium Magnesium Magnesium (Urine) MicroAlbumin (Urine) Phenobarb Phenytoin Phosphorus Phosphorus (Urine) Potassium Potassium (Urine) Prealbumin Protein (CSF) Rheumatoid Factor Salicylate Sodium Sodium (Urine) Theophylline Total Bilirubin Total Protein Total Protein (Urine) Transferrin Triglycerides Troponin I Unconjugated Bilirubin (Bu) Urea Nitrogen (BUN) Urea Nitrogen (BUN) (Urine) Uric Acid Valproic Acid Vancomycin

CP COMPONENT – HEMATOLOGY / COAGULATION SECTIONS

GENERAL INFORMATION

Section Information

Hematology and Coagulation sections make up the majority of the disciplines for Clinical Microscopy. Located in MAMC, Bldg 9040A, Rooms G-47-2B and G-37-3A, Dept of Pathology. Telephone: (253) 968-1940

INFORMATION AND LABELING REQUIREMENTS

Labeling Requirements

- All test request forms and Specimen container(s) must contain the following information:
 - Patient's Full Name
 - FMP/SSN
 - Date of Birth
 - Date and Time of Specimen Collection
 - Initials of Person that Collected Specimen

SPECIMEN COLLECTION AND SUBMISSION

Specimen Collection and Handling Instructions

- Consult the Lab Test Information Guide listing of this manual, CHCS Lab Test Information or Specimen Processing Section for proper methods of specimen collection and handling procedures.
- Refer to the following procedural requirements before drawing coagulation samples:
 - 4.5 ml of blood is necessary for 5 ml blue top tube
 - Do not insert needle through stopper - remove needle from syringe and stopper from tube then fill tube with correct amount of blood. Or use a two vacutainer draw with a red top being the first tube and a blue top being the second tube drawn. Draw at least 1cc into the red top tube before completely filling the blue top tube.
 - Excessive trauma to venipuncture site should also be avoided. Minimal tourniquet pressure is required.
 - Please remember that any problems with the draw may affect the results.
 - Anti-coagulant contained in 5 ml blue top tubes is exact for 4.5 ml draw of blood, so less than 4.5 ml of blood will be inaccurate.
 - Contact the laboratory for special tubes for drawing Fibrin Degradation Products testing.

Specimen Rejection

- For a list of possible errors that may cause specimen rejection, see: Section IV, Specimen Collection, Labeling and Rejection Criteria of this manual.
- Improper identification, labeling, collection and handling of specimens contribute substantially to inaccuracy and confusion which is detrimental to the patient. Specimen collection and/or mis-handling errors will be evaluated on a case-by-case basis and may be cause for specimen rejection and/or require comments made in CHCS.

HEMATOLOGY TESTING PERFORMED

Available Testing

- Complete blood count (CBC) is provided by the Beckman Coulter® LH780 instrumentation and provides the following tests:
 - WBC
 - RBC
 - Hgb
 - Hct
 - MCV
 - MCH
 - MCHC
 - RDW
 - PLT
 - MPV
 - Electronic 5-part differential

- Manual Differentials
- Erythrocyte sedimentation rate (ESR)
- Sickle cell testing
- Platelet estimates
- Reticulocyte counts
- Coagulation testing
- Body fluid cell counts
- Eosinophil nasal smears
- Synovial fluid cell count
- Crystal evaluation
- G-6-PD Screen

TESTING REQUIREMENTS

Manual differentials

- Performed upon request or whenever results meet one or more of the following criteria.
NOTE: The criteria varies depending on age and sex of the patient.
 - WBC Adult: 2,500 or below, 17000 or above
 - Pediatrics: less than 6 years old, less than 2,500 or greater than 20,000 m³
 - Hemoglobin Adult: 7.0 or less
 - Pediatric less than 1 week; less than 14 or greater than 26
 - HCT Adult: 21% or less
 - Pediatric less than 1 week: less than 40 or greater than 66
 - MCV of 60.0 or less ,105.0 or greater
 - Platelet counts below 100,000 or above 700,000
 - Machine generated results, which have alert flags

Platelets

- Platelets are counted on Beckman Coulter instrumentation in the range of 0 to 3,000,000 platelets per micro liter. If a count is less than 100,000, a platelet estimate will be performed and reported through CHCS.

COAGULATION TESTING PERFORMED

Coagulation Tests

- Automated testing is performed by the Stago® STA Compact analyzer:
 - Prothrombin Time (PT)
 - Activated Partial Thromboplastin Time (APTT)
 - Fibrinogen
 - D-Dimer

BONE MARROW TESTING

Submission

- Both bone marrow Core and Asparate samples are submitted to the Hematology for testing. Aspirate samples are stained and examined in Special Hematology Section and all bone marrow core samples are submitted to AP for processing and examination.

Bone Marrow Aspirate

- This test procedure is not ordered in CHCS by the HCP. A "MAMC Form 1645-L, Surgical Tissue Examination Requisition" is submitted with specimen and the order is placed by Pathology personnel only.
- A brief clinical history must accompany the specimen being submitted.

Bone Marrow Donations

- To be a Bone Marrow donor, please contact and coordinate with the Bone Marrow Donor Registry program representative at 968-3685.

CP COMPONENT – URINALYSIS SECTION

GENERAL INFORMATION

Section Information

- This section is also part of Clinical Microscopy and falls under that area of supervision.

- Urinalysis is located in Bldg 9040A, MAMC, room G-47-2B. Contact phone # is: 968-1940.

INFORMATION AND LABELING REQUIREMENTS

Labeling Requirements

- Lab Request forms completed in full and Specimen container(s) must display the following information:
 - Patient's Full Name
 - FMP/SSN
 - Date of Birth
 - Date and Time of Specimen Collection
 - Initials of Person that Collected Specimen

SPECIMEN COLLECTION AND SUBMISSION

Specimen Collection and Handling Instructions

- Consult the "Lab Test Information Guide" listing of this manual, CHCS "Lab Test Information", Clinical Microscopy Section and/or Specimen Processing Section for proper methods of specimen collection and handling procedures.
- Samples collected in inappropriate containers will not be accepted.
- For urine collection procedures also search appendices of this manual.

Specimen Rejection

- Improper identification, labeling, collection and handling of specimens contribute substantially to inaccuracy and confusion which is detrimental to the patient. Specimen collection and/or handling errors will be evaluated on a case-by-case basis and may be cause for specimen rejection and/or require comments made in CHCS.
- For information on specimen rejection, See: Section IV, Specimen Collection, Labeling and Rejection Criteria of this manual.
- Specimens **NOT** accurately labeled will be rejected.

URINALYSIS TESTING & EXAMINIATIONS PERFORMED

Routine Urinalysis

- Automated testing is performed by the Iris® iQ Elite 200 on a random specimen of urine and provides the following tests and examinations:
 - Color
 - Clarity
 - pH
 - Specific Gravity
 - Protein
 - Glucose
 - Ketones
 - Urobilinogen
 - Blood
 - Bilirubin
 - Nitrite
 - Leukocyte Esterase
 - Microscopic analysis (Automated)

Other Orderable Tests

- Clinitest
- Myoglobin

TESTING REQUIREMENTS

Routine Urinalysis

- Testing is done on a random specimen of urine, but the first morning specimen is preferable.
- Specimen collection should use the clean-catch or mid stream technique for obtaining specimen.

Confirmation Testing

- Ictotest confirmation test is automatically performed when bilirubin is positive.

Other testing requirements

- Clinitest determinations for total reducing substances are routinely performed on all urine specimens from pediatric patients less than 2 years old.

CP COMPONENT – MICROBIOLOGY SECTION

GENERAL INFORMATION

Microbiology Section Information

- All Microbiology sections are found in the Dept of Pathology and located within MAMC, Bldg 9040A. the main room number is G-45-14.
- Contact phone number is: 968-1753.
- Microbiology is a vast field of clinical study that encompasses testing in the following disciplines:
 - Bacteriology
 - Mycobacteriology
 - Mycology
 - Parasitology
 - Serology
 - Immunology
 - Virology

INFORMATION AND LABELING REQUIREMENTS

- Lab Request forms completed in full and Specimen container(s) must display the following information:
 - Patient's first and last name
 - FMP/SSN
 - Clinic
 - Attending physician's name
 - Date and Time of Specimen Collection
 - Site of infection or anatomic site of collection
 - Antibiotic therapy, if any

SPECIMEN COLLECTION AND SUBMISSION

Specimen collection

- Proper specimen selection, collection and transport are critical to ensure that the specimen is representative of the disease process with minimal contamination from the microorganisms present in adjacent tissues.
- Consult the **Laboratory Test Information Guide** listing of this manual, CHCS Lab Test Information (LTI), Microbiology Section and/or Specimen Processing Section for proper methods of specimen collection and handling procedures.

- All specimens should be collected in a sterile container, placed in a clean biohazard bag, properly identified, and delivered to the laboratory without delay. Any pertinent information that will aid the microbiology staff in isolation of potential pathogens should be included on the CHCS request and in the comment section (e.g. suspected microorganisms and/or antibiotic therapy). The processing of specimens when the site of infection or anatomic site of collection is not indicated often leads to erroneous data which may be harmful to the patient.
- Aerobic Culturette: Several swab culture transport systems are used throughout the Healthcare Center. Each consists of a swab and sterile transport container. Maintain aseptic technique during the collection of the specimen. Contamination of the swab with extraneous skin or environmental flora negates the value of the culture results. Refer to the package instructions for each type to determine if breaking of the glass ampule inside the container is required.
- Anaerobic Cultures: Anaerobic culturettes and Port-A-Cul Tubes are available from Federal Supply. Transport media contained in these transport systems provide a reduced oxygen environment in order to maintain the viability of oxygen-labile organisms. Obtain the specimen using aseptic technique to avoid extraneous contaminating flora. Place in the transport media without delay. Tissue samples or aspirates are the preferred specimens for isolation of anaerobic or fastidious organisms. Tissue samples may be placed in a sterile container and delivered to the Microbiology laboratory within 30 minutes.
- The clinical information or remarks sections of CHCS should be used when unusual circumstances, diagnoses, or pathogens are suspected.
 - Unless noted, only routine lab methods will be used.
 - Routine methods often fail to detect unusual pathogens, i.e., Tularemia, Brucellosis, etc.
 - The physician's failure to supply the above information may produce misleading data, for which he/she is responsible.
 - It may also cause infection of laboratory personnel through failure to alert them to potential pathogens.

Specimen Submission

- Transport specimens to the laboratory as soon as possible after collection. For best results, fluids and aspirates must be processed within 30 minutes after collection.
- Every effort should be made to submit enough specimen for the procedure requested, i.e., a small amount of fluid, sputum, etc., should not be submitted for multiple procedures in a single container.

SPECIMEN REJECTION

General Microbiology Rejection Guidelines

- Specimens which have not been properly labeled, collected and/or transported will be subject to rejection. Irretrievable specimens will be judged on an individual basis and the specimen will be salvaged whenever possible. The HCP will be contacted to help resolve the deficiency or to explain the rejection. Reasons include:
 - Delays in transport which affect test result
 - Duplicate specimens (except for blood culture) in a 24-hour period
 - Improper collection container, handling, or collection, including unsuitable preservation and incorrect use of transport media
 - Inadequate volume
 - Inappropriate specimen for a given test
 - Leaking specimen or gross external contamination of collection container
 - Sample contaminated with barium
 - Specimen received in fixative
 - Specimen received without a label, incorrect and/or incomplete data on label
 - Specimen received without a collection time and date on label

TESTING REQUIREMENTS

Bacteriology

- Aerobic or Anaerobic Cultures- Use aerobic or anaerobic culturettes for wounds/abscesses submit aspirates and body fluids in sterile tubes. See each respective microbiology test in the Laboratory Test Information Guide of this manual for specific information.
- Cerebrospinal Fluid –Submit specimen to laboratory Stat.
 - Microbiology receives tube #2.
 - A direct Gram stain will be performed with every culture.
 - Positive results are reported to the physician immediately.
 - Negative results reported within 72 hours.
 - See respective microbiology test for additional information.
- Environmental Cultures/Sterility cultures- Submit specimen to laboratory in sterile cup or tube. See respective microbiology test for information.
- Ear Culture- Submit swab of exudate on culturette. No direct Gram stain will be performed unless ordered by HCP. See respective microbiology test for information.
- Eye Cultures- Submit swab of exudate on a culturette.
 - Negative results reported within 48 hours.
 - Corneal Cultures- Coordinate with Microbiology Supervisor to obtain microbiology media and slide for direct inoculation.
 - See respective microbiology test for information.
- Gonorrhea (GC) Culture –Submit culturette ASAP. Final report of No Growth after 72 hours incubation. See respective microbiology test for information.
- Nasopharyngeal/Throat Cultures –Submit culturette. Results reported as Normal flora, No growth, Beta Strep Group A, Beta Strep not Gp A, or presumptive Beta Strep Group A. Cultures for Neisseria gonorrhoea available on request.
- Smears/Slide Preps -Stain, Wet Prep, Pinworm, and KOH -See respective microbiology test for information.
 - Microscopic demonstration of gram negative, intra-cellular presumptive diplococci in smears of urethral exudate from males constitute sufficient basis for a diagnosis of Gonorrhoea.
 - Gram Stains for N. gonorrhoea are only performed on urethral specimens from males.
- Stool/Anal Cultures –Collect stool sample in a clean, leak-proof container. Rectal swabs collected via culturettes are acceptable.
 - Collect rectal swabs and submit on Cary-Blair (red-capped) culturette ASAP. If specimen delivery is to be delayed longer than 3 hours, place specimen in enteric transport media.
 - Routine stool cultures will only be performed on outpatients and inpatients who have been hospitalized for 3 days or less.
 - See respective microbiology test for information. Notify Microbiology if N. gonorrhoea is to be ruled out.
- Sputum – Submit early morning specimen in dry sterile container. If no pathogens are identified, reported as Normal Flora. A direct Gram stain is performed to assess suitability on every sputum. If not suitable, the HCP will be notified and another specimen will be requested. See respective microbiology test for information.
- Tissue/Biopsy Cultures – Submit in sterile container. Negative results will be reported in 48-72 hours. See respective microbiology test for information.
- Urethral – Submit urethral (small nasopharyngeal swab) in a culturette ASAP. A direct

Gram stain slide should accompany culturette. Negative results will be reported in 72 hours. See Genital Culture for information.

- Urine Cultures – Collect a clean catch Mid-stream urine in a dry, sterile urine cup. Refrigerate urine if unable to perform culture immediately.
 - Culture and colony counts are done on all urine specimens. Clean catch urines having colony counts of 10^5 /mL (>100,000 col/mL) are considered positive, and are reported as such, with the organism identification and sensitivity. Catheterized urines are reported positive, if counts are 1000 colonies/ml or greater.
 - Regardless of the colony count, routine cultures which demonstrate three or more organisms, are felt to be contaminated, and another clean catch mid-stream specimen should be submitted ASAP. Urines that show diphtheroids, alpha hemolytic streptococci or lactobacilli, will be identified as such, with no further work up, except upon request or repeat of same results on follow-up specimens. See respective microbiology test for additional information.
- Vaginal Cultures – Submit swab of exudate ASAP. See Genital for STD and Vaginal and Perianal Culture Group B Strep (GBS) Screen for GBS test for information.
- Wounds/Abscesses- Submit in two culturettes for culture and Gram stain. Results reported in 48-72 hours.

Mycology Fungi Testing

- Microbiology performs Calcofluor/KOH preps to screen specimens for presence or absence of fungal elements
- Specimens are examined grossly and with microscopic wet mount/ fluorescent KOH for the presence of fungal elements. Cultures for fungal agents may not always be necessary if the diagnosis can be made from microscopic examination of the specimen. Negative cultures are incubated 4-6 weeks before being reported as negative. Interim reports are rendered via CHCS.
- Clinical specimens collected for examination and culture of molds and yeasts may generally be obtained in the same manner as bacterial specimens with the following noted exceptions.
- Aspirated materials, bone marrow, blood, body fluid, bronchi wash, scrapings, and surgically removed tissues are essential, and are far superior to swabs for culture purposes.
- Culturettes must not be used and will be rejected.
- Cerebrospinal fluid: An optimum volume of 5 ml of CSF is essential for culture purposes. Samples less than 5 mL are acceptable but the volume of sample correlates with the sensitivity of the culture.
- Hair, nail clippings, and epidermal scrapings, submit in sterile cup.
- Transport specimens in sterile specimens cups or petri dishes - never in rubber stopper tubes.
- The Specimen Comment section of CHCS and the Clinical Remarks Section of request forms should clearly indicate what mycotic infection is suspected.

Tuberculosis Testing

- HCP and the Community Health Nurse are telephonically notified if positive.
- Negative culture reports are rendered after 8 weeks incubation.

- Identification and drug susceptibility testing are performed only on MTb isolator or specific request by the ID service for all acid-fast organisms isolated;. These take from 3-8 weeks after initial isolation depending on the organism encountered.
- **Safety Note:** Specimens collected by the patient at home must be brought to the laboratory immediately, clearly marked as AFB and double bagged. At no time will TB samples be collected in the MAMC outpatient clinics.

TB Specimen Sources

- Blood and Feces – For mycobacterial analysis
- CSF – Is submitted in sterile screw cap tube. The more fluid submitted for culture, the greater the likelihood of detecting organism
- Smears - A stain for acid-fast bacilli is performed
- Sputum - Collected in sterile cups without preservative at patient’s home or outside facility.
 - Do not collect sputum specimens for TB in MAMC clinics.
 - Collect only early morning specimens before dental care and/or breakfast.
 - 24 hour specimens are not acceptable
 - Early morning specimens on 3 successive days are considered the optimal collection technique.
- Tissue Specimens – Transported in sterile container. Do Not Use Culturettes.

Viral Culture Specimens

- Viral cultures require special viral transport media (VTM) which is available at collection site wards and clinics.
- See the respective microbiology/virology tests in this manual for additional information.
- General viral culture specimen collection
 - Suspected lesions should be swabbed and the swab then placed into special transport media.
 - The tube will be properly labeled and transported to the lab.
 - Specimens should be delivered to the laboratory promptly, ideally within 2 hours of sample collection, but at least within 1 day of collection. Unless indicated differently, specimens should be refrigerated within 1 hour of collection.
 - Order should be placed in CHCS.

Serology Testing

- Mononucleosis
- Rapid Plasma Reagin (RPR) – RPR Titer/VDRL/MHA-ABS
- See each respective microbiology test found in this manual for additional information.

BLOOD CULTURE COLLECTION PROCEDURAL INSTRUCTIONS

General

- All individuals performing blood culture collection must have documentation of competency verification prior to performing the procedure.
- Specimens should be drawn PRIOR to antibiotic therapy, whenever possible
- Blood cultures are not to be drawn from a line except:
 - If the intravascular device is suspected as the cause for a bloodstream infection
 - If BC is obtained from a line, a set should also be obtained from a peripheral site
 - **Never** draw a blood culture from a stopcock

Aseptic Technique

- Poor collection technique can introduce organisms into blood culture bottles.
- Blood culture collection is done under aseptic technique; hand hygiene and glove usage is mandatory.
- Attention should be paid to maintaining sterility of the blood culture bottle tops as well as, preventing recontamination of the venipuncture site.
- Always collect blood cultures first to avoid contamination when other tube specimens are collected at the same site

Collection Procedure

- Gather the required equipment:
 - CHG skin prep (ChloraPrep One-Step skin antiseptic product)
 - **DO NOT** use CHG skin prep on children <2months of age
 - If CHG skin prep is contraindicated use 1% betadine
 - BacT/Alert Aerobic Culture Bottle (Blue cap) & BacT/Alert Anaerobic Culture Bottle (purple cap)
 - Safety domes
 - Vacutainer Brand Safety-Lok Blood Collection Kit
 - 70% Isopropyl Alcohol Pad (one for each blood culture bottle)
- Site Selection:
 - Blood cultures should be drawn in sets, one aerobic bottle and one anaerobic bottle. Sets should be drawn at intervals and from different sites, determined by the clinical circumstances.
 - Blood should be obtained from the peripheral venous system whenever possible.
 - Drawing from an Intravascular line should only be done if peripheral lines are unobtainable or when a catheter-related sepsis is suspected.
 - If a catheter-related sepsis is suspected draw one set of cultures from a peripheral stick and another set other from the suspected line.
- Site Preparation (skin antisepsis):
 - If the patient is visibly dirty, wash the intended site with soap and water *prior* to site preparation
 - ✓ CHG skin prep (ChloraPrep One-Step skin antiseptic). **DO NOT** use ChloraPrep on children <2months of age
 - ✓ Perform hand hygiene and don gloves
 - ✓ Wipe tops of the blood culture bottles with 70% alcohol and allow to air dry
 - ✓ Prep the skin with CHG or Betadine
 - ✓ **DO NOT** palpate the prepped site
- Blood Culture Bottle Preparation
 - Bottom of bottles must be dark gray-green, otherwise DO NOT USE
 - Do not use expired bottle
 - Remove cap just before use; use separate 70% isopropyl alcohol wipes to disinfect each bottle
 - Take precautions not to contaminate the tops after disinfected.
- Collection of the Blood Sample
 - After antiseptic agent dries, aseptically draw the optimal volume through a Safety-Lok Blood Collection Set
 - Specimen Volume:
 - ✓ Infants: 0.5 to 3.0 ml per bottle
 - ✓ Children: 2.0 to 5.0 ml per bottle
 - ✓ Adults: 10 to 12 ml per bottle (so not exceed 12 ml)
 - Use of a syringe is discouraged.
 - ✓ If a syringe is used, a safety device must be used when transferring blood.

- ✓ Expel all air from syringe before transferring blood into the blood culture bottle (Aerobic first)
- Aerobic and Anaerobic cultures are normally both collected from each site

Specimen Labeling Requirements

- When labeling bottle, do not cover any part of the printed barcode or the sensor located in the base of the blood culture bottle.
- Specimen Labeling Requirements
 - Complete Name
 - Date of birth
 - SSN
 - Collection date, time, site
 - Set Number (if set is ordered)
 - Phlebotomist initials

Specimen Transport

- Transport the bottles to the laboratory at room temperature within one hour of collection.

Other

- The HCP or HCP on call, RN will be notified of any positive results.
- All organisms will be identified and sensitivity performed, if applicable.
- Negative reports will be resulted in 5 days
- See each respective microbiology test for additional information, listed in the Laboratory Test Information Guide.

CP COMPONENT – MOLECULAR DIAGNOSTICS

GENERAL INFORMATION

Section Information

- Molecular Diagnostics section performs real-time polymerase chain reaction to identify select human genetic mutations and infectious agents. We are the newest section in the Department of Pathology and our testing capabilities are continuously expanding to meet the demand in the new era of the molecular genetics.
- Molecular Diagnostics Section is found in the Dept of Pathology and located within MAMC, Bldg 9040A. the main room number is G-44-6
- Contact phone numbers: 968-1743 / 968-1724.

MOLECULAR DIAGNOSTICS TESTING AVAILABLE

Testing by Polymerase Chain Reaction (PCR)

- Prothrombin (G20210A or Factor II)
- FVL (Factor V Leiden)
- HSV (herpes simplex virus)
- VZV (varicella-zoster virus)
- CMV (cytomegalovirus)
- ENTV (enteroviruses – including coxsackieviruses and echoviruses)
- Bordetella – includes Bordetella pertussis and Bordetella parapertussis
- Malaria
- Influenza A and B – also subtyping positive influenza A into seasonal influenza H1, seasonal influenza H3, pandemic 2009 H1 (Swine flu), and H5 (Avian flu, which is tested only upon high suspicion.
- Adenoviruses
- Epstein-Barr Virus (ESV)

LABELING REQUIREMENTS

Label Requirements

- Specimens submitted to Molecular Diagnostics Section should include the following data:
 - Patient's first and last name
 - FMP/SSN
 - Clinic or Ward
 - Attending physician's name
 - Date and Time of Specimen Collection
 - Site of infection or anatomic site of collection

Other Required Info

- Any pertinent information that will aid the Molecular Diagnostics Section staff in identification of potential pathogens should be included on the CHCS request and in the comment section.

SPECIMEN COLLECTION AND SUBMISSION

Specimen Collection

- Consult the **Lab Test Information Guide** listing of this manual, CHCS Lab Test Information, Molecular Diagnostics Section and/or Specimen Processing Section for proper methods of specimen collection and handling procedures.
- All specimens should be collected in appropriate sterile container, placed in a clean biohazard bag, properly identified, and delivered to the laboratory without delay.

Prothrombin (G20210A) and Factor V Leiden mutation test

- Requires a EDTA (lavender top) anticoagulated whole blood. Minimum volume is 1.0 mL. Observe proper blood to anticoagulant ratio.
- Heparinated (green top tube) or clotted blood is not acceptable.
- Forward the original Vacutainer tubes promptly at ambient temperature. If there is delay of more than 1 hour, refrigerate (2-8 °C).

Herpes Simplex Virus (HSV), Varicella-Zoster Virus (VZV), Human Cytomegalovirus

(CMV), Human Enterovirus (ENTV) and Epstein-Barr Virus (EBV).

- Multiple types of viral analysis may be possible from a single nucleic acid extraction of the sample.
- CSF or other body fluid: ≥ 0.5 mL minimum in a sterile container.
- Plasma: EDTA (lavender top) anticoagulated blood. Minimum volume is 1.0 mL. Observe proper blood to anticoagulant ratio.
 - Heparinated blood is not acceptable. Heparin is known to be inhibitive to PCR.
 - Separate the plasma by centrifuging the blood at $1500 \times g$ (3000 rpm) for 10 min.
 - Label the plasma tube with the patient identification as well as the anticoagulant used.
- Swab samples in viral transport medium: Obtain sample from a lesion using either Decron, polyester, or flocked swab.
 - Do not use Calgi (calcium alginate) swabs or cotton swabs with wood staff. These are known to be inhibitive to PCR.
 - Place the swab in a viral transport medium and break or cut the staff. Close the lid well and make sure the specimen does not leak.
 - Label with the patient ID and the specimen source.
 - BAL or tracheal aspirate: Place 0.5-1.0 mL sample in to a viral transport medium.
- Transport at ambient temperature promptly after specimen collection
 - Samples that will take more than 1 hour to transport should be transported in refrigerated condition.
 - Freeze at $\leq -15^{\circ}\text{C}$ (except for ENTV which should be frozen at $\leq -70^{\circ}\text{C}$) if DNA isolation will be delayed for more than 3 days.
 - All frozen samples should be transported on dry ice and should not be allowed to thaw out.

Bordetella (pertussis) spp.

- Nasopharyngeal swab without viral transport medium: Use Flocked or polyester nasopharyngeal swabs.
 - Two swabs preferred.
 - Insert the swabs in a suitable sterile container.
 - For MAMC, obtain a pertussis PCR specimen transport kits from the Microbiology Laboratory that contains two swabs and an instruction sheet.
 - **Do not use Calgi swabs or wood staffed cotton** swabs as they are inhibitive for PCR.
- Nasal wash, BAL, or tracheal aspirate sample: Add 0.5-1.0 mL of the sample into a viral transport medium.
- Transport at ambient temperature promptly after specimen collection
 - Samples that will take more than 1 hour to transport should be transported in refrigerated condition.
 - Freeze at $\leq -15^{\circ}\text{C}$ if DNA isolation will be delayed for more than 3 days.
 - All frozen samples should be transported on dry ice and should never be allowed to thaw out.

Malaria

- Whole blood with EDTA anticoagulation. Minimum 1.0 mL. Observe proper anticoagulant ratio to the blood.
 - It is recommended to make thick and thin smears within 2 hours of specimen receipt.
 - If thick and thin blood smears are necessary, make the smears before placing the sample in the refrigerator. Refrigeration alters the morphology of the malaria parasite.
- Transport at ambient temperature promptly after specimen collection.
- If shipping the blood sample from a distant site, include the thick and thin smears along with the specimen and ship them in refrigerated condition.

Influenza

- Nasopharyngeal or throat swab sample:
 - Use flocced or Dacron swabs and insert the swabs into a Viral Transport Medium.
 - **Do not use Calgi swabs or wood staffed cotton swabs** as these are inhibitive for PCR.
- Nasal wash, tracheal aspirate, or BAL sample. Add 0.5-1.0 mL into a Viral Transport Medium.
- Transport at ambient temperature immediately after specimen collection.
 - Samples that will take more than an hour but less than 3 days to transport should be transported in a refrigerated condition. Store at 2-8°C.
 - If transport to the testing site is to take more than 3 days, freeze the sample in -70 °C and transport in dry ice.

SPECIMEN REJECTION

General Rejection Guidelines

- Specimens which have not been properly collected or transported will be subject to rejection. Irretrievable specimens will be judged on an individual basis and the specimen will be salvaged whenever possible. The HCP will be contacted to help resolve the deficiency or to explain the rejection. Reasons include:
 - Blood specimen collected using heparin as the anticoagulant
 - Calgi (calcium alginate) swabs or swabs containing wood or cotton.
 - Duplicate specimens in a 24-hour period
 - Inadequate volume
 - Inappropriate specimen for a given test
 - Leaking specimen or gross external contamination of collection container
 - Specimen received without a label, incorrect and/or incomplete data on label
 - Specimen received without a collection time and date on label

**SPECIAL
TESTING
REQUIREMENTS**

Factor V Leiden (FVL)

- FVL is tested only when:
 - APC-R screening is positive
 - Unable to screen for APC-R.
 - All specimens positive APC-R will be automatically ordered and tested for FVL.

Cytomegalovirus (CMV)

- CMV PCR test is qualitative only.
 - Negative qualitative CMV PCR – report negative. No further action.
 - Positive for CMV PCR - consult the healthcare provider ASAP to enquire if the specimen should be shipped out for quantitative PCR assay.

Herpes Simplex virus

- All positive HSV samples will be typed to either HSV type 1 or type 2.

Malaria

- All Positive Malaria tests will be speciated and confirmed using stained blood smear.

Influenza

- Influenza A, B, and influenza A subtyping
 - All culture positive influenza A specimens will be subtyped for seasonal H1, seasonal H3, and 2009 swine-like H1.
 - Direct influenza RT-PCR is performed only if there is authorization from the director of Microbiology (253 968-1925) or from the Chief of Infectious Diseases (pager 253 552-0474).
 - Influenza B RT-PCR result will be reported only when the influenza RT-PCR is performed directly from the specimen.
 - H5N1 subtyping will be performed only if there is authorization from the director of Microbiology (253 968-1925) or from the Chief of Infectious Diseases (pager 253 552-0474).

Bordetella PCR

- Tests for both Bordetella pertussis and Bordetella parapertussis.
All positive B. pertussis results are reported to the MAMC Preventive Medicine Clinic and the Pierce County Communicable Diseases Control (253 798-6410).

CP COMPONENT– TRANSFUSION SERVICE

GENERAL INFORMATION

Contact Information

- The role of the Transfusion Service is to provide safe, quality, compatible blood products in support of MAMC patient transfusion needs, 24 hours a day, 7 days a week. TS is located in the Department of Pathology, building 9040, G-38-03.
- Issues regarding Transfusion Service may be addressed to the Medical Director at 968-1714 or Civilian Supervisor at 968-3691.

ASBBC-PNW Donor Center

- The Armed Services Blood Bank Center Pacific Northwest (ASBBC-PNW) Donor Center (Only military blood donor center in the Pacific Northwest) is a standalone, tri-service Donor Center. It is a separate facility/organization from the MAMC Transfusion Service. Operational role is to collect and manufacture blood products for utilization by MAMC as well as for other military hospitals in this region and for operations overseas.
- The Blood Donor Center is located at Old Madigan next to the Madigan Café. Street address is 9904 E. Johnson Street. Operational hours: Monday thru Friday normal duty hours.
- Contact Chief of the Blood Bank ASBBC-PNW: (253) 968-1840.
- Special requests/procedures or blood products require direct consultation with the Medical Director or Chief of the Blood Bank. Products and/or services may be limited in quantities, have relatively short shelf life, or require mobilization of donors and/or specialized technical personnel, therefore require consultation prior to approval or release.
- Donations can be scheduled by calling 968-1850/1903, or by making an appointment online at Armed Services Blood Program website:
http://www.militaryblood.dod.mil/donors/where_to_give.aspx

Regulating Policies

- Policies governing Transfusion Service and ASBBC-PNW operations are available in "MAMC Memo 40-46, Blood Transfusions and Transfusion Reactions" and "Ft. Lewis Regulation 40-38, Command Blood Program".

It is critical that MAMC staff become familiar with these publications in order to ensure effective and efficient use of available Transfusion Service and ASBBC-PNW resources.

TEST ORDERING

Ordering Priorities

- **"STAT"** orders are for situations where the patient is in urgent need of blood and/or components. **"STAT" turn-around time (TAT) for crossmatched red blood cells (RBC) is not to exceed 60 minutes regardless of outcome (from the time the specimen is acknowledged in the Transfusion Service), provided there are no serological difficulties.** See: Clinical Factors That May Delay Issue of Products found later in this chapter.

Note: Previously submitted non-STAT T&S blood requests are converted to "STAT" after a subsequent need for blood develops.

- **"ASAP"** orders are for situations where blood is needed within two hours. **"ASAP" turn-around blood product availability is not to exceed two hours (from the time the specimen is acknowledged in the Transfusion Service), provided there are no serological difficulties.**
- **"ROUTINE"** orders are for situations requiring other than "STAT" or "ASAP". Routine TAT for availability of products is up to eight hours. Preoperative requests are normally prepared by the day before surgery.

CHCS Order Entry

- For CHCS "Lab Test Information" and ordering options, follow screen prompts, menu choices and "Online User's Manual" (OLUM) provided within the Composite Health Care System.

AVAILABLE TESTING

- **Type and Screen:** An ABO Grouping, Rh Type, and an Antibody Screen are performed, but no specific units are reserved for the patient. Paperwork and specimen will be held for seventy-two (72) hours from the time of collection. The order may be converted within this period of time to a Type and Crossmatch upon the physician's request.
- **Type and Crossmatch:** In addition to an ABO/RH and antibody screen, compatibility tests between recipient and donor blood are performed. Crossmatched units will be ready for transfusion and will be held for up to three days if the patient is not being transfused. If being transfused, blood will be held for no more than 2 days. One SF 518 is required for each unit requested.
- **Rho (D) Immune Globulin (RHIG):** An ABO/Rh and an antibody screen are performed to verify that recipient is Rh Negative and a candidate to receive RHIG in order to prevent D antigen sensitization.
- **Indirect Coomb's Test [Indirect Antiglobulin Test (IAT)]:** This is a test to detect irregular antibodies in the patient's serum against red cell antigens. Submit a Pink-Top tube. If the test is positive, antibody identification will be made.
- **Antibody Titer:** Used to quantify the amount of antibody present. Useful in OB patients with clinically significant antibodies. Requires a Pink-Top tube
- **Prenatal Work-up:** ABO, Rh, antibody screen (Indirect Coomb's Test). Submit a Pink-Top tube. See: Prenatal Screen (MAMC Only) in CHCS and Laboratory Information Guide of this manual.
- **Direct Coomb's Test [Direct Antiglobulin Test (DAT)]:** This test is a test for in vivo antibody and/or complement (IgG and/or C3) coating of the surface of the patient's cells. Submit Pink-Top tube.
- **Fetal Screen:** Used to screen for the presence of Rh (D) positive cells in an Rh negative mother's circulation as a result of a fetal maternal bleed. Submit Pink-Top tube drawn AFTER delivery and preferably within 24 hours.
- **Cord Blood Testing:** ABORh and Direct coomb's Test (DAT) are performed on cord bloods from the babies of inpatient Rh Negative and Group O mothers. Submit Pink-Top tube. Not a panel; ABORh and DAT are ordered separately in CHCS. CORD BLOOD is selected as the collection sample.
- **Antigen Testing:** Routinely ordered on partners of pregnant women who have clinically significant antibodies. Submit Pink-Top tube.

INFORMATION AND LABELING REQUIREMENTS

Form Requirements

- All requests for blood products MUST have a SF 518 (Blood or Blood Component Transfusion) for each unit of blood requested and contain the following information:
 - Component requested
 - Date requested.
 - Date and hour blood product is required.
 - Known antibody formation/transfusion reaction.
 - Requesting physician.
 - Diagnosis or operative procedure.
 - Verifier's signature
 - Date and Time of Specimen Collection.
- Type of Request- Must be checked if RBC's are requested. One or the other; not both:

- T&S: No products required at this time
- Crossmatch: Units required
- The required signature on the SF 518 is that of the phlebotomist, not the verifier. Even though the block does say "verifier", it is in fact the phlebotomist that must sign on that line.

Specimen Container Labeling Requirements

- Must use the Blood Recipient's ID wristband identification band. Labels must be hand written with indelible ink. Label from wrist band is used as specimen label.
- Specimen needs verifiers initials (Does not have to be full signature of phlebotomist; Can be signature or initials)
- All specimens submitted for testing will be labeled with the following information:
- Patients' Full Name
- Family Member Prefix and Complete SSN
- Full Signature of phlebotomist
- Only Date is required on the specimen tube label but Time must be on SF 518

SPECIMEN REJECTION

- Patient identification error(s) on either the specimen label or the SF 518 will result in the specimen being confiscated. A new properly labeled specimen and paperwork will then be required.

PROCESSING BLOOD PRODUCT REQUESTS

Specimen Submission

- Specimens must be taken directly to the Transfusion Service and personally handed to a technologist or technician working in the Transfusion Service.
- The technologist/technician will examine the specimen and request form SF 518 for suitability before accepting or rejecting the specimen.

STAT Processing

- STAT requests are processed in the order they are received in the Transfusion Service.
 - Requests which are ordered STAT, but should have been ASAP or ROUTINE, adversely affect the provision of blood to patients that are seriously ill.
 - Blood requests ordered STAT from the OR will be handled ahead of other STAT requests.
 - In addition, if a ward or healthcare provider notifies the section by phone or in person that products ordered STAT on a specific patient are needed emergently; those requests will be handled ahead of other STAT requests.

Other Processing

- Frozen products (FFP and Cryoprecipitate) that need to be thawed normally take 25-30 minutes to prepare.
 - If platelets are available and indicated, they can be provided readily within 15 minutes.
 - In urgent situations, uncrossmatched group O RBC products can normally be provided within 5 minutes, while partially crossmatched, ABO and Rh specific RBCs can be provided within 15 minutes.
 - The requesting physician's signature must be obtained as soon as possible after the crisis

**CLINICAL
FACTORS THAT
MAY DELAY
ISSUE OF
PRODUCTS**

Clinically Significant Antibodies

- If there is a clinically significant antibody interfering with RBC compatibility testing, then there may be a delay of hours to days, depending on the nature of the antibody and the percentage of compatible blood. In this situation RBCs are normally screened for the corresponding antigen.
 - If 90% of donor units are compatible, the delay may be 1-2 hours.
 - If 25% of donor units will match, then the delay will be longer: 3-4 hours.
 - If there is a warm autoantibody present, the initial workup and provision of blood can take 8-24 hours. (In this case it will probably not be possible to provide "compatible" blood, and the next best solution is to provide blood that matches the patient's own phenotype.
 - The patient's physician will need to sign for antigen-typed incompatible blood.
 - If the antibody is against a high frequency antigen and the chance of compatibility is <1%, then it will be necessary to work through Puget Sound Blood Center so that rare liquid or frozen compatible units can be located and provided. This could take several days. If the urgency of the patient's situation is such that blood is needed sooner, then it may be necessary to provide incompatible RBCs. In those cases the patient's physician will be required to sign for incompatible blood before it will be issued to the ward.
- Because of the risk of delays due to significant antibodies, it is preferable to order blood for scheduled surgeries ahead of time rather than the morning of the procedure. If the patient does not have a history of transfusion or pregnancy within the last 90 days, he/she can be drawn up to 8 days prior in the Surgical Services Center (SSC). If there is a recent transfusion or pregnancy, the patient can still be drawn up to three days prior. Antibodies detected the morning of the surgery can mean the delay or cancellation of the procedure if compatible blood cannot be quickly provided.

Special Products

- Patients that require special products (leukodepleted/filtered, irradiated, CMV negative) need to meet the guidelines that were established by the MAMC Blood Utilization Committee and that are outlined in "MAMC Memorandum 40-46, Blood Transfusions and Transfusion Reactions". Refer to the "Special Blood Products Available" section of that Memorandum. Assuming those criteria are met, both leukodepleted and irradiated products are normally readily available.
- MAMC leukodepleted products serve as an alternative to CMV seronegative components. CMV antibody testing is no longer performed on MAMC blood products. Also, CMV seronegative products are not purchased from outside sources except in certain instances of neonatal transfusion; i.e., most routine RBC neonatal transfusions, as well as RBCs for exchange and intrauterine transfusions.
- Almost all apheresis platelets are now filtered at time of collection. For RBCs a bedside filter is routinely provided unless the product was leukodepleted at the manufacturer's site.
- The MAMC Transfusion Service has its own blood irradiator, so irradiated products are easily provided. However, if the irradiator is out of service, then it is necessary to contact Radiation Therapy.
- A tech is always on call for after duty hours. Because of travel time, delays can be anticipated and it may take 1-2 hours to provide irradiated products under those circumstances

ISSUING BLOOD AND BLOOD PRODUCTS**Dispensing and Return**

- Surgery personnel will pick up crossmatched units for surgery cases by 0730 hours on regularly scheduled duty days.
- Blood Bank Messenger Slip and Receipt (MAMC Form 159-L) is needed to pick up blood products.
- The Transfusion Service will pick up unused blood for completed cases from the OR Holding Area by 1700. Transfusion Service personnel will also pick up any blood remaining in the OR Holding Area for an after-hour surgery procedure.
- Transfusion Service personnel DO NOT deliver blood products for surgery cases or to the wards.
- Blood products must be returned to TS within 30 minutes if unused, unless issued in a cooler. The exception is the OR where a blood refrigerator is maintained.

Trauma Situations

- In trauma situations, a Transfusion Service technician serves as part of the Trauma Team and will bring the first four uncrossmatched units to the Emergency Department. After the initial four units, the responsible department (ER, OR) will pick up any other requested products.
- Further details for managing trauma patients are outlined in MAMC Memorandum 40-46 (Blood Transfusion and Transfusion Reactions).

EMERGENCY RELEASE OF PACKED RED BLOOD CELLS**Requirements**

- Two to four units of uncrossmatched group O RBC's are issued for patients when there is insufficient time to perform ABO and Rh testing or an antibody screen.
- A waiver of responsibility is required (The release form can be signed after the fact by the responsible physician).
- The Transfusion Service will determine the ABO and Rh as soon as possible after receiving a suitable specimen and will begin issuing ABO/Rh compatible blood after the initial group O units have been used.
- Any discrepancies will be reported to the physician and the pathologist immediately.
- If more blood is required before a specimen is received and typed, O Positive blood will be issued unless the patient is a pre-menopausal woman. In that case, O Negative blood (up to 8 units) will be issued depending on the available inventory.

TRANSFUSION REACTIONS

- Refer to MAMC Memorandum 40-46 Blood Transfusion and Transfusion Reactions for information.
- Notify the attending physician or house staff officer and then notify the Transfusion Service at 968-1722.
- Initiate a copy of the Workup of Suspected Transfusion Reaction (MAMC OP 1097-L) and complete Parts 1,2 and 3. Note: The attending physician or house staff officer should fill out Part 2.
- Submit the following completed forms and specimens to the Transfusion Service as soon as possible:
 - MAMC OP 1097-L
 - SF 518
 - One Pink-Top tube

- First voided Urine sample
- Unused portion of Blood with the associated IV tubing and fluids

THERAPEUTIC PHLEBOTOMIES

- Therapeutic phlebotomies are performed only when prescribed by the patient’s physician and are by appointment only and done by ASBBC-PNW. The physician’s request must specify the amount of blood to be drawn, the medical condition or diagnosis of the patient, the frequency, and the limitations of the phlebotomy.
- Contact the ASBBC-PNW Donor Center at (253) 968-1840 for scheduling an appointment.

BONE AND TISSUE

- The Transfusion Service stores and issues bone and tissue allographs. For specific information refer to MAMC Memorandum 40-77 Procedures to Acquire, Receive, Store and Issue Tissue(s).

SECTION IX - AREA LABORATORY SERVICES - HEALTH CLINICS (McChord, Okubo, Puyallup CBMHL, South Sound CBMHL and Winder)

HOURS OF OPERATION & CONTACT INFORMATION

- Clinic Laboratory Hours: Monday through Friday, closed Federal Holidays. Contact individual clinics for training holiday hours and other scheduled closures.

CLINIC	PHLEBOTOMY	LAB HOURS	LOCATION	PHONE
MCCHORD	0730-1630	0730-1630	690 A Street McChord	968-2073
OKUBO	0630-1545	0630-1630	11582 17 TH & C Str N. Ft Lewis	966-7636
PUYALLUP CBMHL	0830-1700	0830-1700	10507 E. 156 TH STR Suite 112, Sunrise Village Center, Puyallup	447-5087
SOUTH SOUND CBMHL	0830-1700	0830-1700	Opening Soon!	
WINDER	0700-1545	0700-1530	Bldg 9119 Ft Lewis	966-9945

CLINIC LAB TESTING CAPABILITIES

Moderate Complexity Testing

- Clinics can only perform Moderate Complexity Testing, therefore their testing is limited.
- Testing is requested through the CHCS system or by submitting the appropriate Laboratory Request Forms. Tests requested via request form will be ordered and results entered into the CHCS system by laboratory staff.
- Additional testing is available to the clinics via transporting specimen(s) to the MAMC laboratory for testing, providing no special collection and/or handling is required. Otherwise the patient will be directed to MAMC laboratory for specimen collection and testing.

Clinic “In-house” Testing Capabilities – Listed by Testing Section:

Chemistry	CBMHL	McChord	Okubo	Winder
β-HCG, Qualitative (Urine)	●	●	●	●
β-HCG, Qualitative (Serum)	●	●	●	●
Basic Metabolic Panel (BMP) (Vitros® 250)		●		
Basic Metabolic Panel (BMP) (i-STAT 1)	●		●	●
Chem 7 Panel (Vitros® 250)		●		
Chemistry testing (Vitros® 250)- Albumin, Alk Phos ALT, Amylase, Anion GAP, AST, BUN, Ca, Calc Cholesterol, Cl, CO2, Creatinine, Glucose, HDL, LDL, Osmolality, Potassium, Sodium, T Protein, T. Bilirubin, Triglycerides, Uric Acid		●		
Comprehensive Metabolic Panel (CMP) (Vitros® 250)		●		
Glucose (Novabio Medical® StatStrip)	●		●	●

Liver Panel (Vitros® 250)		•		
Lipid Panel (Vitros® 250)		•		
Hematology				
CBC (BeckmanCoulter® Act Diff)	•		•	•
CBC (BeckmanCoulter® Act 5 Diff)		•		
CBC (Beckman Coulter® Act Diff 10)			•	
Erythrocyte Sedimentation Rate (ESR)	•	•	•	•
Post-Vasectomy Semen Analysis		•		
Urinalysis				
Urinalysis	•	•	•	•
Urine Microscopic (Manual)	•	•	•	•
Microbiology				
KOH (Provider Performed Microscopy)		•	•	•
KOH (Lab Performed Microscopy)	•	•		
Occult Blood	•	•	•	•
Pinworm		•		
Rapid Flu A&B	•	•	•	•
Rapid RSV	•	•	•	•
Rapid Strep A	•	•	•	•
Wet Prep (Lab Performed Microscopy)		•		
Wet Prep (Provider Performed Microscopy)		•	•	•
Serology				
Monospot	•	•	•	•
RPR		•		

RESULT REPORTING

Lab Result Reporting

- All tests are resulted through the CHCS system. During times when the CHCS system is inoperative results may be reported using the test request forms.
- Results will be entered into the CHCS system as soon as the system is operative.

Notification Requirement

- Critical results will be called to the requesting health care provider and the notification information will be recorded in the CHCS system by clinic laboratory staff.
- A read-back of results by the receiving individual is required to confirm reception of results.

CLINIC TESTING PRIORITIES

STAT

- STAT testing is **Not** available for clinic testing.

ASAP & Routine

- Both ASAP and Routine ordering priorities are available for clinic testing.

COURIER SERVICE

Specimen Transport

- Courier provides transport of laboratory samples from Outlying clinics to Main MAMC Laboratory daily.

SECTION X - LABORATORY TEST INFORMATION GUIDE

GENERAL

Content Provided Within Guide: Includes MAMC "In-House" tests as well as frequently

INFORMATION

performed tests done by Quest Diagnostics and other testing labs for the Madigan Healthcare System. It would not be practical to attempt to list all commercial testing available and therefore only frequently requested send-out test are listed. Contact this lab, Quest Diagnostics, and/or other testing labs for tests and information not found within this guide.

- In this document you will find alphabetically listed laboratory tests presented in a standardized format with respective protocol information. It includes all MAMC preformed "In-house" tests and all frequently ordered Commercial Send-out tests.
- This guide is by no means a representation of all tests available for commercial send-out testing. For additional information refer to a current [Quest Diagnostics Directory of Services](#) catalog or go online at: <http://www.questdiagnostics.com/hcp/connect/physician.html>

CHCS Lab Test Information

- MAMC Test information may also be found in CHCS under "Lab Test Information" (LTI).

USING THE LABORATORY TEST INFORMATION GUIDE: PART 1

Laboratory Test Information Provided

- **Test Name** – The CHCS test name by which the test may be found in CHCS.
 - If the test is a panel (comprised of multiple test components), the "P" symbol will be displayed after the name in this guide. This symbol can be found displayed with "in-house" tests as well as combined with other symbols for send-out tests.
 - The majority of Send-out testing is done at Quest Diagnostics. If test is a Quest Diagnostics test, the "Q" symbol will be displayed.
 - Other symbols displayed that make up the remaining total send-out labs used by MAMC:
 - **CH** - Children's Hospital
 - **UW** - University of Washington
 - **G** - Genzyme
 - **TG** - Tacoma General
 - **SG** - Signature Genomic
 - **Q** - "Other" could indicate any of the following: AFIOH, Athena, BAMC, HIV Diagnostics, Keesler AFB, National Medical Services, Oregon State Public Health Laboratory, St. Josephs, USACHPPM, Washington State Public Lab or others. The exact testing location will be provided in the administrative text for that respective test.

Note: Send-out tests are orderable in CHCS either under the same Quest name or under another similar name. For tests not found in CHCS, the test must be ordered under test name: **Miscellaneous Shipping**. It is imperative that the name of the test being requested is entered at the prompt to "Enter comment for Miscellaneous Referral Test". Otherwise the test and samples cannot be collected and processed.

- **Synonyms** – Alternate names by which a test may be known by but more used to find/search for a test within CHCS. Common synonyms also appear in the Alphabetical/Cross-Reference Index for convenience in locating a test by an alternative name that is not necessarily listed by that name within CHCS.
- **CHCS IEN** – Internal Entry Number specific to that respective test; used in Composite Healthcare System as an identifier for all tests available in CHCS.
- **Test Code** – Indicates that test is shipped and performed at Quest Diagnostics. This test

code is displayed for ease of locating and identifying a specific test in the Quest catalog and/or Quest website.

- **Components** – A listings of all tests included in a panel. Panel Component tests may include: orderable tests and/or non-orderable tests, confirmatory tests, calculated tests and/or even other panels.
- **Container** - Type of container or Color-coded container (includes appropriate preservative, anticoagulant, or other medium) into which specimens are to drawn, stored and/or transported. May also list alternate container types.
- **Specimen & Volume Required** – The specific preferred specimen type and alternate specimen type required. Provide volume and minimum volume of specimen material collected to perform a particular test.
- **Instructions** – Provides Patient Preparation, Collection Procedures, Specimen Processing and Transportation / Storage Temperature
- **Rejection Criteria** – Critical factors that impact specimen integrity and/or accuracy of test results therefore causing rejection of specimen.
- **Administrative Notes:** Provides the following:
 - Testing location and Methodology
 - Ordering methods and forms required
 - Test availability- Average time interval that normally takes for a specific test procedure to be completed based on factors such as: processing time, available ordering priority for that test, batch testing frequency, location of testing and methodology used, growth of organisms, shipping time, confirmatory testing and any other factors affecting testing.
- Turn-around Time (TAT)- The approximate time for the test procedure to be completed and results reported and/or entered in the patient’s electronic record.
- **Interpretive** –Any MAMC established reference ranges, Panic Values, Critical Values ranges will be displayed here. Please reference test reference ranges, panic values and critical values provided simultaneously with test results given and maintained in the patient’s electronic record (CHCS). A Clinical Significance is also given here in varying degrees. Please note that the Clinical Significance provided here should by no means be the only source of medical diagnostic information that the HCP utilizes for ordering a test, interpretation of test results and subsequent treatment of the patient.

**LABORATORY
TEST
INFORMATION
GUIDE**

See companion document entitled:
LABORATORY TEST INFORMATION GUIDE

APPENDIX A-1, CLINICAL LABORATORY REQUEST FORMS
MAMC FORM 1787-L, JAN 12 (CLINICAL LABORATORY TEST PROCEDURE REQUEST)

CLINICAL LABORATORY TEST PROCEDURE REQUEST <small>(For use of this form, see the Madigan Contingency Operations Manual, the proponent agency is Department of Pathology.) (SEE REVERSE FOR ADDITIONAL INSTRUCTIONS)</small>			
PATIENT INFORMATION			
PATIENT NAME (LAST, FIRST, MI)	GENDER <input type="checkbox"/> M <input type="checkbox"/> F	DATE OF BIRTH (DD/MM/YYYY)	FMP / SOCIAL SECURITY #
REQUESTING PHYSICIAN NAME (LAST, FIRST)	PHONE # / FAX # / PAGER #	WARD / CLINIC	
COLLECTION DATE / TIME	SPECIMEN SOURCE (REQUIRED *)	REQUESTED TESTING URGENCY <input type="checkbox"/> ROUTINE 12-24 HRS <input type="checkbox"/> ASAP ≤ 2 HRS <input type="checkbox"/> STAT ≤ 1 HR	
TEST REQUESTED			
CHEMISTRY PANELS <input type="radio"/> BASIC METABOLIC (BMP) <small>ANION GAP W/K+, BUN/CREATININE RATIO, CHLORIDE, CO₂, CREATININE, GFR (CALCULATED), GLUCOSE, OSMOLALITY (CALC), POTASSIUM, SODIUM AND UREA NITROGEN.</small> <input type="radio"/> BILIRUBIN-NEONATAL <small>BILIRUBIN CONJUGATED (DIRECT), BILIRUBIN UNCONJUGATED & NBIL</small> <input type="radio"/> COMP METABOLIC (CMP) <small>INCLUDES BMP AND HFP, CALCIUM AND PHOSPHORUS DOES NOT INCLUDE BILIRUBIN, CONJUGATED (DIRECT)</small> <input type="radio"/> ELECTROLYTE <input type="radio"/> HEPATIC FUNCTION (HFP) <small>ALBUMIN, TOTAL PROTEIN, ALK PHOS, AST, ALT, BILIRUBIN CONJUGATED (DIRECT) AND BILIRUBIN TOTAL</small> <input type="radio"/> IRON PANEL <small>IRON, TIBC, TRANSFERRIN SAT(C)</small> <input type="radio"/> LIPID PANEL <input type="radio"/> OB PANEL <small>ALBUMIN, ALK PHOS, AST, AVG RATIO, BILIRUBIN TOTAL, CREATININE, LDH, PROTEIN TOTAL, UREA NITROGEN AND URIC ACID</small> <input type="radio"/> RENAL PANEL (RFP) <small>INCLUDES BMP, ALB AND PHOS</small> DRUGS / TOXICOLOGY <small>INDICATE PEAK THROUGH OR RANDOM, IF APPLICABLE</small> <input type="radio"/> ACETAMINOPHEN <input type="radio"/> CARBAMAZEPINE <input type="radio"/> DIGOXIN <input type="radio"/> DRUG SCREEN (URINE) <input type="radio"/> ETOH <input type="radio"/> GENTAMICIN <input type="radio"/> LITHIUM <input type="radio"/> PHENYTOIN <input type="radio"/> SALICYLATES <input type="radio"/> VANCOMYCIN CEREBROSPINAL FLUID (CSF) * <input type="radio"/> CELL COUNT AND DIFFERENTIAL (HEMATOLOGY) <input type="radio"/> CRYPTOCOCCUS AG (MICRO) <input type="radio"/> CSF CULTURE (MICROBIOLOGY) <input type="radio"/> CSF LATEX (MICROBIOLOGY) <input type="radio"/> GLUCOSE PROTEIN (SPEC CHEM) <input type="radio"/> VDRL (CSF) (MICROBIOLOGY)	CHEMISTRY <input type="radio"/> AMMONIA <input type="radio"/> AMYLASE <input type="radio"/> BILIRUBIN (TBIL) <input type="radio"/> CHOLESTEROL <input type="radio"/> CREATININE KINASE (CK) <input type="radio"/> CREATININE KINASE-MB <input type="radio"/> CRP <input type="radio"/> FERRITIN <input type="radio"/> GGT <input type="radio"/> GLUCOSE <input type="radio"/> HCG, QUANT (SERUM) <input type="radio"/> IRON <input type="radio"/> KETONES <input type="radio"/> LACTATE <input type="radio"/> LDH <input type="radio"/> LIPASE <input type="radio"/> MAGNESIUM <input type="radio"/> PHOSPHORUS <input type="radio"/> POTASSIUM <input type="radio"/> PROTEIN (TOTAL) <input type="radio"/> PTH-INTACT <input type="radio"/> TRIGLYCERIDES <input type="radio"/> TROPONIN-I <input type="radio"/> TSH, SENSITIVE <input type="radio"/> URIC ACID SPECIAL CHEMISTRY * <input type="radio"/> 24-HR URINE CALCIUM <input type="radio"/> 24-HR URINE PHOSPHORUS <input type="radio"/> 24-HR URINE TOTAL PROTEIN <input type="radio"/> 24-HR URINE URIC ACID <input type="radio"/> FETAL FIBRINECTIN <input type="radio"/> FETAL LUNG MATURITY <input type="radio"/> GLUCOSE (BODY FLUID) * <input type="radio"/> GLUCOSE/PROTEIN (CSF) <input type="radio"/> PROTEIN (BODY FLUID) * <input type="radio"/> SPOT URINE PROT/CREAT PROT, CREAT W/RATIO BLOOD GAS <input type="radio"/> BLOOD GAS, ARTERIAL * <input type="radio"/> BLOOD GAS, VENOUS * <input type="radio"/> CO-OXIMETRY <input type="radio"/> IONIZED CALCIUM ANATOMIC PATHOLOGY DO NOT USE THIS FORM FOR CYTOLOGICAL OR SURGICAL TISSUE EXAM REQUESTS	URINE, RANDOM <input type="radio"/> DRUG SCREEN (URINE) TOX <input type="radio"/> HCG, QUAL (HEMATOLOGY) <input type="radio"/> PROTEIN (CHEMISTRY) <input type="radio"/> SPOT URINE PROT/CREAT <input type="radio"/> URINALYSIS (HEMATOLOGY) <input type="radio"/> URINE CULTURE (MICRO) HEMATOLOGY * <input type="radio"/> BODY FLUID CELL COUNT AND DIFFERENTIAL <input type="radio"/> CBC WITH DIFFERENTIAL <input type="radio"/> CRYSTAL EXAM (SYNOVIAL FLUID) <input type="radio"/> ERYTHOCYTE SED RATE (ESR) <input type="radio"/> G-6-PD <input type="radio"/> HGB, QUAL (URINE) <input type="radio"/> HGB AND HCT <input type="radio"/> KLEIHAEUER TEST <input type="radio"/> RETICULOCYTES <input type="radio"/> SEMEN ANALYSIS <input type="radio"/> SICKLE CELL SCREEN <input type="radio"/> SPERM COUNT, POST VAS <input type="radio"/> URINALYSIS COAGULATION <input type="radio"/> D-DIMER <input type="radio"/> FIBRINOGEN <input type="radio"/> LOW MOLEC WEIGHT HEPARIN <input type="radio"/> PT (PROTHROMBIN / INR) <input type="radio"/> PTT (APTT) BLOOD BANK <input type="radio"/> ABO / RH GROUP <input type="radio"/> ANTIBODY ID <input type="radio"/> ANTIBODY SCREEN <input type="radio"/> CORD BLOOD <input type="radio"/> DAT <input type="radio"/> FETAL CELL SCREEN <input type="radio"/> PRENATAL SCREEN <input type="radio"/> RHOGAM (RH IG)	MICROBIOLOGY * <input type="radio"/> AEROBIC C&S <input type="radio"/> AFB CULTURE W/SMEAR <input type="radio"/> ANAEROBIC C&S <input type="radio"/> BLOOD CULTURE <input type="radio"/> C-DIFF <input type="radio"/> CT/GC <input type="radio"/> FECAL LEUKOCYTES <input type="radio"/> FUNGAL CULTURE <input type="radio"/> GBS SCREEN <input type="radio"/> GC CULTURE <input type="radio"/> GRAM STAIN <input type="radio"/> HERPES SIMPLEX CULTURE <input type="radio"/> KOH PREP / WET PREP <input type="radio"/> LOWER RESP CULTURE <input type="radio"/> MACROSCOPIC STOOL EXAM <input type="radio"/> MALARIA PANEL <input type="radio"/> MONO <input type="radio"/> MRSA CULTURE <input type="radio"/> OCCULT BLOOD <input type="radio"/> OVA AND PARASITE <input type="radio"/> PIN WORM PREP <input type="radio"/> RAPID FLU <input type="radio"/> RAPID STREP A <input type="radio"/> REDUCING SUBSTANCES-STOOL <input type="radio"/> RESP VIRUS CULTURE <input type="radio"/> RPR <input type="radio"/> RSV <input type="radio"/> STOOL CULTURE <input type="radio"/> THROAT CULTURE <input type="radio"/> UPPER RESP CULTURE <input type="radio"/> URINE CULTURE <input type="radio"/> VIRAL CULTURE (BODY FLD/TISSUE) OTHER TESTS ** <input type="radio"/> _____ <input type="radio"/> _____ <input type="radio"/> _____ <input type="radio"/> _____
ORDER COMMENTS			
<small>* Use one form per specimen source (blood and urine specimens may be combined on one form). Indicate both source and site for applicable Micro specimens. ** Commercially performed tests may require additional forms and approvals.</small>			
LAB USE ONLY			
TEMPORARY ACCESSION ID: _____			

APPENDIX A-1 CLINICAL LABORATORY REQUEST FORMS

MAMC FORM 1787-L, JAN 12 (CLINICAL LABORATORY TEST PROCEDURE REQUEST) REVERSE SIDE

**CLINICAL LABORATORY TEST PROCEDURE REQUEST
INSTRUCTIONS FOR USE**

Use this form only during automated system failures or downtimes (Composite Health Care System (CHCS), Essentris). The form may also be used in areas where access to automated systems is limited (i.e., mass casualty triage, cardiopulmonary resuscitation efforts outside of normal clinic/ward locations).

Use standard forms (SF, DD, DA, MAMC, etc.) to the fullest extent possible to request Laboratory Test .

This form does not replace forms used for Anatomic Pathology (Cytological and Surgical Tissue Examination Requests), Blood or Blood Component Transfusion and Workup of Suspected Transfusion Reactions.

Certain test require prior collection and handling arrangements, additional forms, justification and pathologist approval prior to submission of samples for commercial testing.

PATIENT INFORMATION -

Requesting Ward/Clinic Health Care Provider must validate patient information and print all information completely and legibly. Invalid, incomplete or illegible information may result in delayed testing or rejection of request.

Requesting Physician Phone/FAX Numbers are vital for notification in cases of critical test results and/or when patient care issues arise.

Collection Date and Time are required to determine specimen viability.

Specimen Source is required. When submitting specimens from multiple sources, use one request form per specimen source. Blood and urine may be combined on one form. For Microbiology specimens, indicate "Site" of specimen source, if applicable.

Select appropriate Testing Urgency (test from Surgical Services will be upgraded to "Pre-Op" testing urgency).

TEST REQUESTED -

Neatly shade in circles to indicate needed tests. Do not use checks or X's.

Test selections are itemized by Testing Section (i.e., Chemistry, Hematology, etc.). (NOTE: Two common specimen sources have been listed for ordering CSF and Urine, Random specimens. The tests located under these two categories are also within each of the respective Testing Sections.)

For the Drugs/Toxicology Test selection, indicate "Peak", "Trough" or "Random".

If a test is not listed, use the "Other Tests" area and/or the "Order Comment". (NOTE: Commercially performed tests may require additional approvals and forms.)

ORDER COMMENT -

Use this area for pertinent clinical comments. May also be used for requesting tests not listed.

**APPENDIX A-2 CLINICAL LABORATORY REQUEST FORMS
SF 557 (MISCELLANEOUS)**

U.S. GOVERNMENT PRINTING OFFICE: 1986-404-755-40007		PREVIOUS EDITION USABLE	
NSN 7540-00-181-8344			
Enter in above space PATIENT IDENTIFICATION—TREATING FACILITY—WARD NO.—DATE		SPECIMEN/LAB RPT. NO.	
REQUESTING PHYSICIAN'S SIGNATURE		MISC	
REMARKS		URGENCY <input type="checkbox"/> ROUTINE <input type="checkbox"/> TODAY <input type="checkbox"/> PRE-OP <input type="checkbox"/> STAT	
TEST(S) SPECIMEN TAKEN		PATIENT STATUS <input type="checkbox"/> BED <input type="checkbox"/> OUTPATIENT <input type="checkbox"/> NP <input type="checkbox"/> AMB <input type="checkbox"/> DOM	
DATE	TIME	A.M.	P.M.
REQUESTED		SPECIMEN SOURCE (Specify)	
RESULTS		LAB ID NO.	
REPORTED BY		TECH	
MD		DATE	
557-107		MISCELLANEOUS	
STANDARD FORM 557 (Rev. 3-77)		HAWAIIAN ISLANDS FORM 557-107-45-505	
HAWAIIAN ISLANDS FORM 557-107-45-505		PATIENT'S MED. RECORD	

APPENDIX A-3 CLINICAL LABORATORY REQUEST FORMS

SF 518 (BLOOD OR BLOOD COMPONENT TRANSFUSION)

518-124

NSN 7540-00-634-4159

MEDICAL RECORD		BLOOD OR BLOOD COMPONENT TRANSFUSION			
SECTION I - REQUISITION					
COMPONENT REQUESTED (Check one) <input type="checkbox"/> RED BLOOD CELLS <input type="checkbox"/> FRESH FROZEN PLASMA <input type="checkbox"/> PLATELETS (Pool of _____ units) <input type="checkbox"/> CRYOPRECIPITATE (Pool of _____ units) <input type="checkbox"/> Rh IMMUNE GLOBULIN <input type="checkbox"/> OTHER (Specify) _____		TYPE OF REQUEST (Check ONLY if Red Blood Cell Products are requested.) <input type="checkbox"/> TYPE AND SCREEN <input type="checkbox"/> CROSSMATCH DATE REQUESTED _____ DATE AND HOUR REQUIRED _____		REQUESTING PHYSICIAN (Print) _____ DIAGNOSIS OR OPERATIVE PROCEDURE _____ I have collected a blood specimen on the below named patient, verified the name and ID No. of the patient and verified the specimen tube label to be correct. SIGNATURE OF VERIFIER _____ DATE VERIFIED _____ TIME VERIFIED _____	
VOLUME REQUESTED (is applicable) _____ ML REMARKS: _____		KNOWN ANTIBODY FORMATION/TRANSFUSION REACTION (Specify) _____ IF PATIENT IS FEMALE, IS THERE HISTORY OF: RhIG TREATMENT? DATE GIVEN: _____ HEMOLYTIC DISEASE OF NEWBORN? _____			
SECTION II - PRE-TRANSFUSION TESTING					
UNIT NO.	TRANSFUSION NO.	TEST INTERPRETATION		PREVIOUS RECORD CHECK:	
	PATIENT NO.	ANTIBODY SCREEN	CROSSMATCH	<input type="checkbox"/> RECORD <input type="checkbox"/> NO RECORD SIGNATURE OF PERSON PERFORMING TEST _____	
DONOR	RECIPIENT	CROSSMATCH NOT REQUIRED FOR THE COMPONENT REQUESTED		DATE	
ABO	ABO				
Rh	Rh				
SECTION III - RECORD OF TRANSFUSION					
PRE-TRANSFUSION DATA			POST-TRANSFUSION DATA		
INSPECTED AND ISSUED BY (Signature) _____			AMOUNT GIVEN _____ ML	TIME/DATE COMPLETED/INTERRUPTED _____	
AT (Hour) _____ ON (Date) _____			REACTION <input type="checkbox"/> NONE <input type="checkbox"/> SUSPECTED	TEMPERATURE	PULSE
IDENTIFICATION			BLOOD PRESSURE		
I have examined the Blood Component container label and this form and I find all information identifying the container with the intended recipient matches item by item. The recipient is the same person named on this Blood Component Transfusion Form and on the patient identification tag.			If reaction is suspected - IMMEDIATELY: 1. Discontinue transfusion, treat shock if present, keep intravenous line open 2. Notify Physician and Transfusion Service. 3. Follow Transfusion Reaction Procedures. 4. Do NOT discard unit. Return Blood Bag, Filter Set, and I.V. solutions to the Blood Bank.		
1st VERIFIER (Signature) _____			DESCRIPTION OF REACTION		
2nd VERIFIER (Signature) _____			<input type="checkbox"/> URTICARIA <input type="checkbox"/> CHILL <input type="checkbox"/> FEVER <input type="checkbox"/> PAIN <input type="checkbox"/> OTHER (Specify) _____		
PRE-TRANSFUSION			OTHER DIFFICULTIES (Equipment, clots, etc.)		
TEMP. _____	PULSE _____	BP _____	<input type="checkbox"/> NO <input type="checkbox"/> YES (Specify) _____		
DATE OF TRANSFUSION _____			SIGNATURE OF PERSON NOTING ABOVE _____		
TIME STARTED _____					
PATIENT IDENTIFICATION - USE EMBOSSER (For typed or written entries give: Name-Last, first, middle; grade; rank; rate; hospital or medical facility)				SEX _____	WARD _____

SAMPLE FORM
DO NOT REPRINT FOR USE

BLOOD OR BLOOD COMPONENT TRANSFUSION

Medical Record

STANDARD FORM 518 (REV. 3-92)
Prescribed by GSA/ICMR, FIRM# (41 CFR) 201-9-202-1

Medical Record Copy

SF 518 (BLOOD OR BLOOD COMPONENT TRANSFUSION) REVERSE SIDE

INSTRUCTIONS FOR NON SELF-EXPLANATORY ITEMS

SECTION I — REQUISITION

Component Requested

"Other (Specify)" —List any whole blood or blood product not on menu, i.e., washed RBC's, deglycerolized RBC's, etc.

"Volume Requested (If applicable)" —Use only when different from standard amount, i.e., exchange transfusion 50 ml.

"Known Antibody Formation/Transfusion Reaction" —Check Medical Records. Annotate N/A if appropriate.

"If Patient is Female, Is There History Of" —Check medical records. Annotate N/A if appropriate.

SECTION II —PRE-TRANSFUSION TESTING

"Transfusion Number/Patient Number" —List either based on local procedures.

"Previous Record Check" —Current tests should be compared with prior records for ABO and Rh type, difficulty in blood typing, clinically significant unexpected antibodies, and severe adverse reactions.

"Test Interpretation" —Use the following standard notations. "NEG" or "POS" for antibody screen block. "COMPAT" or "INCOMPAT" for crossmatch block.

SECTION III —RECORD OF TRANSFUSION

"Pre Transfusion Data"

"Inspected and Issued by _____ at _____ on _____."

(Signature) (Hour) (Date)

This statement is to be completed by the issuing laboratory person once he/she has inspected the blood immediately before issue from the laboratory. The blood must not be abnormal in color or appearance or expired, and if any of these conditions exist the blood will not be used for transfusion.

"Signature" blank must contain the signature, as opposed to name, of issuing laboratory person.

"Hour" and "Date" are as of actual issue.

The issuing laboratory person will secure this form to the blood bag by string, rubberband, or tie knotted to the tag and the blood container before issuing the blood.

"Post Transfusion Date" —Completed by transfusionist.

"Amount Given _____ ml" —Visual approximation.

"Description of Reaction" —Check appropriate reaction or describe "other" on separate sheet, if necessary, and attach to SF 518.

"Other Difficulties" —Check item or describe on separate sheet and attach to SF 518.

APPENDIX A-4 CLINICAL LABORATORY REQUEST FORMS

MAMC FORM 159-L (BLOOD BANK MESSENGER SLIP AND RECEIPT)

BLOOD BANK MESSENGER SLIP AND RECEIPT <i>(For use of this form, see MAMC Memo 40-46; the proponent agency is Pathology.)</i>			
<i>This form is to be completed by a ward officer or nurse and carried to the Blood Bank where it must be deposited before blood products will be released. Only Emergency Room, Intensive Care Units, Recovery Room and Surgery will be authorized to pick up more than one unit at a time.</i>			
This messenger is authorized to pick up _____ unit(s) of:			
<input type="checkbox"/> Red Blood Cells <input type="checkbox"/> Platelet Conc <input type="checkbox"/> Fresh Frozen <input type="checkbox"/> Cryoprecipitate <input type="checkbox"/> Other _____			
DATE	WARD	SIGNATURE OF WARD OFFICER OR NURSE	
PATIENT IDENTIFICATION <i>(For typed or written entries give: Name - last, first, middle; grade; social security number; hospital or medical facility)</i>		FOR TRANSFUSION SERVICE USE ONLY	
		UNIT NUMBERS	

I acknowledge receipt of _____ unit(s) of blood products for the listed patient.			
TIME	DATE	RANK	SIGNATURE OF MESSENGER

MAMC FORM 159-L, 1 DEC 94
 EDITION OF 1 MAY 86 WILL BE USED UNTIL EXHAUSTED.

APPENDIX A-5 CLINICAL LABORATORY REQUEST FORMS

MAMC 1771-L (TISSUE BANK MESSENGER SLIP AND RECEIPT)

TISSUE BANK MESSENGER SLIP AND RECEIPT					
<i>(For use of this form, see MAMC Memorandum 40-77, the proponent agency is Department of Pathology.)</i>					
DATE	TIME OF SURGERY	OR ROOM #	REQUESTING PHYSICIAN		
PATIENT INFORMATION					
LAST NAME		FIRST NAME		SIGNATURE OF PERSON NOTING ABOVE	
FMP / SOCIAL SECURITY #			FOR TRANSFUSION SERVICE USE ONLY		
PRODUCTS	SIZE	QTY	LOT #	EXP DATE	
<input type="checkbox"/> AMNIOTIC MEMBRANE (AmbioDry)					
<input type="checkbox"/> BIOARC TO SYSTEM					
<input type="checkbox"/> CANCELLOUS CHIPS (15cc 30cc)					
<input type="checkbox"/> CORTICAL STRUT					
<input type="checkbox"/> CCACF LORDOTIC (5mm-9mm)					
<input type="checkbox"/> DBX BONE PUTTY					
<input type="checkbox"/> DURAGUARD DURAL PATCH					
<input type="checkbox"/> ENDURAGEN					
<input type="checkbox"/> FASCIA STRIP					
<input type="checkbox"/> FIBULA SECTION (FD)					
<input type="checkbox"/> ILIUM BLOCK TRICORTICAL					
<input type="checkbox"/> INFUSE BONE GRAFTS (S M L Lit)					
<input type="checkbox"/> INTEXEN LP					
<input type="checkbox"/> OPTECURE ALLOGRAFT PUTTY					
<input type="checkbox"/> OPTEFIL					
<input type="checkbox"/> OPTIFORM					
<input type="checkbox"/> OSTEO SET MINI BEAD KIT					
<input type="checkbox"/> OSTEOSET RESORBABLE KIT					
<input type="checkbox"/> SUPPLE PERIGUARD					
<input type="checkbox"/> PERI STRIPS FLEX 45					
<input type="checkbox"/> PERI STRIPS FLEX 60					
<input type="checkbox"/> PERMACOL					
<input type="checkbox"/> T-PLIF SPACER (7mm-17mm)					
<input type="checkbox"/> STRATTICE - TISSUE MATRIX					
<input type="checkbox"/> SURGESIS ES					
<input type="checkbox"/> TUTOPLAST FASCIA LATA					
<input type="checkbox"/> TUTOPLAST PERICARDIUM					
<input type="checkbox"/> VASCUGUARD PATCH					
<input type="checkbox"/> VERITAS COLLAGEN MATRIX					
<input type="checkbox"/>					

MAMC FORM 1771-L, JUN 2010

Edition of 1 May 09 will be used until exhausted.

MAMC PE v2.00

MAMC 1771-L (TISSUE BANK MESSENGER SLIP AND RECEIPT) REVERSE SIDE

TISSUE BANK MESSENGER SLIP AND RECEIPT				
PRODUCTS			FOR TRANSFUSION SERVICE USE ONLY	
SIZE	QTY	LOT #	EXP DATE	
REFRIGERATED TISSUE				
<input type="checkbox"/>	ALLODERM			
<input type="checkbox"/>	BARD COLLAGEN IMPLANT			
<input type="checkbox"/>	CYMETRA			
<input type="checkbox"/>	GRAFT JACKET TENDON/CUFF REPAIR			
<input type="checkbox"/>	GRAFT JACKET ULCER REPAIR			
<input type="checkbox"/>				
FROZEN TISSUE				
<input type="checkbox"/>	ADJ BTB TENDON BONE BLOCK			
<input type="checkbox"/>	ADJ BTB FEMORAL COMPONENT			
<input type="checkbox"/>	ANKLE TALUS (LF RF)			
<input type="checkbox"/>	VG2 CERVICAL SPACER (T46-T911)			
<input type="checkbox"/>	FEMORAL HEAD			
<input type="checkbox"/>	FEMUR DISTAL			
<input type="checkbox"/>	OPTEFORM DISC (20mm 30mm 45mm)			
<input type="checkbox"/>	TENDON ACHILLES (Non-Preshaped / Preshaped)			
<input type="checkbox"/>	TENDON PATELLAR PRESHAPED			
<input type="checkbox"/>	TENDON SEMITENDINOSUS			
<input type="checkbox"/>	TENDON TIBIALIS (Anterior / Posterior)			
<input type="checkbox"/>	VG1 FEMORAL SPACERS (10A-20A)			
NOTES				
TIME	DATE	SIGNATURE OF MESSENGER		ISSUING TECHNICIAN (INITIALS)

MAMC FORM 1771-L, JUN 2010

APPENDIX A-6 CLINICAL LABORATORY REQUEST FORMS

MAMC OP 1097-L (WORKUP OF SUSPECTED TRANSFUSION REACTION)

MEDICAL RECORD-SUPPLEMENTAL MEDICAL DATA						
For use of this form, see AR 40-66; the proponent agency is the Office of The Surgeon General.						
REPORT TITLE WORKUP OF SUSPECTED TRANSFUSION REACTION					OTSG APPROVED (Date)	
(For use of this overprint, see MAMC Memorandum 40-46; the proponent agency is Pathology.)					MAMC APR 05	
PART 1 - PRELIMINARY DATA (Completed by Ward Staff)						
UNIT NUMBER	PRODUCT TRANSFUSED			NAME OF PHYSICIAN NOTIFIED		
	<input type="checkbox"/> Red Blood Cells <input type="checkbox"/> Cryoprecipitate <input type="checkbox"/> Platelets <input type="checkbox"/> Other <input type="checkbox"/> FFP			WAS BLOOD WARMER USED? <input type="checkbox"/> Yes <input type="checkbox"/> No		
				WAS INFUSION PUMP USED? <input type="checkbox"/> Yes <input type="checkbox"/> No		
TRANSFUSION STARTED BY	DATE	TIME	TEMP	PULSE	BP	PRE-MEDICATIONS
TRANSFUSION STOPPED BY	DATE	TIME	TEMP	PULSE	BP	VOLUME TRANSFUSED
PART 2 - SIGNS AND SYMPTOMS (Completed by House Staff or Attending Physician)						
Clinical Signs and Symptoms	CLASS I		CLASS II		CLASS III	
	<input type="checkbox"/> Hives <input type="checkbox"/> Itching <input type="checkbox"/> Headache <input type="checkbox"/> Temperature rise (< 2°F above basal)		<input type="checkbox"/> Fever > 2° above basal OR ANY 2 OR MORE OF THE FOLLOWING: <input type="checkbox"/> Pain at infusion site <input type="checkbox"/> Increased pulse > 10 beats/minute above basal (except for pediatric pts) <input type="checkbox"/> Nausea/vomiting <input type="checkbox"/> Muscle tenderness <input type="checkbox"/> Chills <input type="checkbox"/> Back pain <input type="checkbox"/> Flushing		<input type="checkbox"/> Dark or bloody urine <input type="checkbox"/> Decreased urine output <input type="checkbox"/> Skin hemorrhages - oozing <input type="checkbox"/> Decreased blood pressure <input type="checkbox"/> Shortness of breath <input type="checkbox"/> Chest pain <input type="checkbox"/> Coma <input type="checkbox"/> Jaundice	
	1. Stop transfusion. 2. Give antihistamines per physician's order. Do not add to blood set. 3. After 15 minutes, if therapy is effective, consider resumption of transfusion. 4. If no response to above, follow instructions for Class II reactions. 5. Complete this form and forward to Transfusion Service.		1. Stop transfusion, but keep IV open with saline drip using new saline and IV set. Send old set and saline to Transfusion Svc. 2. Treat with antipyretics and sedatives. 3. Submit laboratory specimens.* 4. If laboratory tests indicate, start prophylactic treatment for Class III reactions. 5. Complete this form and forward to Transfusion Service.		1. Stop transfusion, but keep IV open with saline drip using new saline and IV set. Send old set and saline to Transfusion Svc. 2. Maintain blood pressure. 3. Treat as indicated for hemolytic reaction and/or consumptive coagulopathy. 4. Insert foley and monitor hourly output. 5. Submit laboratory specimens.* 6. Consult with pathologist.	
* Specimens to submit to Transfusion Service: one pink top post-transfusion blood specimen and a post-transfusion urine specimen.						
PART 3 - IDENTIFICATION CHECK (Completed by Ward Staff)						
A	Does name and SSN on name plate match name and SSN on wristband?			<input type="checkbox"/> Yes <input type="checkbox"/> No		
	Does name and SSN on name plate match name and SSN on original SF 518			<input type="checkbox"/> Yes <input type="checkbox"/> No		
	Does name and SSN on name plate match name and SSN on SF 518 attached to bag?			<input type="checkbox"/> Yes <input type="checkbox"/> No		
B	UNIT NUMBER ON BLOOD BAG		C	ABO/RH OF UNIT ON BLOOD BAG		
	UNIT NUMBER ON ORIGINAL SF 518			ABO/RH OF PATIENT ON SF 518		
PERSON PERFORMING IDENTIFICATION CHECK						
PREPARED BY (Signature & Title)				DEPARTMENT/SERVICE/CLINIC		DATE
PATIENT'S IDENTIFICATION (For typed or written entries give: Name - last, first, middle; grade; date; hospital or medical facility) (FMP, sponsor's SSN, patient's SSN, date of birth; register number (if any))				<input type="checkbox"/> HISTORY/PHYSICAL <input type="checkbox"/> FLOW CHART <input type="checkbox"/> OTHER EXAMINATION OR EVALUATION <input checked="" type="checkbox"/> OTHER (Specify) SF 518 <input type="checkbox"/> DIAGNOSTIC STUDIES <input type="checkbox"/> TREATMENT		
DA FORM 4700 <small>1 MAY 78</small>			MAMC OP 1097-L, 1 MAY 05 PREVIOUS EDITIONS ARE OBSOLETE.			

APPENDIX B-1 ANATOMIC PATHOLOGY FORMS

DA FORM 565 (STATEMENT OF RECOGNITION OF DECEASED)

STATEMENT OF RECOGNITION OF DECEASED			
PRIVACY ACT STATEMENT			
<p>AUTHORITY: 10 USC Sections 1481 through 1488, EO 9397, Nov. 1943 (SSN).</p> <p>PURPOSE AND USE: This form is used to establish initial identification of deceased personnel.</p> <p>DISCLOSURE: Personal information provided on this form is given on a voluntary basis. Failure to provide this information, however, may result in improper identification of the deceased person and person making visual identification.</p>			
1. TENTATIVELY IDENTIFIED DECEDENT			
a. NAME (Last, First, Middle Initial) (or Unidentified)		b. RANK	c. SSN
d. ORGANIZATION		e. SERVICE	
2. I HAVE PERSONALLY VIEWED THE REMAINS TENTATIVELY IDENTIFIED ABOVE. RECOGNITION IS BASED ON THE FOLLOWING.			
a. SEX	b. APPROXIMATE AGE (Years)	c. APPROXIMATE HEIGHT	d. RACE
e. HAIR COLOR (If brown, indicate light or dark, as applicable)		f. BUILD/MUSCULARITY (Slender, medium, heavy or obese)	
g. IDENTIFYING MARKS (Fully describe by type and location ALL known scars, tattoos, birthmarks, amputations or other body markings to support the identification.)			
h. REMARKS			
3. DETAILS OF VIEWING			
a. DATE (YYYYMMDD)	b. TIME	c. PLACE	
4. PERSON MAKING VISUAL IDENTIFICATION			
a. NAME (Last, First, Middle Initial)		b. RANK	c. SSN
d. ORGANIZATION	e. SIGNATURE		f. DATE SIGNED (YYYYMMDD)
g. RELATIONSHIP TO DECEASED (CDR, ISG, Friend, Relative, etc.)		h. LENGTH OF TIME YOU KNEW DECEASED (Number of months or years)	
5. WITNESS			
I certify that the individual identified in Item 4 has viewed the remains in my presence, and that to the best of my knowledge and belief the above statements are true.			
a. NAME (Last, First, Middle Initial)		b. RANK	c. TITLE
d. ORGANIZATION	e. SIGNATURE		f. DATE SIGNED (YYYYMMDD)

DD FORM 565, JUL 1998

PREVIOUS EDITION MAY BE USED.

Adobe Professional 8.0

**APPENDIX B-2 ANATOMIC PATHOLOGY FORMS
DD 2005 (PRIVACY ACT STATEMENT)**

PRIVACY ACT STATEMENT - HEALTH CARE RECORDS		
<i>THIS FORM IS NOT A CONSENT FORM TO RELEASE OR USE HEALTH CARE INFORMATION PERTAINING TO YOU.</i>		
<p>1. AUTHORITY FOR COLLECTION OF INFORMATION INCLUDING SOCIAL SECURITY NUMBER (SSN)</p> <p>Sections 133, 1071-87, 3012, 5031 and 8012, title 10, United States Code and Executive Order 9397.</p>		
<p>2. PRINCIPAL PURPOSES FOR WHICH INFORMATION IS INTENDED TO BE USED</p> <p>This form provides you the advice required by The Privacy Act of 1974. The personal information will facilitate and document your health care. The Social Security Number (SSN) of member or sponsor is required to identify and retrieve health care records.</p>		
<p>3. ROUTINE USES</p> <p>The primary use of this information is to provide, plan and coordinate health care. As prior to enactment of the Privacy Act, other possible uses are to: Aid in preventive health and communicable disease control programs and report medical conditions required by law to federal, state and local agencies; compile statistical data; conduct research; teach; determine suitability of persons for service or assignments; adjudicate claims and determine benefits; other lawful purposes, including law enforcement and litigation; conduct authorized investigations; evaluate care rendered; determine professional certification and hospital accreditation; provide physical qualifications of patients to agencies of federal, state, or local government upon request in the pursuit of their official duties.</p>		
<p>4. WHETHER DISCLOSURE IS MANDATORY OR VOLUNTARY AND EFFECT ON INDIVIDUAL OF NOT PROVIDING INFORMATION</p> <p>In the case of military personnel, the requested information is mandatory because of the need to document all active duty medical incidents in view of future rights and benefits. In the case of all other personnel/beneficiaries, the requested information is voluntary. If the requested information is not furnished, comprehensive health care may not be possible, but CARE WILL NOT BE DENIED.</p> <p>This all inclusive Privacy Act Statement will apply to all requests for personal information made by health care treatment personnel or for medical/dental treatment purposes and will become a permanent part of your health care record.</p> <p>Your signature merely acknowledges that you have been advised of the foregoing. If requested, a copy of this form will be furnished to you.</p>		
SIGNATURE OF PATIENT OR SPONSOR	SSN OF MEMBER OR SPONSOR	DATE

DD FORM 2005, FEB 1976

PREVIOUS EDITION IS OBSOLETE.

APD PE v1.00

APPENDIX B-3 ANATOMIC PATHOLOGY FORMS

DPALS FORM 4 JAN 2010 (REQUEST FOR REFERRAL TO COMMERCIAL LABORATORY)

Madigan Army Medical Center
 Department of Pathology and Area Laboratory Services
 Pathology Support Service

**REQUEST FOR REFERRAL TO COMMERCIAL LABORATORY
 Other than Contract Laboratory**

TO: Department of Pathology Shipping Section	FROM: (Requesting Physician and Activity)	Date of Request:
PROVISIONAL DIAGNOSIS:		
<p>Reason for Request: All requests for laboratory testing at a site without a contract with the Department of Pathology, Madigan AMC must be justified and approved.</p> <p>1. Test requested: _____ Recurring Request? YES <input type="checkbox"/> NO <input type="checkbox"/> Start Date: _____ End Date: _____</p> <p>2. Is there a lab that offers this test(s) that has a contract with MAMC? YES <input type="checkbox"/> NO <input type="checkbox"/></p> <p>3. Reason this test cannot be sent to contracted lab? (You must cite specific reasons and indicate if this has been discussed with one of the Department Pathologists.</p> <p>4. Other Laboratory's address, telephone number, and point of contact:</p> <p>5. What is the price of testing performed at the required reference laboratory?</p> <p>6. Comments specific to testing:</p> <p>LAB ACCESSION NUMBER: _____</p>		
Approving Process:		
Chief of requesting activity: _____		Date of approval: _____
Chief, Dept of Pathology: _____		Date of approval: _____
Patient Information:		
Patient Last Name: _____		First Name: _____ MI: _____
FMP: _____	SSN: _____	DOB: _____
<p><small>This document may contain information covered under the Privacy Act, 5 USC 552(a), and/or the Health Insurance Portability and Accountability Act (PL 104-191) and its various implementing regulations and must be protected in accordance with those provisions. Healthcare information is personal and sensitive and must be treated accordingly. If this correspondence contains healthcare information it is being provided to you after appropriate authorization from the patient or under circumstances that don't require patient authorization. You, the recipient, are obligated to maintain it in a safe, secure, and confidential manner. Disclosure without additional patient consent or as permitted by law is prohibited. Unauthorized disclosure or failure to maintain confidentiality subjects you application of appropriate sanction. If you have received this correspondence in error, please notify the sender at once and destroy any copies you have made.</small></p>		

*****PSS Technician must certify the following information below **BEFORE** requesting approval from the Chief, Dept of Path and **BEFORE** shipping the specimen to an outside laboratory.

I have verified the following information for the above request for reference testing/consultation:

1. The requested test is not offered by Quest Diagnostics
2. The recommended vendor is not one of MAMC's contract laboratories
3. The total amount of testing, to include any possible reflex testing, is less than \$2,500
4. The vendor/reference laboratory accepts VISA credit cards

PSS Tech Signature: _____
 If any questions above are answered FALSE please contact PSS supervisor for guidance.
 CS Budget NCO: Date: _____ Time: _____ Initials: _____

Original Version, 4 January 2010

APPENDIX B-4 ANATOMIC PATHOLOGY FORMS
MAMC FORM 1597-1-L (CYTOLOGY GYNECOLOGIC REQUISITION)

PATIENT IDENTIFICATION	CYTOLOGY GYNECOLOGIC REQUISITION (For use of this form, see Lab Submission Manual; the proponent agency is Pathology.)		
	PATIENT'S DATE OF BIRTH	LOCATION/ WARD #	ATTENDING PHYSICIAN (STAMP OR PRINT)
	MEPRS CODE		
	MENSTRUAL STATUS <input type="checkbox"/> PRE-MENOPAUSAL <input type="checkbox"/> PREGNANT <input type="checkbox"/> POST-PARTUM <input type="checkbox"/> POST MENOPAUSAL <input type="checkbox"/> HYSTERECTOMY		FIRST DAY OF LAST MENSTRUAL PERIOD
SPECIMEN SOURCE <input type="checkbox"/> CERVICAL/ENDOCERVICAL <input type="checkbox"/> VAGINAL ONLY <input type="checkbox"/> OTHER _____	OTHER PERTINENT CLINICAL DIAGNOSIS/HISTORY <input type="checkbox"/> COLPO <input type="checkbox"/> OB <input type="checkbox"/> ONC		
DATE TAKEN			
PREVIOUS ATYPICAL CYTOLOGY <input type="checkbox"/> YES <input type="checkbox"/> NO PREVIOUS HISTORY OF CANCER <input type="checkbox"/> YES <input type="checkbox"/> NO TYPE OF CANCER _____ DATE OF CANCER _____ RADIATION THERAPY <input type="checkbox"/> YES <input type="checkbox"/> NO CHEMOTHERAPY <input type="checkbox"/> YES <input type="checkbox"/> NO OTHER TREATMENT _____			
RISK FACTORS FOR CERVICAL CANCER <input type="checkbox"/> YES <input type="checkbox"/> NO RISK FACTORS FOR ENDOMETRIAL CANCER <input type="checkbox"/> YES <input type="checkbox"/> NO HORMONE USAGE <input type="checkbox"/> YES <input type="checkbox"/> NO ABNORMAL BLEEDING <input type="checkbox"/> YES <input type="checkbox"/> NO			
FOR LABORATORY USE ONLY			
QA/SPECIMEN REQUISITION DEFICIENCIES			
1: _____ 2: _____			
3: _____			
4: _____			
			NUMBER OF SLIDES RECEIVED

MAMC FORM 1597-1-L, 1 DEC 92

REPLACES MAMC FOR 1061-L, 1 DEC 90, WHICH IS OBSOLETE.

APPENDIX B-5 ANATOMIC PATHOLOGY FORMS
MAMC FORM 1597-L (NON-GYNECOLOGIC CYTOLOGY REQUISITION)

NON-GYNECOLOGIC CYTOLOGY REQUISITION <i>(For use of this form see the Specimen Submission Manual, proponent agency is Dept of Pathology.)</i>		
<small>This form is used for Non-Gynecologic Cytology Requisition including, but not limited to: Body Cavity Fluids, Brushings, Washings, Urine, Fine Needle Aspirations, etc.)</small>		
SPECIMEN TYPE (INCLUDE SITE)	DATE SPECIMEN OBTAINED	
WARD NO /LOCATION	MEPRS CODE	PATIENTS DATE OF BIRTH
ATTENDING PHYSICIAN (PLEASE STAMP/PRINT)	CONSULTING PHYSICIAN/SERVICE (PLEASE STAMP/PRINT)	
CLINICAL HISTORY		
SUSPICION OF CANCER <input type="checkbox"/> YES <input type="checkbox"/> NO	PREVIOUS HISTORY OF CANCER <input type="checkbox"/> YES <input type="checkbox"/> NO	
SYMPTOMS/PHYSICAL FINDINGS: _____	TYPE AND DATE: _____	
_____	_____	
RADIOGRAPHIC FINDINGS: _____	RADIATION THERAPY <input type="checkbox"/> YES <input type="checkbox"/> NO	CHEMOTHERAPY <input type="checkbox"/> YES <input type="checkbox"/> NO
_____	OTHER TREATMENT: _____	
_____	_____	
HISTORY TOBACCO USAGE <input type="checkbox"/> YES <input type="checkbox"/> NO	_____	
OTHER PERTINENT CLINICAL HISTORY AND PHYSICAL FINDINGS:		
FOR LABORATORY USE ONLY		
ACCESSION NUMBER	GROSS DESCRIPTION	
# WF SLIDES RECEIVED: _____	# WF SLIDES MADE: _____	# WF CYTOSPIN SLIDES: _____
# AD SLIDES RECEIVED: _____	# AD SLIDES MADE: _____	# AD CYTOSPIN SLIDES: _____
CELL BLOCK: _____	SPECIAL PROCEDURES: _____	
FNA PROCURED AT: _____	FNA PROCURED BY: _____	
CYTOTECHNOLOGIST ASSISTANCE: _____		
DIAGNOSIS		
<small>PATIENT'S IDENTIFICATION (For typed or written entries give: Name -last, first middle; grade; date; hospital or medical facility)</small>		

MAMC FORM 1597-L, 1 SEP 92

APPENDIX B-6 ANATOMIC PATHOLOGY FORMS
MAMC FORM 1645-L (SURGICAL TISSUE EXAMINATION REQUEST)

PATIENT IDENTIFICATION *(For written or typed entries, give: (Name (L/F/MI), Rank/Ret and 11Digit SSN)*

SURGICAL TISSUE EXAMINATION REQUISITION			
<i>(For use of this form, see MAMC Pathology Handbook; the proponent agency is Pathology)</i>			
PATIENT DOB <i>(Day/Month/Year)</i>	SEX <input type="checkbox"/> M <input type="checkbox"/> F	LOCATION OF PATIENT RECORDS	MEPRS CODE
WARD/CLINIC	ATTENDING PHYSICIAN'S NAME <i>(Print or Stamp)</i>		PHONE/BEEPER #
DATE OBTAINED	COPY TO (REFERRING PHYSICIAN) <i>(Print or Stamp)</i>		
CLINICAL HISTORY <i>(Pertinent clinical symptoms, physical or radiographic findings, duration and size of lesion)</i> PRE-OP DIAGNOSIS POST-OP DIAGNOSIS/DIFFERENTIAL DIAGNOSIS PREVIOUS HISTORY OF CANCER: <input type="checkbox"/> Yes <input type="checkbox"/> No IF YES, TYPE AND DATE:	TYPE AND LOCATION OF TISSUE (SOURCE OF TISSUE) <i>(Use additional forms, if needed.)</i> A _____ B _____ C _____ D _____ E _____ F _____ G _____ H _____ I _____ J _____		

MAMC FORM 1645-L, 1 FEB 00

EDITION OF 1 JUL 94 MAY BE USED UNTIL EXHAUSTED.

APPENDIX B-7 ANATOMIC PATHOLOGY FORMS
SF 515 (TISSUE EXAM REQUEST)

AUTHORIZED FOR LOCAL REPRODUCTION

MEDICAL RECORD		TISSUE EXAMINATION	
SPECIMEN SUBMITTED BY			DATE OBTAINED
SPECIMEN			
BRIEF CLINICAL HISTORY <i>(Include duration of lesion and rapidity of growth, if a neoplasm)</i>			
PREOPERATIVE DIAGNOSIS			
OPERATIVE FINDINGS			
POSTOPERATIVE DIAGNOSIS		SIGNATURE 	
		NAME OF SIGNER	
		TITLE OF SIGNER	
PATHOLOGICAL REPORT			
NAME OF LABORATORY		ACCESSION NO(S)	
GROSS DESCRIPTION, HISTOLOGIC EXAMINATION AND DIAGNOSES			
SIGNATURE OF PATHOLOGIST 		NAME OF PATHOLOGIST	DATE
HOSPITAL OR MEDICAL FACILITY	RECORDS MAINTAINED AT	DEPARTMENT/SERVICE OF PATIENT	
RELATION TO SPONSOR	SPONSOR'S NAME <i>(Last, first, middle)</i>	SPONSOR'S ID NUMBER <i>(SSN or Other)</i>	
PATIENT'S IDENTIFICATION <i>(For typed or written entries, give: Name--last, first, middle; ID (SSN or other); Sex; Date of Birth; Rank/Grade)</i>		REGISTER NO.	WARD NO.

TISSUE EXAMINATION

Medical Record

STANDARD FORM 515 (REV. 8-97)
 Prescribed by GSA/ICMR FPMR 101-11.203(b)(10)

**APPENDIX B-8 ANATOMIC PATHOLOGY FORMS
SF 523 (AUTHORIZATION FOR AUTOPSY)**

AUTHORIZED FOR LOCAL REPRODUCTION

MEDICAL RECORD	AUTHORIZATION FOR AUTOPSY
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In the event authorization for autopsy is obtained by letter, telegram, voice recorded or monitored telephone call, paragraphs 1, 2, and 3 shall be completed by medical facility authorities and the letter, telegram, voice recording or memorandum confirming telephone call of authorization attached to this form for permanent file.

1. NAME AND LOCATION OF MEDICAL FACILITY	DATE AND TIME
--	---------------

2. I(We) request and authorize the physicians in attendance at the above named medical facility to perform a complete autopsy on the remains of _____

I(We) understand that a complete autopsy may include, but not be limited to, examination of the head, eyes, spinal cord, chest, abdomen and extremities unless excluded under restrictions hereinafter, and I(We) authorize the removal and retention or use for diagnostic, scientific, or therapeutic purposes any parts, tissues, or organs as such physicians or their designees may deem proper, and the final disposal thereof in such manner as may be prescribed by competent authority (Commanding Officer, Medical Director, etc.) in this facility.

This authority is granted subject to the following restrictions: _____

(If No Restrictions, Write "None")

The following special examinations are requested: _____

3. I(We) represent that I am (we are) the _____ (Relationship/Authority)

of the deceased and entitled by law to control the disposition of the remains.

WITNESSES (medical facility staff members): Signed _____

Signed _____

Signed _____
(Name and Title)

Signed _____
(Name and Title)

FOR ADMINISTRATIVE USE ONLY		
Case falls within jurisdiction of Medical Examiner/Coroner		<input type="checkbox"/> YES <input type="checkbox"/> NO
Medical Examiner/Coroner released remains from his jurisdiction to this authority		<input type="checkbox"/> YES <input type="checkbox"/> NO
SIGNATURE	TITLE	DATE
PATIENT'S IDENTIFICATION <small>(For typed or written entries give: Name - last, first, middle; grade, date; hospital or medical facility)</small>		REGISTER NO. WARD NO.

AUTHORIZATION FOR AUTOPSY
Medical Record

STANDARD FORM 523 (REV. 12-93)
Prescribed by GSA/ICMR, FIRM (41 CFR) 201-9.202-1

APPENDIX B-9 ANATOMIC PATHOLOGY FORMS
SF 523A (DISPOSITION OF BODY)

Authorized for Local Reproduction

MEDICAL RECORD	DISPOSITION OF BODY
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RECEIPT OF BODY AT MORGUE

The body of _____ was received
(Name)

at _____ A.M. on _____
P.M. on *(Date)*

(Signature)

CERTIFICATE OF REMOVAL

The body of _____ was removed
(Name)

by _____
(Name and address of undertaker)

at _____ A.M. on _____
P.M. on *(Date)*

(Signature of person releasing body to undertaker) _____
(Signature of representative of undertaker)

The following statement shall be completed only when specifically ordered.

PHYSICIAN'S STATEMENT REGARDING CONDITION OF REMAINS AS RELEASED (Describe post-mortem, surface discolorations, abrasions, lesions, whether remains were embalmed, etc.)

THIS BODY CONTAINS A MEDICAL IMPLANT WHICH MAY INCLUDE A BATTERY OR POWER CELL YES NO

(Signature of Physician)

PATIENT'S IDENTIFICATION (For typed or written entries give: Name - last, first, middle; grade; date; hospital or medical facility)

REGISTER NO.	WARD NO.
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DISPOSITION OF BODY
 Medical Record

STANDARD FORM 523-A (REV. 12-53)
 Prescribed by GSA/ICMR FRMR (41 CFR) 201.5-202.1)

APPENDIX C-1 PATIENT INSTRUCTIONS HAND-OUT

PSS-RD.02.-01.F01-01

10 August 2010

Department of Pathology & Area Laboratory Services
Madigan Army Medical Center
Tacoma, WA 98431-1100
(253) 968-1930

Pathology Support Service Patient Instructions

Collection of 72-Hour Fecal Fat

1. This test provides a means of measuring "fecal fat" for the diagnosis of steatorrhea (excessive amounts of fats in the feces). Before initiation of the stool collection, you must first follow a diet, which includes the ingestion of 100 grams of fat per day for 3 consecutive days which translates into a total of 6 days to complete the collection (3 days preparation and 3 days collection). In addition to following a high fat diet, you should avoid alcohol for 24 hours before the test collection. The following shows what foods or their nutritive equivalents should be included in the daily diet:

<u>Food Group</u>	<u>Fat (grams)</u>
2 Cups Whole Milk	20
8 oz Lean Meat or 5 oz Medium Fat Meat	24-25*
1 Egg	5
5 Servings Fruits & Vegetables	Trace
6 Servings Whole-Grain Breads, Enriched Breads or Cereal	Trace
10 Tsp Fat (Margarine, Oil, Mayonnaise)	50
Total Fat	99-100

* May substitute 5 oz High Fat Meat and reduce fats to 7 Tsp

The above table is provided as suggested servings but substitutions can be made to accumulate the recommended 100 grams of fat per day for three days.

2. Start your stool collection on the morning of the first day and continue to collect ALL stools for days 1, 2, and 3, ending on the morning of the fourth day.
3. Place the white plastic collection hat across the toilet seat in order to collect the stool.
4. Transfer the stool to the collection can, **ONLY STOOL IS TO BE PLACED IN THE COLLECTION CAN**. Ensure that no urine or other contaminants are placed in the collection container. Talc, oils or lotions should not be used during the collection period as these substances interfere with the assay.
5. Collection can(s) should only be filled two-thirds full. If another collection can is needed, please return to the Laboratory. Only collection cans distributed by the Department of Pathology, MAMC may be used.
6. Keep the collection can cool when not in use. This will prevent odor and bacteria build-up.
7. Upon completion, return the collection can to the Laboratory with the request. In addition, ensure that the can has patient's name and sponsor's SSN attached with date and time that the collection was started and stopped.
8. You may drop off your specimen in the Laboratory at any time. We are open 24 hours per day, 7 days per week for dropping off specimens.

APPENDIX C-2 PATIENT INSTRUCTIONS HAND-OUT

PSS-RD.02-01.F06-01

25 September 2012

MADIGAN ARMY HEALTHCARE SYSTEM
DEPT OF PATHOLOGY AND AREA LABORATORY SERVICES
PATHOLOGY SUPPORT SERVICE
TACOMA, WA 98431
(253) 968-1930

Pathology Support Service Patient Instructions

GENERAL COLLECTION INSTRUCTIONS FOR ALL STOOL SPECIMENS

1. Empty bladder into the toilet before beginning collection of fecal specimen. Contamination with urine, water or other substance such as oil or powder will interfere with test results.
2. Place the specimen collection "hat" over the opening of the toilet, underneath the lid to catch the contents of the bowel movement.
3. Transfer sample(s) of the specimen to the appropriate container as described on the chart and instruction below. Dispose of any remaining stool in toilet and discard used collection hat in trash.
4. Maintain specimens at room temperature after collection and during transport to the laboratory.
5. Ensure that each container is labeled with your name (Last, First MI), family member prefix and sponsor's SSN. Also, record on the label the date and time collected.
6. Return your specimen to the lab within 48 Hours. The lab is open 24 hours per day, 7 days per week for turning in specimens.

Instruction: Determine the Specimen Type from the chart on the line checked by Lab personnel and follow the corresponding instruction:

(check)	Test Requested	Type of Specimen	Storage Stability
	Ova & Parasite	Raw	Less than 48 hours Room Temperature
		Para Pak (Formalin and PVA)	Indefinitely at Room Temperature
	Stool Culture	Raw	Less than 48 hours Room Temperature
		Enteric Transport Media	4 days at Room Temperature
	Giardia Antigen	Raw	Less than 48 hours Room Temperature
		Preserved Formalin (in Para Pak kit)	Indefinitely at Room Temperature
	Fecal Fat (qualitative)	Raw	2 days Refrigerated
	Fecal Fat (quantitative)	72 hour collection – Silver can – these instructions do not apply	Refrigerate during collection, return to lab immediately following collection
	C-diff	Raw	5 days Refrigerated
	Fecal Leukocytes	Raw	2 weeks Refrigerated
	Pancreatic Elastase	Raw	5 days Room Temperature
	H. pylori, Stool	Raw	3 days Refrigerated
	Other:		

Raw: this specimen is fresh and not placed in any type of preservative or fluid. The specimen should be placed in the cup provided by the laboratory. You may use a wooden tongue depressor to transfer specimen to the cup. (Specimens received in dirty diapers are not acceptable and will be rejected).

Preserved: This specimen is placed in two vials in the kit that you received from the front desk of the laboratory. Select areas of the stool that are especially bloody or slimy, and using the spoon in the kit or a wooden tongue depressor, fill each vial with enough feces until the liquid reaches the mark "Fill Line" of each vial. Tightly replace the cap and shake hard until the specimen is well mixed. *Keep vials out of the reach of children.*

Enteric Transport Media: Specimens for stool cultures must be placed in the vial of pink liquid furnished by the lab as soon after collection as possible. Transfer enough stool to the vial to bring the liquid level up to the "Fill Line" using the small spoon included with the vial or wooden tongue depressor. Tightly replace the cap and shake well to mix thoroughly. *Keep vials out of the reach of children.*

APPENDIX C-3 PATIENT INSTRUCTIONS HAND-OUT

PSS-RD.02-01.F2-01

11 August 2010

Department of Pathology & Area Laboratory Services
Madigan Army Medical Center
Tacoma, WA 98431-1100
(253) 968-1930

Pathology Support Services Patient Instructions

1-Hour Glucose Tolerance Test (GTT)

1. In the glucose tolerance test, the patient's ability to tolerate an oral glucose load is evaluated by obtaining a serum specimen for glucose level determination one hour after administration of 50 grams of glucose. These tests are used to look for gestational diabetes, which if untreated may lead to complications in both mother and baby. The one-hour glucose test is usually done between 24 and 28 weeks of pregnancy as a screening test. Any abnormal values need to be followed up with the more extensive three-hour test to see if there really is a problem. In the one-hour test, the woman drinks a flavored liquid that contains exactly 50 grams of glucose, and her blood is drawn one hour later. No special preparation is needed for this test.
2. 1-Hour GTT's are performed Monday through Friday prior to 1530 hours.
 - Please take a number and wait to be called to the Front Desk.
 - Your number will be called again to proceed to the phlebotomy area and asked to drink 5oz of Glucola (50 g glucose) within five minutes. NOTE: The one-hour wait will begin at this point.
 - The phlebotomist will instruct you on when to return for the subsequent blood draw (one hour).
 - It is important that you wait in the patient waiting area during the test. NOTE: There is NO smoking, gum chewing, eating or drinking (except water) throughout the test.
 - You must remain in the waiting room the entire one hour. Remain sitting as much as possible as increased activity during this time will effect glucose utilization.
3. If you experience weakness, dizziness, faintness, and/or nausea throughout the testing period, please notify the front desk or phlebotomist immediately.

APPENDIX C-4 PATIENT INSTRUCTIONS HAND-OUT

PSS-RD.02.-01.F04-01

11 August 2010

Department of Pathology & Area Laboratory Services
Madigan Army Medical Center
Tacoma, WA 98431-1100
(253) 968-1930

Pathology Support Service Patient Instructions

COLLECTION KIT FOR PINWORMS

1. **Enterobius Vermicularis**, or pinworm, is the causative agent for Enterobiasis. Presence of this parasite is not life threatening, but can be exceedingly uncomfortable, and is easily spread from person to person. Because of the difficulty in finding pinworms or their eggs in stool, specimens must be collected from the perianal area. It is to this area that the female pinworm migrates and lays large numbers of eggs while the host is resting and/or sleeping.
2. Because of migratory habits of the female pinworm, specimens are best obtained a few hours after the person has retired, between the hours of 9:00 P.M. and midnight, or immediately upon rising, before bathing or bowel movement. Collection of **two to three** consecutive daily specimens is recommended. **Make sure you wash your hands after collection to prevent spread of disease causing parasites.**
3. The collection kit is simply a clear paddle with one sticky side. At the times indicated above, press the sticky side of the paddle onto the skin around the anal area several times. Replace the paddle into the tube (the tube must be labeled with the patient's name and sponsor social security number). Keep at room temperature and wash your hands.
4. When all specimens are completed (2-3 days), bring them and the lab slips to the hospital laboratory. You may drop off your specimen in the main laboratory at any time. We are open 24 hours per day, 7 days per week for dropping off specimens.

Any questions related to the proper collection should be referred to the Laboratory at **(253) 968-1930**.

APPENDIX C-5 PATIENT INSTRUCTIONS HAND-OUT

PSS-RD.02.-01.F05-01

10 August 2010

Department of Pathology and Area Laboratory Services
Madigan Army Medical Center
Tacoma, WA 98431-1100
(253) 968-1930

Pathology Support Service Patient Instructions

SEMEN ANALYSIS COLLECTION AND SUBMISSION INSTRUCTIONS

Note: Do not take a number when delivering specimen to the Laboratory. Give your sample directly to the receptionist identifying the type of specimen being dropped off. Laboratory (253) 968-1930

1. **Patient:** In order to provide the most meaningful and accurate results to your physician for this test, please read the following instructions carefully and provide the information requested.
2. Follow the instructions given to you concerning the period of abstinence necessary prior to collecting your semen sample. If no instructions were given to you, abstain from ejaculation for a minimum of 48 hours and up to 7 days before collecting your specimen. (Reference: World Health Organization).

What was your Ejaculatory Abstinence time? _____

3. Semen samples are only accepted in the Laboratory **Monday through Thursday (except Holidays)** between the hours of **0830 and 1100**.
4. Obtain your semen sample by masturbation. Do not collect the sample in a condom. It will be rejected.
5. Ejaculate all the semen directly into the sterile specimen cup provided to you. Do not contaminate the cup or specimen with any other substances. **Keep the semen sample at room temperature. Do not expose to excessive heat or cold.**
6. Write your name (Last, First) and SSN (Sponsor) on the label provided and affix it to the side of the specimen container. It is important to ensure that specimens are labeled. Unlabeled specimens are **rejected**.
7. Deliver your specimen to the MAMC Laboratory **within thirty minutes of collection**.
8. **Patient:** Please fill in the following information and submit this form to the MAMC Laboratory with your specimen and laboratory slip (if you have one):

a. **NAME:** _____ **SSN:** _____

b. **Collection DATE:** _____ **TIME:** _____

9. In order to determine how your specimen should be processed by testing personnel, check the appropriate response: Post Vasectomy Infertility Workup Other

Laboratory: Time Received: _____

Specimen Condition: Room Temperature? Yes No

Collection/Transport Problems? _____

APPENDIX C-6 PATIENT INSTRUCTIONS HAND-OUT

PSS-RD.02.-01.F09-01

10 August 2010

Department of Pathology & Area Laboratory Services
Madigan Army Medical Center
Tacoma, WA 98431-1100
(253) 968-1930

Pathology Support Services Patient Instructions

24-HOUR URINE COLLECTION

CAUTION: An acid preservative may be added to the container before you start your collection. If there is a orange sticker on the container or tag that says “**CAUTION CONTAINS ACID**”, do not urinate directly into the container and avoid splashing when you transfer urine into the container. Take care not to spill acid on clothing or personal property as it can cause damage. Accidental spills should be neutralized with baking soda. Exercise caution when handling contents of 24-Hour Urine Collection container. Complete Material Safety Data Sheets for 24-Hour Urine additives available from Laboratory upon request

1. Upon rising in morning, discharge your first morning urine into the toilet. **Note this time and date on the tag that is attached to the large container. REMEMBER, do not add this first voided specimen to the container.**
2. Collect and save all urine in the large container provided for the next 24 hours. This will include the first void on the second morning, which will be the last collection. **Note this date and time on the tag attached to the large container.**
3. **IMPORTANT:** Keep the container in the refrigerator and/or on ice during the entire collection period. Return the container of urine to the lab on ice in the bucket provided. Do not freeze the specimen.
4. Additional containers are available in the laboratory. We cannot accept specimens in any other containers than those provided by the laboratory.
5. Before you leave your specimen at the laboratory, ensure that your specimen is labeled correctly with your name and sponsor’s SSN. Also, ensure that the date and time that the collection was started and finished are recorded on the tag.
6. You may drop off your specimen at the main laboratory at any time. We are open 24 hours a day, 7 days a week for dropping off specimens.

Any questions related to the proper collection should be referred to the Laboratory at **(253) 968-1930**.

APPENDIX C-7 PATIENT INSTRUCTIONS HAND-OUT

PSS-RD.02.-01.F10-01

9 July 2010

Department of Pathology & Area Laboratory Services
Madigan Army Medical Center
Tacoma, WA 98431-1100
(253) 968-1930

Pathology Support Service Patient Instructions

URORISK 24-Hour Urine Collection

IMPORTANT NOTE: If you think the urine volume will go above the **BLACK BAND** found below the handle on the container you must obtain a second collection container before beginning your collection. If your urine volume is up to the **BLACK BAND** and you do not have a second container, **DO NOT** stop your 24-hour collection, continue to fill the single container.

1. Before beginning urine collection, empty bladder into the toilet. The urine is **NOT** to be saved. Make note of this **START** time.
2. The next time you need to urinate, urinate directly into the orange container or transfer from the provided "collection hat" into the orange container.
3. Between urinations, keep the lid screwed tightly onto the plastic orange container and store in a refrigerator or in a cool location.
4. Exactly 24-hours after beginning the urine collection (**START** time), empty your bladder one last time into the orange container.
5. **ATTENTION:** Make sure the lid is tightly screwed onto the orange plastic container. Mix the contents in the container vigorously for one timed minute. It is **VERY IMPORTANT** to mix the chemicals in the sponge (located in bottom of collection container) with the urine. Good mixing insures accurate test results **AND MINIMIZES THE CHANCE OF HAVING TO RECOLLECT THE 24-HOUR SPECIMEN.**
6. Carefully fill the two plastic specimen vials with urine collected in the orange collection container within 2 to 4 hours. Fill and cap specimen vials one at a time. Be sure to replace the lid on the first specimen vial before removing the lid on the second vial to avoid cross contamination.
7. Cap both specimen vials tightly; write your **FULL NAME, SOCIAL SECURITY NUMBER, and YOUR WEIGHT** (in pounds) on each vial. Now place the vials into the zip-lock bags provided (do not remove absorbent sheet). Place back in box provided. The remaining urine volume in the orange container can be discarded.
8. Return vials within the closed box to the laboratory as soon as possible.
9. **Note:** Do not use regular brown 24 hour urine container for this collection. The URORISK test is made specifically for use with the URORISK container and plastic vials. Any variation from the use of the packaged materials can result in incorrect results.

Any questions related to the proper collection should be referred to the Laboratory at **(253) 968-1930**. Exercise caution when handling contents of URORISK kit. Complete Material Safety Data Sheet for URORISK kit additives available from Laboratory upon request.

APPENDIX C-8 PATIENT INSTRUCTIONS HAND-OUT

CLEAN CATCH URINE SAMPLE COLLECTION

Female Instructions

1. Do not touch the inside of the sterile urine collection cup with fingers or body during the collection process.
2. Wash hands with soap and warm water.
3. Spread the labia (folds of skin) apart with one hand and wipe with the moist towelette provided. Wipe from front to back.
4. Continue holding the labia apart. As you start to urinate, allow a small amount of urine to flow into the toilet bowl. This clears the urethra of contaminants.
5. After the urine stream is well established, urinate into the collection cup. Once an adequate amount of urine fills the collection cup (at least $\frac{1}{2}$ full), remove the cup from the urine stream.
6. Pass any remaining active urine flow into the toilet.
7. Screw the lid on the urine cup tightly, once again taking caution not to touch the inside of the cup and/or lid. Deliver the sealed urine container to the Customer Service Tech at the front desk.

Male Instructions

1. Do not touch the inside of the sterile urine collection cup with fingers or body during the collection process.
2. Wash hand with soap and warm water.
3. If uncircumcised, retract foreskin.
4. Wipe the end of penis with moist towelett provided.
5. As you start to urinate, allow a small amount of urine flow into the toilet bowl. This clears the urethra of contaminants. Do not touch the inside of the sterile urine collection cup with fingers or body.
6. After the urine stream is well established, urinate into the cup. Once an adequate amount urine fills the collection cup (at least $\frac{1}{2}$ full), remove the cup from the urine stream.
7. Pass any remaining active urine flow into the toilet.
8. Screw the lid on the urine cup tightly, once again taking caution not to touch the inside of the cup and/or lid. Deliver the sealed urine container to the Customer Service Tech at the front desk. Questions related to proper specimen collection should be referred to the laboratory at (253) 968-1930.

APPENDIX D-1 BLOOD CULTURE COLLECTION PROCEDURAL INSTRUCTIONS

Blood Culture Collection Procedural Instructions

(From Infection Control Committee Guidelines Policy 5.3, Effective: 8/2008)

General

- All individuals performing blood culture collection must have documentation of competency verification prior to performing the procedure.
- Specimens should be drawn PRIOR to antibiotic therapy, whenever possible
- Blood cultures are not to be drawn from a line except:
 - If the intravascular device is suspected as the cause for a bloodstream infection
 - If BC is obtained from a line, a set should also be obtained from a peripheral site
 - **Never** draw a blood culture from a stopcock

Aseptic Technique

- Poor collection technique can introduce organisms into blood culture bottles.
- Blood culture collection is done under aseptic technique; hand hygiene and glove usage is mandatory.
- Attention should be paid to maintaining sterility of the blood culture bottle tops as well as, preventing recontamination of the venipuncture site.
- Always collect blood cultures first to avoid contamination when other tube specimens are collected at the same site

Collection Procedure

- Gather the required equipment:
 - CHG skin prep (ChloraPrep One-Step skin antiseptic product)
 - **DO NOT** use CHG skin prep on children <2months of age
 - If CHG skin prep is contraindicated use 1% betadine
 - BacT/Alert Aerobic Culture Bottle (Blue cap) & BacT/Alert Anaerobic Culture Bottle (purple cap)
 - Safety domes
 - Vacutainer Brand Safety-Lok Blood Collection Kit
 - 70% Isopropyl Alcohol Pad (one for each blood culture bottle)
- Site Selection:
 - Blood cultures should be drawn in sets, one aerobic bottle and one anaerobic bottle. Sets should be drawn at intervals and from different sites, determined by the clinical circumstances.
 - Blood should be obtained from the peripheral venous system whenever possible.
 - Drawing from an Intravascular line should only be done if peripheral lines are unobtainable or when a catheter-related sepsis is suspected.
 - If a catheter-related sepsis is suspected draw one set of cultures from a peripheral stick and another set other from the suspected line.
- Site Preparation (skin antisepsis):
 - If the patient is visibly dirty, wash the intended site with soap and water *prior* to site preparation
 - ✓ CHG skin prep (ChloraPrep One-Step skin antiseptic). **DO NOT** use ChloraPrep on children <2months of age
 - ✓ Perform hand hygiene and don gloves
 - ✓ Wipe tops of the blood culture bottles with 70% alcohol and allow to air dry
 - ✓ Prep the skin with CHG or Betadine
 - ✓ **DO NOT** palpate the prepped site

- Blood Culture Bottle Preparation
 - Bottom of bottles must be dark gray-green, otherwise DO NOT USE
 - Do not use expired bottle
 - Remove cap just before use; use separate 70% isopropyl alcohol wipes to disinfect each bottle
 - Take precautions not to contaminate the tops after disinfected.
- Collection of the Blood Sample
 - After antiseptic agent dries, aseptically draw the optimal volume through a Safety-Lok Blood Collection Set
 - Specimen Volume:
 - ✓ Infants: 0.5 to 3.0 ml per bottle
 - ✓ Children: 2.0 to 5.0 ml per bottle
 - ✓ Adults: 10 to 12 ml per bottle (so not exceed 12 ml)
 - Use of a syringe is discouraged.
 - ✓ If a syringe is used, a safety device must be used when transferring blood.
 - ✓ Expel all air from syringe before transferring blood into the blood culture bottle (Aerobic first)
 - Aerobic and Anaerobic cultures are normally both collected from each site

Specimen Labeling Requirements

- When labeling bottle, do not cover any part of the printed barcode or the sensor located in the base of the blood culture bottle.
- Specimen Labeling Requirements
 - Complete Name
 - Date of birth
 - SSN
 - Collection date, time, site
 - Set Number (if set is ordered)
 - Phlebotomist initials

Specimen Transport

- Transport the bottles to the laboratory at room temperature within one hour of collection.

Other

- The HCP or HCP on call, RN will be notified of any positive results.
- All organisms will be identified and sensitivity performed, if applicable.
- Negative reports will be resulted in 5 days
- See each respective microbiology test for additional information, listed in the Laboratory Test Information Guide: Part 1.

APPENDIX E-1 MADIGAN REGULATION 40-138 COMMUNICATION OF CRITICAL RESULTS OF TESTS
AND DIAGNOSTIC PROCEDURES PERFORMED BY THE LABORATORY

Madigan Regulation 40-138

DEPARTMENT OF THE ARMY
MADIGAN HEALTHCARE SYSTEM
Tacoma, Washington 98431-1100

Madigan Regulation
Number 40-138

26 June 2012

Medical Services
COMMUNICATION OF CRITICAL RESULTS OF TESTS AND DIAGNOSTIC PROCEDURES
PERFORMED BY THE LABORATORY

1. Purpose. This regulation prescribes policies and procedures for rapid communication of critical results of tests and diagnostic procedures performed by the laboratory in order to provide the responsible licensed caregiver these results within an established time frame so that the patient can be promptly treated.
2. References. Required and related publications and prescribed and referenced forms are listed in Appendix A.
3. Explanation of Abbreviations and Special Terms. Abbreviations and special terms used in this regulation are explained in the Glossary.
4. Responsibilities.
 - a. Chief, Department of Pathology and Area Laboratory Services (DPALS). Establishes laboratory procedures for identification, verification and reporting of critical results of tests and diagnostic procedures.
 - b. Staff Pathologists, Pathology Residents, Laboratory Supervisors and Testing Personnel. Become thoroughly familiar with the critical results list and the procedures developed for rapid communication.
 - c. Licensed Care Givers (Physicians, Dentists and Mid-Level Practitioners) and Nurses. Become thoroughly familiar with the procedures developed for rapid communication of critical results of tests and diagnostic procedures performed by the laboratory.
 - d. Laboratory Supervisors. Develop internal policies and procedures for verification of critical results.
 - e. The Laboratory's Composite Health Care System (CHCS) Computer Specialists. Ensures CHCS files are properly edited to reflect currently accepted critical results.
5. Policy and Procedures.
 - a. General.
 - (1) Critical results are those results that may require rapid clinical attention to avert significant patient morbidity or mortality.

(2) All laboratory critical findings will be communicated directly to the responsible licensed caregiver via telephone or in person. If a test is ordered STAT, then result must be certified within 60 minutes of specimen receipt regardless of outcome. Services providing and receiving test results will develop internal Standing Operating Procedures for timely notification of the licensed caregivers and proper documentation of calls.

b. Reporting and Documentation by Laboratory Personnel. For all critical results (as defined in Tables 1-6), it is the responsibility of the appropriate individual (person interpreting or conducting the test such as the laboratory technologist/technician or pathologist) to report the findings and document notification in CHCS to include:

- (1) The date and time of test result verification.
- (2) Name and credentials of the person receiving the report.
- (3) Date and time the report was given.
- (4) Initials of staff reporting the result(s).
- (5) That the result(s) was "read back" (to ensure that the correct patient and result(s) was communicated).

c. Receiving and Documentation by Nursing Staff. If a licensed nurse (registered nurse (RN)/licensed practical nurse (LPN)) receives the result(s) to relay to a provider, it is his/her responsibility to document notification in Essentris, CHCS or AHLTA to include:

- (1) The date and time result was received from the laboratory.
- (2) Name of the provider receiving the report.
- (3) Date and time the report was given to the provider.
- (4) Initials of staff reporting the result(s).
- (5) That the result(s) was "read back" (to ensure that the correct patient and result(s) was communicated).

d. Emergency Department (ED) Test Results. The laboratory must call the ED within 30 minutes of test result verification. Call and ask for a Staff Physician. If a Staff Physician is unavailable then request to speak with the ED Charge Nurse. The ED Charge Nurse will then notify the provider within 30 minutes of test result receipt. All notifications must be documented as required in paragraph 5b and 5c.

e. Inpatient Test Results. The laboratory must call the ward within 30 minutes of test result verification. Request to speak with the RN caring for the patient or the Charge Nurse and give the critical result(s). The RN will

then notify the ordering provider or provider on call within 60 minutes of test result receipt. All notifications must be documented as required in paragraph 5b and 5c.

f. Outpatient Test Results.

(1) During Duty Hours. Call the ordering provider of the critical result(s) by telephone or pager and report the result(s) to the provider. If unable to contact the provider within 15 minutes of test result verification, then call the clinic and request to speak with the Triage Nurse or call the Live Nurse on Line. Report the critical result(s) to the licensed nurse (RN/LPN) within 30 minutes of test result verification. The licensed nurse will then notify the ordering provider or provider on call within 60 minutes of test result receipt. All notifications must be documented as required in paragraph 5b and 5c.

(2) After Duty Hours. Call the ordering provider or provider on call by telephone or pager and report the critical result(s) to the provider. If unable to contact the provider within 15 minutes of test result verification then refer to Appendix B for further instructions. Notification to a licensed nurse (RN/LPN) must not exceed 30 minutes of test result verification. Notification to a provider by the licensed nurse (RN/LPN) must not exceed 60 minutes of test result receipt. All notifications must be documented as required in paragraph 5b and 5c.

g. Outlying Health Clinic Test Results.

(1) During Duty Hours. Contact the outlying clinic labs within 30 minutes of test result verification and they will contact the ordering provider, provider on call or the licensed nurse (RN/LPN) caring for the patient within 60 minutes of test result receipt. All notifications must be documented as required in paragraph 5b and 5c.

(2) After Duty Hours. Call the ordering provider or provider on call by telephone or pager and report the critical result(s) to the provider. If unable to contact the provider within 15 minutes of test result verification then refer to Appendix B for further instructions. Notification to a licensed nurse (RN/LPN) must not exceed 30 minutes of test result verification. Notification to a provider by the licensed nurse (RN/LPN) must not exceed 60 minutes of test result receipt. All notifications must be documented as required in paragraph 5b and 5c.

h. Contact Information. On-call rosters posted in the Madigan Health Care System (Madigan) SharePoint site are updated daily. Madigan clinical services/sections and the Madigan Outlying Health Clinics are required to update/verify the phone and pager numbers posted in the Madigan Pager Director, Madigan Staff Directory and the Madigan On-Call Pager Roster.

i. Compliance. DPALS will measure and assess compliance from the time of test result verification to the time results are communicated to the provider

Madigan Regulation 40-138

26 June 2012

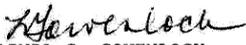
or RN monthly. The Department of Nursing will measure and assess compliance from the time results are received by nursing staff to the time results are communicated to the provider quarterly. Compliance reports will be submitted to the Patient Safety Office.

The proponent of this publication is the Department of Pathology. Users are invited to send comments and suggested improvements to the Chief, Department of Pathology.

FOR THE COMMANDER:

OFFICIAL:

THOMAS S. BUNDT
Colonel, MS
Chief of Staff


LINDA S. GOWENLOCK
Major, AN
Interim Executive Officer

DISTRIBUTION:
Electronic Bulletin Board

Table 1
Clinical Chemistry

(NOTE: it is not required to call Nephrology Clinic or Dialysis for any critical values concerning PHOSPHORUS, BUN or CREATININE. However, it is required to call any POTASSIUM value that is critical.)

TEST	UNITS	CRITICAL LOW	CRITICAL HIGH
AMMONIA	umol/L	NONE	Greater than 80
BUN	mg/dL	Less than 3	Greater than 80
CALCIUM	mg/dL	Less than 6.6	Greater than 13
CHLORIDE (CL)	mmol/L	Less than 80	Greater than 120
CO2	mmol/L	Less than 10	Greater than 40
CREATININE	mg/dL	Less than 0.2	Greater than 5.0
CSF PROTEIN	mg/dL	NONE	Greater than 75
GLUCOSE (ADULT)	mg/dL	Less than 45	Greater than 450
GLUCOSE (NEONATAL)	mg/dL	Less than 30	Greater than 300
LACTATE	mmol/L	NONE	Greater than 3.4
MAGNESIUM	mg/dL	Less than 1.0	Greater than 4.9
OSMOLALITY (SERUM)	mOsm/kg	Less than 250	Greater than 326
PHOSPHORUS	mg/dL	Less than 1.2	Greater than 8.0
POTASSIUM	mmol/L	Less than 2.8	Greater than 6.2
SODIUM	mmol/L	Less than 120	Greater than 160
TOTAL BILI	mg/dL	NONE	Greater than 15
URIC ACID	mg/dL	NONE	Greater than 13
NEONATAL BILI *	mg/dL	NONE	Greater than 12

* Baby must be less than 14 days old - No exceptions

Table 2
Blood Gases

TEST	UNITS	CRITICAL LOW	CRITICAL HIGH
pH		Less than 7.2	Greater than 7.6
pCO2	mmHg	Less than 20	Greater than 70
PO2	mmHg	Less than 45	None
Ionized CA ⁺	mmol/L	Less than 0.8	Greater than 1.6

Table 3
Therapeutic Drugs

TEST	UNITS	CRITICAL LOW	CRITICAL HIGH
ACETAMINOPHEN	mcg/mL	NONE	Greater than 200
CARBAMAZEPINE (Tegretol)	mcg/mL	NONE	Greater than 15
DILANTIN (Phenytoin)	mcg/mL	NONE	Greater than 20
DIGOXIN	ng/mL	NONE	Greater than 2.5
GENTAMICIN	mcg/mL	NONE	Peak: Greater than 12 Trough: Greater than 2
PHENOBARB	mcg/mL	NONE	Greater than 40
SALICYLATE	mg/L	NONE	Greater than 300

Table 3
Therapeutic Drugs (Continued)

TEST	UNITS	CRITICAL LOW	CRITICAL HIGH
THEOPHYLLINE	mcg/mL	NONE	Greater than 20
VALPROIC ACID	mcg/mL	NONE	Greater than 150

Table 4
Hematology

TEST	UNITS	CRITICAL LOW	CRITICAL HIGH
WBC COUNT	10 ⁹ /L	NONE	Greater than 30.0
HEMOGLOBIN	gm/dL	Less than 7.0	Greater than 20
HEMATOCRIT	%	Less than 21.0	Greater than 60
PLATELETS	10 ⁹ /L	Less than 40.0	NONE
NEUTROPHIL ABSOLUTE #		Less than 1.0 (birth to 7days and over 8yrs) Less than 0.8 (7days to 8yrs)	NONE
CSF WBC	WBC/cmm	NONE	Greater than 9
PT	seconds	NONE	Greater than 38.2
INR		NONE	Greater than 4.00
PTT	seconds	NONE	Greater than 119
FIBRINOGEN	mg/dL	Less than 100	NONE

Table 5
Microbiology Critical Results

CSF	CRITICAL RESULT
GRAM STAIN	Positive for organisms
CULTURE	Positive
ANTIGEN TEST	Positive for any of the meningitis antigens: <ul style="list-style-type: none"> - Neisseria meningitides - Streptococcus pneumonia - Group B Streptococci (Streptococcus agalactiae) - Haemophilis influenza - Cryptococcus neoformans
AMNIOTIC FLUID	CRITICAL RESULT
GRAM STAIN	Positive for gram positive cocci in pairs and short chains, or gram positive rods (not in chains)
CULTURE	Positive for Group B β-hemolytic Streptococci (<i>Streptococcus agalactiae</i>) or <i>Listeria monocytogenes</i>

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Table 5
Microbiology Critical Results (Continued)

BLOOD CULTURE	CRITICAL RESULT
GRAM STAIN OF POSITIVE BOTTLE	Visible organisms on gram stain

BLOOD (EIA/SMEAR)	CRITICAL RESULT
MALARIA	Positive

Table 6
Molecular Diagnostics Critical Results

CSF (PCR)	CRITICAL RESULT
HSV	Positive
ENTV	Positive
VZV	Positive
CMV	Positive

BLOOD (PCR)	CRITICAL RESULT
HSV	Positive (NEONATES ONLY)
MALARIA	Positive

Appendix A
References

Section I
Required Publications

This section contains no entries

Section II
Related Publications

The Joint Commission E-dition

National Patient Safety Goal NPSG.02.03.01
Report Critical Results of Tests and Diagnostic Procedures on a Timely Basis

College of American Pathologists Checklist

Section III
Prescribed Forms

This section contains no entries

Section IV
Referenced Forms

This section contains no entries

Appendix B
Critical Value Call Rosters

B-1. Contact listed ordering provider (<https://portal.wrmc.amedd.army.mil/mamc/Pages/Directory.aspx> for pager listing). If no pager is listed, contact Communication Center and request the provider's pager number.

B-2. If there is no listed provider, or the provider is not available, see the critical call roster at: <https://portal.wrmc.amedd.army.mil/mamc/pathology/CRITICAL%20VALUE%20CALL%20ROSTER/Critical%20Result%20Call%20Roster.pdf>

B-3. Contact Department Chief (pager number available through Communications Center) if unable to notify Department's on-call provider.

B-4. Contact Madigan Healthcare System Medical Officer of the Day.

Glossary

Section I
Abbreviations

CHCS
Composite Health Care System

DPALS
Department of Pathology and Area Laboratory Service

ED
Emergency Department

LPN
Licensed Practical Nurse

Madigan
Madigan Healthcare System

RN
Registered Nurse

Section II
Terms

Critical Results
Test results and values beyond the normal variation with a high probability of a significant increase in morbidity and/or mortality in the foreseeable future and require rapid communication of results for determination of intervention

Mid-Level Practitioners
Nurse Practitioners, Certified Registered Nurse Anesthetists, Clinical Nurse Specialists, Homeopathic Physicians, Medical Psychologists and Physician Assistants licensed, registered or otherwise permitted to dispense a controlled substance in the course of professional practice

Responsible Licensed Caregiver
Usually the attending physician but may be another licensed independent practitioner or, in certain situations, a registered nurse who is authorized to modify treatment based on a protocol

Result Verification
Process of checking the accuracy (trueness) of the test result

STAT
A short form of the Latin word *statim*, which means immediately. Turn-around time for STAT is within one hour.

APPENDIX E-2 MADIGAN HEALTHCARE SYSTEM LABORATORY CRITICAL VALUE NOTIFICATION
PROCESS FLOWCHART