

Department of Laboratory Medicine Fredericton and Upper River Valley Area

# Laboratory User Manual

Version 40.0

June 2001

(Revised 2003, Revised March 2008, Revised December 2009, Revised May 2010, Revised July 2010, Revised September 2010, Revised December 2010, Revised January 2011, Revised March 2011, Revised July 2011, Revised May 2012, Revised January 2013, Revised March 21, 2013, Revised July 2014, Revised February 2015, Revised June 2015, Revised November 2015, Revised January 2016, Revised May 2016, Revised August 2016, Revised November 2016, Revised March 2017, Revised June 2017, Revised August 2018, August 2018, December 2018, March 2019, May 2019, July 2019, October 2019, December 2019, February 2020, April 2020, June 2020, September 2020, October 2020, December 2020, February 2021, April 2021, July 2021, October 2021, January 2022)

Summary of changes listed on the last page(s) of manual

Blue indicates a hyperlink To search document quickly – press <u>Ctrl</u> and <u>F</u> at the same time and enter key word(s) to search

 This is a CONTROLLED document. LAB-3-ADM-LUM-00001

 Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use

 Laboratory User Manual
 Version 40.0
 Page 1 of 242
 Effective Date: January 24, 2022

#### TABLE of CONTENTS

**NOTES:** <u>Blue</u> indicates a hyperlink

To search document quickly – press <u>Ctrl</u> and <u>F</u> at the same time and enter key word(s) to search. Laboratory Tests - Alphabetical list TEST\_TABLE Section 1: General Laboratory Information Senior Staff and Telephone Numbers Laboratory and Specimen Collection Hours **Clinical Laboratory Services** Autopsy Services Clinical Emergency Test List Patient/Client Identification of Laboratory Specimens **Requisitioning of Laboratory Tests** Verbal Requests Specimen Labeling **Faxing Requests Utilization Rules** Foreign Residents Agreement Submission of Coded Patient Samples Specimen Collection Order of Draw **Specimen** Collection Containers Transportation of Specimens Instructions for packaging specimens according to temperature requirements Pneumatic Tube System **Rejection** of Specimens Reporting of Laboratory Tests **Critical Values Research** Activities Section 2: Clinical Chemistry Blood Collection Tube Requirement for Chemistry Lab MPA Pre-Analytical Instrument at DECRH **Adrenocortical Function Tests** ACTH (Adenocorticotropic Hormone) ACTH Stimulation Test Calcitonin Cortisol - Serum Cortisol - Urinary Free Dehydroepiandrosterone Sulphate (DHEAS) **Dexamethasone** Suppression Tests Testosterone (Total and Bioavailable) - Clinical Uses Withdrawal of 17-Hydroxycorticoids and 17-Ketosteroids **Captopril Stimulation Test** Creatine Kinase Isoenzymes Gastrin Challenge Test **Gestational Diabetic Screening Glucose Tolerance Tests** Information Procedure Interpretation Growth Hormone (Somatotropin) Assays Single Fasting Growth Hormone Assay Growth Hormone Challenge (Arginine Stimulation) Test

Section 2: Clinical Chemistry (continued) Growth Hormone-Glucose Suppression Test Lactose Tolerance Test Occult Blood Collection Instruction Saline Suppression Test Thyroid Autoantibodies Anti-thyroperoxidase Antibody (TPOAb) Anti-thyroglobulin Antibody (TGAb) TSH Receptor Autoantibodies (TRAb) Thyrotropin Releasing Hormone (TRH) Stimulation Test Toxicology and TDM Acetominophen Poisoning Ethanol Digoxin/Quinidine Interaction and Digoxin Drug Interferences Theophylline Blood Sampling for Therapeutic Drug Monitoring (TDM) Table: Therapeutic Drug Information Unit Conversion for Some Drugs and Toxic Agents Urine, 24 Hour Specimen - Collection Instructions Urine, Urinalysis Water **Deprivation** Test, Overnight Section 3: Anatomical Pathology **Tissue Specimens - Collection Instructions** Autopsy Services Section 4: Transfusion Medicine **Blood** Products Administration Resources on Skyline Administration of Blood Products Policy Informed Consent **Collecting Specimens for Transfusion Medicine** Autologous and Directed Blood Donation Turn around Times for Tests and Blood Product Preparation Blood Products Routinely Kept in Inventory by Facility Blood Products Available by Order from CBS Health Canada Special Access Program (SAP) Ordering Blood Products and Special Requirements Intravenous Immune Globulin (IVIG) **Electronic Crossmatch** To Check if Blood is "Ready" for a Patient Using Meditech PCI How Long is the Specimen Good For? **Crossmatched Blood Cancellations Emergency/Unmatched Blood Request Neonatal Blood Requests EMERGENCY** Neonatal Requests **ROUTINE Neonatal Requests** ABO and Rh Compatibility Charts Sign Out of Blood Products **Blood Product Arrival** Sign-Out of Blood Products after LAB hours (HDP and OPH) Emergency Unmatched O Neg Blood Release after LAB hours (HDP and OPH) Transfusing Blood Products at Community Health Centers Transfusion Adverse Event/Reaction Investigation **Transfusion Reaction Chart** Other Reactions That May Occur Or Be Observed Massive Transfusion Protocol (MTP)

**Complications of Massive Transfusion: Blood and Blood Component Resources** 

#### Section 5: Microbiology Specimen Maximum Delay In Transport Turn Around Times – Microbiology In House testing **Sputum Collection Patient Instructions** Urine collection Patient Instructions for Microbiology testing **Collection of Blood Cultures** Fecal Culture and Parasite Examination On Inpatients Hospitalized > 3 Days Collection of specimens (swabs) Creutzfeldt-Jakob Disease (CJD); Other Classic TSEs Section 6: Haematology Complete Blood Count (CBC) Flow Cytometry Section 7: Cytology Cytology\_Sputum Collection Patient Instructions Cytology\_Urine Collection Patient Instructions

Section 8: Laboratory Tests - Alphabetical list

Key to Test Table

**TEST\_TABLE** - Alphabetical List

### Section 1: General Laboratory Information Senior Staff and Telephone Numbers

REGIONAL MEDICAL DIRECTOR	
Dr Yu Chen	452-5443
FREDERICTON & UPPER RIVER VALLEY AREA ADMINISTRATIVE DIRECTOR	
Paula Campbell	452-5483
FAX	443-2618
STAFF PATHOLOGISTS	
Dr John Morris	452-5056
Dr Sen Yan	447-4446
Dr Alexandra Pettit	452-5474
Dr M. Fawaz Dawamneh	452-5387
Dr Salim Shawesh	452-5460
Dr Yu Shi	452-5461
Dr Ron Francis	452-5979
Dr Thomas Shi	452-5911
Dr Jeremv Daniels	452-2102
CLINICAL CHEMISTRY	
Dr Yu Chen, Medical Biochemist.	452-5443
Martin McNally, Manager	452-5197
Urinalysis Laboratory	452-5441
General Inquiries	452-5435
FΔX	452-5422
CYTOGENETICS Resource Technologist	452-5490
	402 0400
Deborah Hale, Manager	152-5188
General Inquiries	452-5467
	452-5407
Ludy Appie Technologist (appointmente)	452 5007
	452-5007
	450 5440
Jeraiyn Malaley, Manager	452-5449
	452-5451
	452-5417
ANATOMICAL PATHOLOGY	450 5470
Julie Landers, Manager	452-5476
Laboratory	452-5478
General Inquiries (Reports)	452-5485
FAX	443-2168
LABORATORY INFORMATION SERVICES	
James Whitman, LIS Coordinator	452-5480
MICROBIOLOGY	
Dr. Ian Stuart, Clinical Microbiologist	452-5254
Shelley Dupuis, Manager	452-5464
General Inquiries	452-5465
Fax	452-5889
MORGUE	452-5495
POINT OF CARE TESTING (POC)	
Susan Lake (POC Coordinator)	443-2106
QUALITY, SAFETY and PROCESS MANAGEMENT	
Lauren Graham. QSPM Coordinator.	447-4323
SPECIMEN COLLECTION. PHLEBOTOMY	
Rachel Fullarton, Manager	452-5381
General Inquiries	452-5262
TRANSFUSION MEDICINE	
Tim Lea Manager	452-5453
General Inquiries	452-5454
	1/3_2111

Dr. Everett Chalmers Regional Hospital (DECRH) Laboratory			
Transfusion Medicine,	Monday - Friday	0800 - 1600	Full Service
Hematology & Clinical Chemistry	Monday - Friday	1600 - 0800	STAT Service
on nour one mony	Weekends & Holidays	24 hours	STAT Service
Specimen Collection Phlebotomy –	Monday - Friday	0615 - 1430	Full Service
Inpatients	Monday - Friday	1430 - 2230	STAT Service
	Weekends & Holidays	0630 - 2230	STAT Service
Specimen Collection Phlebotomy – Outpatients	Monday - Friday	0700 - 1600	Full Service
Cytogenetics Resource Technologist	Monday - Friday	0800 - 1600	Full Service
Cytology	Monday - Friday	0700 - 1615	Full Service
Flow Cytometry	Monday - Friday	0800 - 1600	Full Service
Anatomical Pathology	Monday – Friday	0630 – 1630	Full Service
	Monday – Friday	1630 - 0630	Pathologist On – Call
	Weekends	24 hrs	Pathologist On – Call
Laboratory Information Services (LIS)	Monday - Friday	0800 - 1600	Full Service
Microbiology	Monday - Friday	0800 - 1600	Full Service
	Monday - Friday	1600 - 2000	Reduced/Emergency Service
	Monday - Friday	2000 - 0800	Technologist on-call
	Weekends & Holidays, except Christmas	0800 - 1600	Reduced/Emergency Service
	Weekends & Holidays	1600 - 0800	Technologist on-call
	Christmas Day	0000 - 2400	Technologist on-call
Morgue	Monday - Friday	0800 -1600	Full Service
	Saturdays & Holiday Mondays	0800 - 1200	Pathologist on-call
Satellite Site Facility Laboratories			
Upper River Valley Hospital	Monday - Friday	0630 - 1600	Full Service
(URVH) - Waterville	Monday - Friday	1600 - 0800	STAT Service
	Weekends & Holidays	24 hours	STAT Service
	Monday - Friday	0630 - 1530	Specimen collection
	Monday - Friday	0630 - 1600	Specimen drop-off
Oromocto Public Hospital (OPH) -	Monday - Friday	0700 - 1600	Full Service
Oromocto	Monday - Friday	1600 - 2400	STAT Service (Inpatients + ER)
	Monday - Friday	2400 - 0700	Technologist on-call
	Weekends & Holidays	0700 - 2300	STAT Service (Inpatients + ER)
	Weekends & Holidays	2300 - 0700	Technologist on-call
Hotel Dieu St. Joseph	Monday - Friday	0700 -1530	Full Service
(HDSJ/HDP) – Perth Andover	Monday - Friday	1530 - 2300	STAT Service (Inpatients + ER)
	Monday – Friday	2300 - 0700	Technologist on-call
	Weekends	0700 -1500	STAT Service/Technologist on call after 1500 (Inpatients + ER)
Tobique Valley Community Health Center (TVCHC) – Plaster Rock	Monday – Friday	0800 - 1600	Specimen Collection Service
Queens North Community Health Center (QNCHC) - Minto	Monday - Friday	0730 - 1530	Specimen Collection Service

Laboratory & Specimen Collection Hours

### **Clinical Laboratory Services**

#### **ROUTINE SERVICES**

- Routine services are managed according to the schedule of tests as set forth in this manual with test results being reported as soon as possible. In some cases, batching of tests is necessary for the most efficient use of resources. Most tests ordered as routine are performed the same day if received by the laboratory before 1500 hours or as otherwise specified in this manual.
- *Point of Care Testing* falls under the direction and supervision of the laboratory, as mandated by *Standards for Hospitals in New Brunswick, Section 7.* For information pertaining to POC testing please contact the coordinator at 443-2106.

#### WEEKEND AND HOLIDAY SERVICES

• The number of working staff is reduced on Saturdays, Sundays and holidays. Test requests should be limited to those tests on the "Clinical Emergency Test List" (See list on page 9 of this manual)

#### **EMERGENCY SERVICES**

- Emergency services are available on a 24 hour basis, seven days a week.
- An emergency or "STAT" test is one whose results will immediately determine or influence a therapeutic decision. When a test is ordered as an emergency during regular working hours, the routine work is immediately deferred in favor of the emergency test. It is, therefore, necessary to exercise a great deal of discrimination before the test is labeled as an emergency in order to avoid unnecessary disruption of routine work and possible increased costs.
- Specimens that require emergency testing must be accompanied by a requisition/order on which the words "Emergency or STAT" are clearly indicated. The properly labeled specimen and requisition must be delivered immediately to the laboratory and given to a technologist in the appropriate section.
- Only those tests on the Emergency Test List are considered clinical emergency tests. Physicians must consult with the head of the appropriate department when requesting tests as emergencies that are not found on this list.
- Contact information of technologists and pathologists on standby duty will be provided on a weekly basis to Admitting, Operating Room, Administrative Officers and Switchboard as well as all laboratory departments.
- Urgent tests requiring more prompt processing than the usual routine service format, but on which an immediate report is not required should be marked "ASAP". Such tests are given priority over routine procedures but are not ordinarily drawn and processed immediately. The time of completion depends upon the number of tests so ordered.

#### **REFERRAL SERVICES**

 Certain tests are referred to external reference laboratories when it is not practical to perform such tests on site. The turnaround time of these test results depends on the organization of the laboratory to which the test is sent. Tests referred are so indicated in "Section 7: Laboratory Tests – Alphabetical List".

#### **AUTOPSY SERVICES**

- Regular hours of operation are Monday to Friday, 0800 to 1600 hours. Morgue staff are on-call Saturdays and holiday Mondays, 0800 to 1200 hours. During regular hours, they are responsible for receiving decedents from Coroners and funeral homes as well as releasing bodies to funeral homes. The Administrative Officer/security staff are responsible for these duties outside of regular hours. All staff must ensure decedents are correctly identified (identification tag attached to the body, identification tag on outside of body bag, and identification on personal belongings), placed in a body bag of appropriate size and information shall be recorded in the Morgue Register, located in the admitting department.
- The DECRH laboratory provides autopsy services for hospitals in the Fredericton Area, as well as for the Department of Justice. Autopsies are performed on the same day providing the deceased and the consent form arrive by 1200 hours on Monday through Friday, and by 1000 hours on Saturdays and holiday Mondays.
- Autopsies are not performed on Sundays and single-day holidays occurring midweek, unless direct arrangements have been made between the coroner/attending physician and the pathologist.
- The pathologist on call must be contacted before the deceased is referred from hospitals outside the city of Fredericton. A consent form signed by the appropriate next of kin, or an appropriate coroner form, must accompany the deceased.

#### **PRIVATE AUTOPSIES**

- Autopsies may be performed at the family's request after consultation with the pathologist. The cost will be the family's responsibility.
- The fee for this service is \$1,500 and is to be paid at the business office before the autopsy begins. On Saturdays, when payment may be impossible, the laboratory will inform the accounting department who will bill the family the first of the next week.
- The report will be withheld until payment is confirmed.

Please refer to <u>Deceased</u> Patients section for more details pertaining to autopsies.

### Clinical Emergency Test List Fredericton & Upper River Valley Area Laboratories

**<u>ONLY</u>** the tests listed below are done on a "STAT" basis. The presumptive clinical diagnosis must be stated on all "STAT" (Emergency) test orders. If physicians have requests for tests <u>**not**</u> on this list, they must first consult with the appropriate laboratory section.

\* Spinal Fluids: after hours, contact the laboratory prior to obtaining specimen

Please Note: Tests not performed on site are referred to DECRH

Clinical Chemistry	<ul> <li>Ammonia</li> <li>Amylase (Pancreatic)</li> <li>Beta HCG (Quantitative)</li> <li>Bilirubin</li> <li>Blood Gases</li> <li>Calcium</li> <li>Cardiac Enzymes/Troponin T</li> <li>CO (Carbon Monoxide)</li> <li>CO<sub>2</sub> Content (Bicarbonate)</li> <li>Creatinine</li> <li>Electrolytes (Na, K, Cl)</li> <li>General Surgery Profile (GSP) includes Glucose, Creatinine, Albumin, Alkaline Phosphatase, ALT, Total Bilirubin, Na, K, Cl</li> <li>Glucose</li> <li>Ketones (beta hydroxybutyrate, BHB)</li> <li>Lactic Acid</li> <li>Osmolality</li> <li>Pro BNP</li> <li>Toxicology/Drug Overdose</li> <li>* Spinal Fluid (CSF)</li> <li>Urea</li> <li>Urinalysis</li> <li>Urine βHCG (Qualitative)</li> </ul>
Microbiology	<ul> <li>CSF: Gram stain and culture</li> <li>Tissue: Gram stain and culture</li> <li>OR Specimens: Gram stain and culture</li> <li>Rapid COVID/INFLU/RSV <u>if result cannot</u> wait until regular hours</li> <li>NOTE - Monday to Friday (2000 – 0800), Weekends &amp; Holidays(1600 0800): technologist must be contacted by either telephone or paging when emergency tests are ordered</li> </ul>
Haematology	<ul> <li>Activated Partial Thromboplastin Time (APTT)</li> <li>Prothrombin Time (PT)/ INR</li> <li>CBC with 5-part Differential</li> <li>D-Dimer Test</li> <li>Fibrinogen</li> <li>Monotest</li> <li>Sedimentation Rate (for patients with presumptive diagnosis of temporal arteritis <u>only</u>)</li> <li>* Spinal Fluid (CSF)</li> </ul>
Transfusion Medicine	<ul> <li>Crossmatch &amp; preparation of blood products</li> <li>Group &amp; Screen</li> <li>Direct Antiglobulin Test</li> <li>Transfusion Reaction Investigation</li> <li>Rh Immune Globulin Workup (Antenatal for loss/termination, invasive procedure, traumatic event. Not for 28 week prophylaxis)</li> <li>Cord Blood Workup as required for <ul> <li>investigation of suspected hemolytic disease of the newborn</li> <li>RhIg eligibility (dayshift only) on Rh Negative mothers</li> </ul> </li> <li>Kleihauer-Betke Test: <ul> <li>as required for RhIg dosing (dayshift only)</li> <li>when requested for loss/termination, invasive procedure, traumatic event, suspect FMH</li> </ul> </li> </ul>

### **Patient/Client Identification of Laboratory Specimens**

All laboratory requisitions and associated specimens must be properly labelled and identified to ensure patient safety and quality laboratory services. Failure to correctly identify patients, specimens, ordering providers and test requests can lead to harmful incidents, such as inappropriate treatment, testing errors and privacy breaches.

#### Requisitions must be legible and include:

- 1. The first and last name of the <u>Ordering Provider</u> with ordering privileges, which include:
  - Physicians with ordering privileges that have been issued by the <u>College of</u> <u>Physicians and Surgeons of New Brunswick</u>
  - Nurse Practitioners within Horizon Health Network or working directly under a privileged Physician by the New Brunswick College of Physicians and Surgeons
  - Pharmacists within hospitals (not community-based pharmacists)
  - Midwives employed by Horizon Health Network
- 2. Sufficient information to identify the patient, which must include all of the following:
  - First and last name abbreviations and/or nicknames are not acceptable; middle names are encouraged when patients have common names
  - o Date of birth
  - o Sex
  - At least one of the following **<u>unique</u>** Identifier's:
    - NB Medicare or other provincial health card NOTE: Pictures or photocopies of Medicare Cards are not acceptable as per NB Medicare policy <u>YourNewBrunswickMedicareCard</u>. Exceptions are given to Nursing or Special Care Home residents
    - Medical Record, Permanent Patient/Client Record Number, or Chart Number (patient hospital identification number unique to the facility or area, such as PPRN)
    - ✤ RCMP or Military number
    - Correctional Institute identification number
    - Interim Federal Health Program Number (IFHP)
    - US Health Insurance

**NOTE:** Passport number, immigration or refugee number and drivers' licenses are only accepted if no other numbers or identification exists for the patient/client. If patient presents with no identification, the Patient Identification Confirmation Form <u>LAB-1237-18-F00004 Patient Identification Confirmation Form</u> must be complete, as per the <u>Regional Phlebotomy Manual</u>

- 3. Legibly written/denoted examination(s) requested
- 4. Specimen type (blood, urine, etc.)

#### Requisitions that accompany a specimen must also include:

- 5. The date and time the specimen was collected
- 6. Legible identification of who collected the specimen
- Clinical information relevant to the testing, as required (i.e. medication) NOTE: Speciality requisitions may require/request additional relevant clinical information
- **8.** Anatomic site of origin (as required)
- 9. Patient location (i.e. ER, Sexual Health)

#### Specimens that accompany a requisition must include:

- 1. <u>Each</u> specimen shall be labelled at the time and point of collection and in the presence of the patient.
- 2. Each firmly attached label shall contain:
  - the patient's first and last name (or unique code number in the case of anonymous testing);
  - <u>one unique numerical identifier</u> (e.g., the admission/identification or accession number);
  - the date of collection;
  - the time of collection;
  - anatomic site of origin (if/as indicated on the requisition);
  - the identity of the person who collected the specimen;

**NOTE:** For microsamples where the specimen tube is too small for the above information, an appropriate labelling system may be defined by the laboratory

**IMPORTANT:** Requisitions that do not contain the required minimum information will <u>not</u> be processed and specimens will <u>not</u> be retained for future testing. Refer to local area policy for specimen rejection processes, including the process for irretrievable specimens

All oral requests for additional requests will be documented on the Meditech requisition, including the date, time and the name of the person making the oral request. All oral requests on Out Patients require confirmation, either by a written requisition or a FAX copy of a requisition.

All patient identifying information on the healthcare card, requisition and/or wrist band must match

The words "Emergency or STAT" must be clearly indicated on the requisition for an emergency or STAT test

### **Division-specific Requisitions**

- Anatomical Pathology requisitions also require:
  - Type of tissue
  - Source of tissue
  - Patient's clinical history
  - Initials of the person completing the requisition
  - Operative findings
  - Tissue requisitions MUST be signed by the ordering physician
- Microbiology requisitions also require:
  - Source of specimen
  - Initials of the person completing the requisition
  - Currently used antibiotics
  - Clinical data pertinent to appropriate processing of specimen
- Transfusion Medicine requisitions/requests also require:
  - The phlebotomist's full signature and initials/collector ID must be on the requisition along with date and time.
  - Transfusion Medicine orders: All comments, directions and blood product requirements on the ordering requisition, including but not limited to the following must be entered under "Comments": Irradiated, FAX requests, specimens to be sent to another area for testing (i.e. SJRH Pre-admit etc.)
- Cytology requisitions also require:

**NOTE**: All Cytology specimens submitted on glass slides MUST HAVE the patient's full name and healthcare number written in pencil on the frosted end of the slide to identify that patient's specimen.

- **Cytology Gynecological** requisitions (Pap smears):
  - Date of patient's last menstrual period (LMP) or menstrual status
  - Specimen site
  - Initials of the person completing the requisition
  - Pertinent history, treatment and clinical findings (suspicious-looking cervix, palpable mass, etc.)
- Cytology Non-Gynecological requisitions (sputum, FNA's, fluids, etc.):
  - Pertinent patient history (previous Ca, x-ray findings, treatment, etc.)
  - Initials of the person completing the requisition
  - Specimen site
  - Clinical findings (haemoptysis, current cystoscopic impression, etc.)
- Cytogenetics requisitions:
  - Specific requisitions are available upon request from the Cytogenetic Resource Technologist @ 452-5490

### **Verbal Requests**

Verbal requests for additional laboratory tests/blood products must be properly documented as per **HHN-CL-GC013** <u>Verbal and Telephone Orders</u> policy. This document provides guidance and instruction for the procedure used in managing and documenting verbal requests for additional laboratory tests/blood products.

Verbal requests must be immediately followed by a paper or electronic requisition for both inpatients and out-patients. An Ordering Provider or their designate shall either :

- Forward a completed paper requisition to the Laboratory, or:
- Enter the additional test(s) into Meditech via Order Entry (OE) as an Add-On Test (AOT) NOTE: for TM add-on tests and/or blood products the mnemonic to use in OE is "BBKAOT"

#### **Order Entry Add-On Test process**

- 1. Upon a verbal request, Lab will instruct the Nursing Unit to order <AOT> in the LAB module under the appropriate patient account and enter all required Add-On Tests (BBKAOT in the BBK module for TM tests/blood products)
- 2. The "Test to be Added" line is free text, allowing multiple tests/blood products to be requested at once
- 3. Once the AOT/BBKAOT request is filed in OE, a requisition will print to the appropriate printer:
  - DECRH Chemistry Lab R3DCLASRL1
  - DECRH TM Lab TS84.5
  - HDSJ TSP05.5
  - OPH Z.LAB1A
  - URVH ULAB1C
- The AOT request will be immediately forwarded to an MLA/MLT in the appropriate division for follow-up. NOTE: The BBKAOT request will print in the DECRH TM Lab/site specific printer as listed above
- 5. The MLA/MLT receiving the request shall confirm the presence of an adequate and acceptable specimen
- 6. If an adequate/acceptable specimen is available, the MLA/MLT shall enter the additional test(s) in Meditech using the Edit Requisition routine and prints a new barcode label if necessary. The canned text <AOT> "[] was added to this requisition via Add-On Test request received from [] by [user] on [] @ []" must be entered in the Requisition "Comments" screen at this time
- 7. If an adequate/acceptable specimen is **not** available (NSQ, too old, improper collection tube, etc.), the MLT shall enter an order "AOTREJ" on the appropriate patient requisition and then result the test with "COMMENT" (the COMMENT result can also be chosen by using F9) and complete the result canned text that will pop up "Unable to comply with the request to "add-on" the following test(s): []. Reason: []. Called to []. @by [user] at []. @ AOT Order # []" and direct the Ordering Provider/Nursing Unit to submit an electronic or paper request for a new specimen

### **Specimen Labeling**

**Specimen Collector shall** Label all specimens <u>at the patient's side</u>, using computer generated labels, identification tags from paper requisitions or manually write on the specimen tubes. **NOTES:** 

- The preference is computer generated labels, but hand-written information on requisitions, labels and specimen containers is acceptable.
- All effort shall be made to ensure labels are available at the bedside during a trauma. Any variances to this process shall be documented.
- Anatomic Pathology: specimen container identification shall include the patient's full name, unique identifier, and the organ/tissue site. This includes bone marrow specimens.
- Cytology specimens: on glass slides must be labeled in HB pencil on the frosted end of the slide;
   Microbiology specimens:
  - if more than one specimen is collected and a Meditech label is not used, the source must be written on each specimen.

# Specimens which are mislabeled, unlabeled, or have insufficient identification will not be processed and a request will be made to recollect the specimen.

In cases involving an irreplaceable specimen testing will only proceed upon the authorization of the attending physician. A note of this authorization will appear on the lab report. **Permission to re-label specimens shall** <u>not</u> be granted for Transfusion Medicine specimens.

The Transfusion Medicine requisition must be used in verifying patient identification immediately prior to specimen collection at the patient's side. After collection the tubes are to be labeled and the requisition signed by the phlebotomist whilst still at the patient's side.

### **Faxing Requests**

Faxing of reports/results will follow <u>HHN-IM-003 Confidential Information Sharing</u> and be restricted to the following priority requests:

- o STAT
- o Urgent
- Medically necessary priority requests (situations where patients are awaiting immediate treatment)

All other requests for faxing will not be accommodated. All patient results are available in the local electronic Hospital Information System, provincial Electronic Health Record (EHR) and Area Medical Records Department

Test	Utilization Rule	Notes
Anti-Mullerian Hormone	Order rule	If being ordered by GP only please
		verify order (predominantly ordered
		by OB/GYN or fertility specialists)
Apolipoprotein B	Frequency limitation	Limited to 6 weeks
AST (SGOT)	Order rule	AST not routinely performed
Bence Jones Protein	Frequency limitation	Limited to 6 weeks
BNP (proBNP)	Frequency limitation	BNP available every 6 weeks for
		outpatients and every 7 days for ED
		and inpatients
BUN (Urea)	Order rule	BUN not ordered in conjunction with
		creatinine unless from dialysis,
		specialist or pre-op
CA 125	Frequency limitation	Limited to yearly
CA19-9	Frequency limitation	Limited to yearly
Calprotectin (fecal)	Frequency limitation	Limited to every 3 days
CEA (carcinoembryonic	Frequency limitation	Limited to yearly
antigen)		
Chlamydia/GC PCR-	Specimen limitation	If both a cervix and urine received,
female patients	-	only the cervix will be performed
Clostridium difficile	Frequency limitation	Not performed if positive in the last
		14 days
ESR (Sedimentation	Order rule	ESR not ordered in conjunction with
rate)	Francisco de la Carta de la	CRP unless from approved specialist
	Frequency limitation	Limited to once every 4 weeks
	Prequency limitation	Limited to yearly
Free PSA	Under rule and frequency	Limited to 12 weeks and not
	Infination	unloss post treatment
FT3	Order rule and frequency	If ordered with TSH Only TSH will be
115	limitation	performed unless order is from FD or
		endocrinologist/specialist. Limited to
		once every 12 weeks.
FT4	Order rule and frequency	If ordered with TSH. Only TSH will
	limitation	be performed unless order is from ED
		or endocrinologist/specialist. Limited
		to once every 12 weeks.
GGT	Order rule	GGT not routinely performed
HA1c (glycosylated	Frequency limitation	Performed every 80 days
hemoglobin)		
Immunofixation	Frequency limitation	Limited to 6 weeks
electrophoresis		
Iron Studies	Frequency limitation	Limited to once every 4 weeks
Lipid Profile	Frequency limitation	Limited to 12 weeks
Nonfasting lipid profile	Frequency limitation	Limited to 12 weeks
Protein electrophoresis	Frequency limitation	Limited to 6 weeks
PSA	Order rule and frequency	Limited to 4 weeks and not performed
	limitation	on patients > 75 years of age.
Sputum for C&S	Frequency limitation	Recommended- collection of 1
		specimen

### **Utilization Rules**

Sputum for TB	Frequency limitation	Recommended- collection of 3 specimens on 3 different days
Stool for C&S	Frequency limitation	1 specimen per day In-patients- not performed after 72 hours from admission
Stool for O&P	Frequency limitation	1 specimen per day In-patients- not performed after 72 hours from admission
TSH	Frequency limitation	Limited to 12 weeks
Urea Breath Test (UBT)	Order rule	UBT only ordered if ordered by gastroenterologist
Vitamin B12 (B12)	Frequency limitation	Limited to yearly
Vitamin D (250H VitD)	Frequency limitation	Limited to yearly

### **Foreign Residents Agreement**

#### HHN-SA-014 Consent to Treatment

#### Treatment in Canada of U.S. and other Foreign Residents

Healthcare practitioners may be called upon to provide care and services to patients who are not ordinarily a resident in Canada. If the patient were to bring a legal action against the healthcare practitioner and/or the hospital, there may be limitations on the legal assistance or protection available in connection with such actions. Therefore, healthcare practitioners and healthcare organizations attending foreign patients in Canada make efforts to ensure a HHN-0213 Foreign Residents Agreement form is completed and signed by the patient at the time of registration or admission. This form states that the patient agrees that any legal action commenced will be carried out in accordance with the laws of the Province of New Brunswick and Canada.

### Submission of Coded Patient Samples

In special circumstances, specimens may be submitted using a code as the patient identifier. Standardization of the coding process is required to protect the anonymity of the patient, but at the same time to allow retrieval of information and comparison with previous results in the computer system.

#### Non-nominal Code Format:

A non-nominal patient sample has a coded patient name only decipherable to the ordering provider of the laboratory test

- 1. The first part of the code name shall be: <**ZZZZPhysician's Mnemonic>** e.g. **ZZZZSMITJO**
- The second part of the code name shall be the code assigned by the physician. e.g. ABC NOTE: The first and second parts of the code are separated by a comma, no spaces. e.g. ZZZSMITJO,ABC
- 3. Date of birth or age and sex of the patient are preferred, strictly for statistical reasons.

Anonymous Code Format for specimens collected anonymously by the Community Health Program and is intended for HIV testing only:

An anonymous patient sample has a coded patient name that does not identify the patient and is not decipherable to the ordering provider of the laboratory specimen.

- The first part of the code name <u>must</u> be: <ZZZZANON<u>YYYY</u>> NOTE: YYYY is the calendar year
- 2. The second part of the code name is assigned by the Community Health Program. e.g. A1.

**NOTE:** The first and second parts of the code are separated by a comma,no spaces. e.g. **ZZZZANON2018, A1** 

- 3. Date of birth or age and sex of the patient are preferred, strictly for statistical reasons.
- To comply with Department of Health guidelines to prevent non-nominal and anonymous patients from appearing in the Provincial Electronic Health Record, the code mnemonic must be prefaced with **ZZZZ**
- If the specimen code does not match the required format, discuss any changes that are required with the ordering provider to ensure that they will be able to track the specimen. All changes must be documented on <u>LAB-3-ADM-05-F00004 Authorization To Proceed</u> <u>With Testing</u> form

### **Specimen Collection**

\* **IMPORTANT:** When using a winged blood collection set for venipuncture and a coagulation (citrate) tube is the first specimen tube to be drawn, **a discard tube must be drawn first**. The discard tube must be used to fill the blood collection set tubing's "dead space" with blood. Since the plastic red tubes currently being used at Horizon contain a clot activator, the only suitable discard tube is another coagulation tube, which does not need to be filled. This important step ensures maintenance of the proper blood-to-additive ratio of the blood specimen.

\*\*Nursing staff who draw blood from an intravenous line for Laboratory testing must discard 2 times the dead -space volume and for coagulation examinations, 5 mL of blood or 6 times the dead-space volume. <u>Under no circumstances</u> should the contents of two (2) or more vacutainer tubes be mixed together to make up a required volume. This causes erroneous test results with possible negative patient outcome.

NOTE: See specific collection instructions for each test in Section 8 of this manual.

## 

Order of Draw Table for Collection of Blood Samples

Order	Description	Mixing	Picture
1	Blood Cultures 1. Aerobic 2. Anaerobic 3. Pediatric	8-10x	Photo Blokkenieux
2	Citrate tube - (Blue) "Must be completely filled – use discard tube when using a winged collection set	3-4x	
3	Citrate tube – ESR ( <b>Black</b> )	3 -4x	
4	Plain Serum Tubes ( <b>Red</b> )	5x	
5	Serum tube with/without clot activator/gel (Gold)	5x	
6	Lithium Heparin with Gel, PST (Green) Heparin tube ( <b>Green</b> ) Barricor tube ( <b>Green</b> )	8-10x	
7	EDTA tube Lavender Pink Royal Blue	8-10x	
8	Oxalate/Fluoride tube (Gray)	8-10x	
9	ACD (light yellow)	3-4x	
10	Blood Gas/lonized Calcium 'Safe PICO' syringe	8-10x	

Vacutainer tubes are Courtesy of @ Becton, Dickinson and Company. Reprinted with permission.

### **Specimen Collection Containers**

Container	Name (s)	Mnemonic(s)
	Routine swab Culture swab Aimes Transport swab (may have blue or pink top)	Swab CULT-SWAB
	(obtain from stores)	
	Due to COVID, Urine samples are to be collected in dry sterile container.	
	Chlamydia/GC PCR dual swab for cervix/urethra (extremely limited # obtain from Microbiology) Chlamydia/GC PCR swab for throat/rectal/eye (obtain from Microbiology)	CHLSWAB
	Anaerobic Transport swab (obtain from laboratory)	SWAB-ANA
	Viral Transport media UTM- Universal Transport Medium (obtain from laboratory)	VT
Name: Medit: DOB: Collect Date: Source: Name: Medicare #: Collection Date: Source:	Mycology container No longer available – use sterile screw capped container	МҮС

 This is a CONTROLLED document. LAB-3-ADM-LUM-00001

 Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use

 Laboratory User Manual
 Version 40.0
 Page 19 of 242
 Effective Date: January 24, 2022

	Sterile screw capped container (obtain from stores)	SCC UB80
Themsbort Medium Contraction Benplite a la light Por le transport Benplite à la light Por de transport Benplite à la light Por de transport	Stool Culture Container Enteric Culture Media Cary Blair Transport container (obtain from stores)	STCUL
PARAMENTAL AND	Ova & Parasites Transport Media SAF Fixative (obtain from stores)	O&P
A CONTRACT OF CONTRACT	Pinworm Paddle (obtain from stores)	PWP

### **Transportation of Specimens**

All specimens must be delivered to the laboratory as soon as possible after collection and in accordance with instructions described in Section 8. In order to provide for the safety of the various people and/or businesses delivering specimens to our laboratory, and to protect our own staff receiving them, all specimen packaging and transport must follow current Transportation of Dangerous Goods Regulations. All specimens must remain in the outer container until received by the laboratory staff.

The Transportation of Dangerous Goods (TDG) Act is a federal law created for the protection of humans, animals, property and the environment. Included under this law is the packaging and shipment of **diagnostic**, **laboratory specimens** such as blood, urine, etc. either across the country or a few blocks up the street. All **diagnostic patient specimens including those collected in clinics, doctors' offices, etc., must be packaged and transported in accordance with this law**. As the receiving laboratory we have a responsibility to accept only properly packaged samples and to inform individuals who do not comply with the **TDG Act and Regulations**.

The following information has been abstracted from the TDG Regulations and is provided as a guide to assist you in complying with this law.

inator late i equinea	
Leak-Proof Primary Receptacles	<ul> <li>This is the actual specimen container – blood tube, urine container, swab</li> <li>Always make sure the container lid/cap is properly and tightly closed</li> <li>This container must not leak</li> </ul>
Leak-Proof Secondary Packaging	<ul> <li>Must be leak-proof</li> <li>Zipper-sealed plastic bag or heat-sealed bag is acceptable</li> <li>Place around the primary container(s)</li> <li>Multiple, non-fragile primary containers may be placed together in a single secondary packaging, so long as appropriate absorbent material is used (see below)</li> </ul>
Absorbent Material	<ul> <li>Used to absorb fluids if a primary container should accidentally break</li> <li>Suggested materials: paper towels, absorbent pad (orderable through purchasing)</li> <li>Ensure a sufficient quantity of absorbent material is used in order to absorb the entire volume of the primary receptacle(s), should leakage occur</li> <li>Place inside the secondary packaging</li> </ul>
Outer Packaging	<ul> <li>A <u>rigid</u> container, with at least one surface having minimum dimensions of 4x4 inches, such as an insulated box</li> <li>A "cooler" is ideal for transporting routine diagnostic specimens</li> <li>A soft-sided outer container (e.g. lunch bag/Styrofoam/grocery bag) is not acceptable</li> <li>The cover must be secured</li> <li>Must display both complete delivery and return addresses</li> </ul>
Cushioning (only as required)	<ul> <li>Used to separate fragile primary receptacles (glass tubes)</li> <li>Fragile primary receptacles <u>must not touch</u> one another</li> <li>Large blood collection centers may use a test tube rack to separate blood tubes and newspaper to separate large urine specimens</li> </ul>
Packing Instructions	<ol> <li>Wear protective gloves when handling all patient specimens</li> <li>Ensure all caps/lids are tight and secure</li> <li>Sort specimens by laboratory departments (Haematology, Microbiology, Chemistry, etc.)</li> </ol>

#### Materials required:

- Specimens known or highly suspected to contain an infectious substance transported to any Fredericton Area facility must be packaged and transported with documentation in accordance with TDG Regulations by trained and certified staff <sup>1</sup>
- A detailed list of causative organisms is available from resource staff in the DECRH Regional Laboratory Microbiology Department.
- All specimens must be delivered to the laboratory within the required time period as set forth in Section 8 of this manual.
- The requisition must not be wrapped around the specimen container as this tends to damage the requisition. This practice is also a potential safety hazard.
- Requisitions must **NOT** be placed in the bag with the specimens.
- All slides must be sent in slide mailers.
- Specimens destined for different laboratory departments (Haematology, Microbiology, Chemistry, etc.) must be bagged separately.
- After regular working hours, spinal fluids and blood cultures must be immediately delivered directly to the technologist.

# Instructions for packaging specimens according to temperature requirements

These packaging instructions do not take place of TDG Regulations, but rather ensure that specimen integrity and proper temperature is maintained during transit.

The Transportation of Dangerous Goods (TDG) Act must be followed when packaging and transporting specimens. All diagnostic patient specimens including those collected in clinics, doctors' offices, etc., must be packaged and transported in accordance with this law. As the receiving laboratory we have a responsibility to accept only properly packaged samples and to inform individuals who do not comply with the TDG Act and Regulations.

#### Materials/Supplies

- Room temperature gel packs (stabilized for a minimum of 24 hrs. at room temperature)
  - Medium 8"x6" ID Technology - large 10"x12" Cardinal Health
    - ID Technology item #0106801 Cardinal Health item #0107348
- Frozen ice packs (stabilized for a minimum of 24 hrs. in freezer, -20°C or -40°C)
  - Small 5.7"x4.4" ID Technology
    - ID Technology item #7053474 ID Technology item #0106801
      - item #0106801 item #0106802
  - Medium 8"x6" ID Technology - Large 8"x8" ID Technology
  - (large ice packs are blue and come with a sleeve)
- Refrigerated **gel packs** (stabilized for a minimum of 24 hrs. in refrigerator)
  - large 10"x12" Cardinal Health item #0107348

<sup>&</sup>lt;sup>1</sup> Transportation of Dangerous Goods Act and Regulations, Part 2

- Insulating/cushioning material (packing paper, bubble wrap, newspaper, paper towel, gray absorbent material, etc.)
- Insulating material (gray absorbent material) for use with 48 qt/45L and 28qt/26L coolers
- Absorbent sheets absorbent strip 6 100mL, ESBE Scientific, item #0051572

NOTE: A minimum of two bags must be ordered per order)

- Heat sealed bags/zipper locked bags
- Dry ice
- Transport boxes for dry ice shipments or designated dry ice coolers
- Transport coolers
- Shipping labels
- Cardboard (~ 7.5 x 7.5 inches)

#### **Quality Control**

- Personnel responsible for unpacking specimens must notify appropriate manager if specimens arrive in an unacceptable condition (i.e. improper packing, outside acceptable temperature range, etc.)
- Specimens sent frozen are acceptable upon receipt if completely frozen. Dry ice (if used) must still be present in the shipping container. Ice packs (if used) must be, at least, in a partially frozen state upon receipt.
- Audits are performed on a regular basis to ensure TDG Regulations are followed and correct packing schemes are being used.

#### Procedure

- Determine the shipping requirements of the specimens being transported as per the Lab User Manual Test Table Alphabetical List
  - a. Specimens to be transported FROZEN click here
  - b. Specimens to be transported REFRIGERATED (1-10°C) click here
  - c. Specimens to be transported at AMBIENT (16-25°C) (room temperature) click here

#### a. Specimens to be transported FROZEN

Packing Situation	Work instructions
When using <b>DRY ICE</b>	<ol> <li>Add sufficient Dry Ice based on the size of the shipping container</li> <li>Container must allow for the escape of gases when Dry Ice begins to evaporate</li> <li>Place frozen specimens(s) in a bag</li> <li>Close/seal specimen bag and place in container</li> <li>Fill any empty space around the specimens with cushioning material in order prevent shifting during transport</li> <li>Paperwork must be separated from specimens and can be placed on top of cooler contents</li> <li>Ensure the Class 9 (hazard symbol) label is placed on the outside of the shipping container notifying Dry Ice is present</li> </ol>
When using ICE PACKS	<ul> <li>NOTE: For use with 5 qt/5L. coolers only:</li> <li>1. Place a layer of bubblewrap on bottom of cooler</li> <li>2. Elasticize frozen specimens(s) between two small frozen ice packs</li> <li>3. Place specimens(s) and ice packs in a bag</li> <li>4. Close/seal bag and place in cooler</li> <li>5. Add two additional small frozen ice packs around bag</li> <li>6. Fill any empty space with bubblewrap</li> </ul>

	<ol> <li>Layer of bubblewrap on top</li> <li>Paperwork must be separated from specimens and can be placed on top of cooler contents</li> </ol>
--	--

#### b. Specimens to be transported REFRIGERATED (1-10°C)

Cooler size & Ice pack Temperature	Work instructions
48 qt / 45 L Ice pack -20°C	<ol> <li>Place <u>two large frozen ice packs</u> on the bottom of the cooler</li> <li>Add a double layer of insulation (gray material) over the ice packs</li> <li>Place specimens in a bag(s) with the appropriate amount of absorbent sheets for the volume of the specimens</li> <li>Close/seal specimen bag(s)</li> <li>Wrap bag(s) of specimens in bubblewrap to provide an extra layer of insulation, and place in cooler on top of the gray material</li> <li>NOTE: It is extremely important that specimens do not come in direct contact with the ice packs</li> <li>Fill any empty space around the specimens with cushioning material in order to prevent shifting during transport</li> <li>Add a double layer of insulation (gray material) over the wrapped specimens</li> <li>Place <u>two large refrigerated gel packs</u> on top of the gray material</li> <li>Paperwork must be separated from specimens and can be placed on top of the cooler contents</li> </ol>
28 qt / 26 L Ice pack -20°C	<ol> <li>Place <u>one large refrigerated gel pack</u> on the bottom of the cooler</li> <li>Add a double layer of insulation (gray material) over the gel pack</li> <li>Place <u>one large frozen ice pack</u> standing up against the side/end (depending on the shape) of the cooler</li> <li>Place two pieces of cardboard against the ice pack on the side/end</li> <li>Place specimens in a bag(s) with the appropriate amount of absorbent sheets for the volume of the specimens</li> <li>Close/seal specimen bag(s)</li> <li>Wrap bag(s) of specimens in bubblewrap to provide an extra layer of insulation, and place in cooler on top of the gray material</li> <li>NOTE: It is extremely important that specimens with cushioning material in order to prevent shifting during transport</li> <li>Add a double layer of insulation (gray material) over the wrapped specimens</li> <li>Place <u>one large refrigerated gel pack</u> on top of the gray material</li> </ol>
28 qt / 26 L Ice pack -40°C	<ol> <li>Place <u>one medium frozen ice pack</u> on the bottom of the cooler</li> <li>Add a double layer of insulation (gray material) over the ice pack</li> <li>Place specimens in a bag(s) with the appropriate amount of absorbent sheets for the volume of the specimens</li> <li>Close/seal specimen bag(s)</li> <li>Wrap bag(s) of specimens in bubblewrap, to provide an extra layer of insulation, and place in cooler on top of the gray material</li> <li>NOTE: It is extremely important that specimens do not come in direct contact with the ice pack</li> <li>Fill any empty space around the specimens with cushioning material in order</li> </ol>

	<ul> <li>to prevent shifting during transport</li> <li>7. Add a double layer of insulation (gray material) over the wrapped specimens</li> <li>8. Place one <u>medium frozen ice pack</u> on top of the gray material</li> <li>9. Paperwork must be separated from specimens and can be placed on top of the cooler contents</li> </ul>
16-18 qt /15-17 L Ice pack -20°C	<ol> <li>Place <u>one large refrigerated gel pack</u> on the bottom of the cooler</li> <li>Add a double layer of insulation (bubblewrap) over the gel pack</li> <li>Place <u>one large frozen ice pack</u> standing up against the side/end (depending on the shape) of the cooler</li> <li>Place two pieces of cardboard against the ice pack on the side/end</li> <li>Place specimens in a bag(s) with the appropriate amount of absorbent sheets for the volume of the specimens</li> <li>Close/seal specimen bag</li> <li>Wrap bag(s) of specimens in bubblewrap, to provide an extra layer of insulation, and place in cooler on top of the bubblewrap</li> <li>NOTE: It is extremely important that specimens with cushioning material in order to prevent shifting during transport</li> <li>Add a double layer of insulation (bubblewrap) over the wrapped specimens</li> <li>Place <u>one large refrigerated gel pack</u> on top of the bubblewrap</li> </ol>
16-18 qt /15-17 L Ice pack -40°C	<ol> <li>Place <u>one medium frozen ice pack</u> on the bottom of the cooler</li> <li>Add a double layer of insulation (bubblewrap) over the ice pack</li> <li>Place specimens in a bag(s) with the appropriate amount of absorbent sheets for the volume of the specimens</li> <li>Close/seal specimen bag(s)</li> <li>Wrap bag(s) of specimens in bubblewrap, to provide an extra layer of insulation, and place in cooler on top of the bubblewrap</li> <li>NOTE: It is extremely important that specimens do not come in direct contact with the ice packs</li> <li>Fill any empty space around the specimens with cushioning material in order to prevent shifting during transport</li> <li>Add a double layer of insulation (bubblewrap) over the wrapped specimens</li> <li>Place <u>one large refrigerated gel pack</u> on top of the bubblewrap</li> <li>Paperwork must be separated from specimens and can be placed on top of the cooler contents</li> </ol>
8-10 qt / 8-9 L Ice pack -20°C	<ol> <li>Place <u>one medium frozen ice pack</u> on the bottom of the cooler</li> <li>Add a double layer of insulation (bubblewrap) over the ice pack</li> <li>Place specimens in a bag(s) with the appropriate amount of absorbent sheets for the volume of the specimens</li> <li>Close/seal specimen bag(s)</li> <li>Wrap bag(s) of specimens in bubblewrap, to provide an extra layer of insulation, and place in cooler on top of bubblewrap</li> <li>NOTE: It is extremely important that specimens do not come in direct contact with the ice packs</li> <li>Fill any empty space around the specimens with cushioning material in order to prevent shifting during transport</li> <li>Add a double layer of insulation (bubblewrap) over the wrapped specimens</li> <li>Place <u>one medium frozen ice pack</u> on the top of the bubblewrap</li> </ol>

	<ol> <li>If there is room at the top add more cushioning material to fill the cooler</li> <li>Paperwork must be separated from specimens and can be placed on top of the cooler contents</li> </ol>						
5 qt / 5L Ice Packs -20°C	<ol> <li>NOTE: For local deliveries <u>only</u> (Fredericton City Limits)</li> <li>Place <u>one small frozen ice pack</u> on the bottom of the cooler</li> <li>Add a double layer of insulation (bubblewrap) over the ice pack</li> <li>Place specimens in a bag(s) with the appropriate amount of absorbent sheets for the volume of the specimens</li> <li>Close/seal specimen bag(s)</li> <li>Wrap bag(s) of specimens in bubblewrap, to provide an extra layer of insulation, and place in cooler on top of bubblewrap</li> <li>NOTE: It is extremely important that specimens do not come in direct contact with the ice packs</li> <li>Fill any empty space around the specimens with cushioning material in order to prevent shifting during transport</li> <li>Add a double layer of insulation (bubblewrap) over the wrapped specimens</li> <li>Place <u>one small frozen ice pack</u> on the top of the bubblewrap</li> <li>Paperwork must be separated from specimens and can be placed on top of the cooler contents</li> </ol>						

#### c. Specimens to be transported at <u>AMBIENT (16-25°C)</u> (Room Temperature)

Cooler Size	Work instructions
48 qt / 45 L	<ol> <li>Place <u>two large room temperature gel packs</u> on the bottom of the cooler</li> <li>Add a double layer of insulation (gray material) over the gel packs</li> <li>Place specimens in a bag(s) with the appropriate amount of absorbent sheets for the volume of the specimens</li> <li>Close/seal specimen bag(s)</li> <li>Wrap bag(s) of specimens in bubblewrap, to provide an extra layer of insulation, and place in cooler on top of gray material</li> <li>Fill any empty space around the specimens with cushioning material in order to prevent shifting during transport</li> <li>Add a double layer of insulation (gray material) over the wrapped specimens</li> <li>Place <u>two large room temperature gel packs</u> on top of the gray material</li> <li>Paperwork must be separated from specimens and can be placed on top of the cooler contents</li> </ol>
28 qt / 26 L	<ol> <li>Place <u>two large room temperature gel packs</u> on the bottom of the cooler</li> <li>Add a double layer of insulation (gray material) over the gel packs</li> <li>Place specimens in a bag(s) with the appropriate amount of absorbent sheets for the volume of the specimens</li> <li>Close/seal specimen bag(s)</li> <li>Wrap bag(s) of specimens in bubblewrap, to provide an extra layer of insulation, and place in cooler on top of the gray material</li> <li>Fill any empty space around the specimens with cushioning material in order to prevent shifting during transport</li> <li>Add a double layer of insulation (gray material) over the wrapped specimens</li> <li>Place <u>two large room temperature gel packs</u> on top of the gray material</li> <li>Paperwork must be separated from specimens and can be placed on top of the cooler contents</li> </ol>

16-18 qt / 15-17 L	<ol> <li>Place <u>one large room temperature gel pack</u> on the bottom of the cooler</li> <li>Add a double layer of insulation (bubblewrap) over the gel pack</li> <li>Place specimens in a bag(s) with the appropriate amount of absorbent sheets for the volume of the specimens</li> <li>Close/seal specimen bag(s)</li> <li>Wrap bag(s) of specimens in bubblewrap, to provide an extra layer of insulation, and place in cooler on top of the bubblewrap</li> <li>Fill any empty space around the specimens with cushioning material in order to prevent shifting during transport</li> <li>Add a double layer of insulation (bubblewrap) over the wrapped specimens</li> <li>Place <u>one large room temperature gel pack</u> on top of the bubblewrap</li> <li>Paperwork must be separated from specimens and can be placed on top of the cooler contents</li> </ol>
8-10 qt / 8-9 L	<ol> <li>Place <u>one large room temperature gel pack</u> on the bottom of the cooler</li> <li>Add a double layer of insulation (bubblewrap) over the gel pack</li> <li>Place specimens in a bag(s) with the appropriate amount of absorbent sheets for the volume of the specimens</li> <li>Close/seal specimen bag(s)</li> <li>Wrap bag(s) of specimens in bubblewrap, to provide an extra layer of insulation, and place in cooler on top of the bubblewrap</li> <li>Fill any empty space around the specimens with cushioning material in order to prevent shifting during transport</li> <li>Add a double layer of insulation (bubblewrap) over the wrapped specimens</li> <li>If there is room at the top of the cooler add more cushioning material to fill the cooler</li> <li>Paperwork must be separated from specimens and can be placed on top of the cooler contents</li> </ol>
5qt / 5L	<ol> <li>NOTE: For local deliveries only (Fredericton City Limits)</li> <li>Line bottom and sides of cooler with bubblewrap</li> <li>Place two medium room temperature gel packs on the bottom of the cooler over the bubblewrap</li> <li>Add a double layer of insulation. (bubblewrap) over the gel packs</li> <li>Place specimens in a bag(s) with the appropriate amount of absorbent sheets for the volume of the specimens</li> <li>Close/seal specimen bag(s)</li> <li>Wrap bag(s) of specimens in bubblewrap, to provide an extra layer of insulation, and place in cooler on top of the bubblewrap</li> <li>Fill any empty space around the specimens with cushioning material in order to prevent shifting during transport</li> <li>Add a double layer of insulation (bubblewrap) over the wrapped specimens</li> <li>Place one medium room temperature gel pack on top of the bubblewrap</li> <li>Place one medium room temperature gel pack on top of the bubblewrap</li> </ol>

- Extreme weather conditions and transportation delays have been taken into account during the validation of the coolers and the individual packing schemes. In order for the coolers to maintain the correct temperature ranges:
  - o proper packing materials in the proper amount must be used;
  - coolers should not be sent half full. Add more packing materials or use a smaller cooler;

- specimens that are to be sent between 2°-10°C should be refrigerated as soon as possible before being packed for transport.
- Five quart coolers are validated for temperatures between 3.5°C and 25°C for up to three hours. NOTE: These coolers may only be used for refrigerated and room temperature specimens for local transport within Fredericton City Limits.

### **Pneumatic Tube System**

Please refer to <u>HHN-PR-001FR Pneumatic Tube System (PTS)</u> for details on the proper use of the Pneumatic Tube System at the Dr. Everett Chalmers Regional Hospital. This policy is available for internal use only.

### **Rejection of Specimens**

All specimens collected for laboratory testing must be labeled and identified with the patient's full name and at minimum 1 unique patient identifier. Specimens/requisitions submitted to the laboratory without the patient full name and identifier shall not be processed and a request will be made to recollect the specimen as necessary.

Laboratory Specimens may also be rejected for (but not limited to):

- 1. Insufficient quantity of specimen
- 2. Specimens too old to process
- 3. Leaking specimens For the safety of our workers, and the possible integrity of the specimen, it may be necessary to discard specimens which leak and cause contamination. The laboratory reserves the right to reject patient specimens that have not been properly packaged and delivered <sup>2,2,3</sup>. In such cases, the sending location will be promptly notified.
- 4. Hemolyzed specimen (depends on test requested)
- 5. Incorrect type of specimen or container
- 6. Anticoagulated specimens that are clotted
- 7. Specimens that did not receive proper storage and/or transportation conditions
- 8. Damage beyond repair (e.g. broken slides)
- 9. Specimen or Requisition having a health care number which is incorrect by two or more digits
- 10. Improperly labeled specimens (e.g. unlabeled specimen wrapped in a requisition, unlabeled specimen in a bag that contains a label, label placed on top of tinfoil)

**NOTE:** Specimens that are deemed as compromised/irretrievable may be processed with a completed **LAB-3-ADM-05-F00004** Authorization to Proceed with Testing form.

**Technical Criteria:** All specimens must be technically suitable for the purpose of testing. Refer to Section 7 of this manual for specific test collection/referral instructions. Results of patient's tests can only be as good as the collection and transportation process.

<sup>&</sup>lt;sup>2</sup> Occupational Health and Safety Act, Part 9.1

<sup>&</sup>lt;sup>3</sup> Standards for Hospitals in New Brunswick, Section 3.1.4

**Contamination:** Contamination of specimen containers and requisitions with blood, urine, feces, etc. represents a substantial hazard for the transmission of disease. If contamination occurs, senders must use appropriate disinfectant to clean the outside of specimen containers before sending them to the laboratory<sup>4</sup>.

<sup>&</sup>lt;sup>4</sup> RVH Infection Control Manual, Section 8.4

### **Reporting of Laboratory Tests**

- All patient test results are available in PCI as soon as the results are verified.
- Reports are sent to the ordering physician unless otherwise specified.
- Preliminary reports may be transmitted by telephone or by some other form and it should be recognized that in all cases the regular report takes precedence over preliminary reports. Results transmitted by auto-FAX or through Meditech Scheduler (only at the request of the physician) are considered to be the official report. However, **in some instances**, a follow-up report is provided by using the regular reporting system of the Laboratory.
- Reports to doctors' offices, hospitals, and health agencies in the Province are delivered by the most expeditious way. The bus, FAX, courier services, telephone and postal services are utilized. Other means are used when deemed more effective. Department of Health Notification: In accordance with the Public Health Act, the laboratory provides details of patients with positive results for communicable diseases under surveillance to the New Brunswick Medical Officer of Health<sup>5</sup>.

### **Critical Values**

Critical values, also known as "panic" values are laboratory results that indicate a life-threatening situation for the patient. Urgent notification of the appropriate health care professional is mandatory<sup>6</sup>.

Inpatients, outpatients or referred of DECRH, HDSJ Perth, OPH and URVH:

- Critical values are telephoned to the physician, Nurse Practitioner, Registered Nurse or Licensed Practical Nurse followed by a printed/faxed report.

See next few pages for Critical values tables.

<sup>&</sup>lt;sup>5</sup> Reportable Communicable Diseases in New Brunswick, Revised List

<sup>&</sup>lt;sup>6</sup> Standards for Hospitals in New Brunswick, Section 5

### **Critical Values – Chemistry**

Test	Units	Lower Limit	Upper Limit				
Blood Gases/Cooximetry							
pH	mm Hg	< 7.2	> 7.6				
pCO2	mm Hg	< 20	> 70				
pO2, arterial	mm Hg	< 40					
Carboxyhemoglobin (CO level)	%		> 20				
Electrolytes/Routine Chemistry							
Ammonia	umol/L		> 100				
Bilirubin – total, newborn	umol/L		> 300				
Calcium	mmol/L	< 1.50	> 3.0				
Calcium, ionized	mmol/L	< 0.75	> 1.60				
CO2 (bicarbonate)	mmol/L	< 10	> 40				
Creatinine	umol/L		> 600*				
Glucose	mmol/L	< 2.5	> 25.0				
Lactate	mmol/L		> 4				
Magnesium	mmol/L	< 0.4	> 2.0				
Osmolality, serum	mOsm/Kg	< 250	> 350				
Phosphorus	mmol/L	< 0.4	> 3.0				
Potassium	mmol/L	< 2.8	> 6.2				
Sodium	mmol/L	< 120	> 160				
Troponin T high sensitivity	ng/L		> 50**				
Toxicology/Drug Monitoring							
Acetaminophen	umol/L		> 665				
Carbamazepine	umol/L		> 63				
Digoxin	nmol/L		> 3.0				
Ethanol	mmol/L		> 65				
Ethylene Glycol	mmol/L		> 3.2***				
Gentamicin, Peak	mg/L		> 10				
Gentamicin, Trough	mg/L		> 2				
Isopropanol	mmol/L		> 6.7***				
Methanol	mmol/L		> 6.2***				
Lithium	mmol/L		> 2.0				
Phenobarbital	umol/L		> 200				
Phenytoin	umol/L		> 120				
Salicylate	mmol/L		> 2.2				
Theophylline	umol/L		> 110				
Tobramycin, Peak	mg/L		> 10				
Tobramycin, Trough	mg/L		> 2				
Valproate	umol/L		> 1000				
Vancomycin, Trough	mg/L		> 25				

\*Do not call if within previous 2 months Creatinine has been ≥600. Do not call Dialysis patients.

\*\* First time hs-Troponin-T only \*\*\*Broadcast any presence Revision: February 2020

#### **Critical Values- Haematology**

Hgb	Platelet	LKC	Diff	INR	APTT	D-Dimer	CSF
≤ 70 g/L ≥ 200 g/L ≥ 225 g/L 0-1 week old	≤ 30 x 10 <sup>9</sup> /L ≥ 1000 x 10 <sup>9</sup> /L	≤ 2.0 x 10 <sup>9</sup> /L ≥50.0 x 10 <sup>9</sup> /L	Blasts	≥ 5.0	≥ 75.0 sec	IP & ER Broadcast Results	≥ 15 x 10 <sup>6</sup> /L
Peripheral Smear, Bone Marrow or Flowcytometry results that indicate possible new acute leukemia CSF - Presence of malignant cells by morphology							

For very Abnormal results NOT on this table: During regular working hours, the technologist must use his/her professional judgement. Consultation with the Clinical Specialist is required before calling. If the event occurs on an off-shift, he/she will call the result and leave a message for the Clinical Specialist.

### **\*Critical Values - DECRH Oncology ONLY**

Hgb	Platelet	ANC	Diff	INR	APTT	D-Dimer	CSF
≤ 70 g/L	≤ 20 x 10 <sup>9</sup> /L ≥ 1000 x 10 <sup>9</sup> /L	≤.50	Blasts (New Case)	≥ 5.0	≥ 75 sec	Broadcast Results	≥ 15 x 10 <sup>6</sup> /L
Peripheral Smear, Bone Marrow or Flowcytometry results that indicate possible new acute leukemia CSF - Presence of malignant cells by morphology							

### After Hours Protocol DECRH Patients

1. Call report to ordering doctor (DECRH Onco patients - Call family doctor)

2. If unavailable, contact doctor on call for the group (Psychiatry patients - contact psychiatrist on call through switchboard)

### \*Critical Values – Saint John Regional Hospital Oncology

Hgb	Platelet	ANC	Diff	INR		
≤ 70 g/L	≤ 20 x 10 <sup>9</sup> /L ≥ 1000 x 10 <sup>9</sup> /L	≤ 0.50	Blasts (new case)	≥ 6.0		
Peripheral Smear, Bone Marrow or Flow Cytometry results that indicate possible new acute						
leukemia						

Referenced from Saint John Area Haematology Manual <u>LAB-2S-HM-06001 Communication of Results</u>

### \*Critical Values – The Moncton Hospital Oncology

Hgb	Platelet	ANC	Diff	INR		
≤ 70 g/L	≤ 15 x 10 <sup>9</sup> /L ≥ 1000 x 10 <sup>9</sup> /L	≤ 0.50	Blasts (new case)	≥ 5.0		
Peripheral Smear, Bone Marrow or Flow Cytometry results that indicate possible new acute						
leukemia						
Referenced from Moncton Area Haematology Manual LAB-1MV-HM-01070 Critical Values						

### **Transfusion Medicine Critical Results**

	<ul> <li>Identification of a new clinically significant antibody in pre-transfusion testing</li> </ul>
	• When not able to provide crossmatch compatible blood explain there are higher risks with transfusion (refer to Clinical Specialist if necessary)
	<ul> <li>Positive DAT in recently transfused patient or in neonate</li> </ul>
Serological	<ul> <li>Warm autoantibody identified in a patient to be transfused, explain there are higher risks with transfusion (refer to Clinical Specialist if necessary)</li> </ul>
	<ul> <li>Crossmatch incompatibility found in blood previously issued unmatched, explain the risks as appropriate to the incompatibility (refer to Clinical Specialist if necessary)</li> </ul>
	<ul> <li>Incompatible crossmatch when transfusion is urgently needed, explain risks are unknown until investigation is complete</li> </ul>
	<ul> <li>Prenatal testing showing a clinically significant antibody (i.e. implicated in HDN)</li> </ul>
Fetal/Maternal	<ul> <li>Cord blood results on maternal patients with a clinically significant antibody</li> </ul>
	<ul> <li>Positive Kleihauer-Betke test with a calculated bleed &gt;5 mL whole blood</li> </ul>
	<ul> <li>Prenatal titer results which are 8 or greater (first time)</li> </ul>
	<ul> <li>Titer results that demonstrate a greater than 2 fold increase in titer compared to the previous titer (if available)</li> </ul>

#### Cytopathology Critical, Reportable, or Unexpected Values

Critical, reportable, or unexpected diagnoses in cytology shall be treated accordingly and efforts shall be made to finalize results the same day if possible and verbally communicate these results to the appropriate physician or their delegate. Determination of critical, reportable, or unexpected values in Cytology shall be at the discretion of the signing pathologist or their delegate as per Cytology Lab Policy # LAB-3D-CY-00415.

#### **Examples:**

#### **Critical Results**

- A malignancy involving a critical anatomic site in a non-gynecologic or FNA specimen. Example: a neoplasm that might result in superior vena cava syndrome or paralysis.
- Identification of possible pathogenic organisms in a non-gynecologic or FNA specimen from an immunosuppressed patient or in any orbital or CSF sample. Invasive fungal infections, Herpes infection in cerebrospinal fluid, or Herpes in a gynecological specimen from a pregnant woman.
- A corrected report, where it is deemed critical to communicate any significantly changed result that could result in a critically different patient management.

#### Reportable Results:

- Bacterial, mycobacterial, viral, and fungal infections for which antimicrobial treatment might be added or changed, as well as malignancies in fluid for which more aggressive therapy or hospice care might be initiated.
- Results deemed by the pathologist to be of sufficient importance to warrant direct communication with the treating clinician.

#### **Unexpected Results:**

- Any unusual or unexpected cytology result, which may include an unexpected malignancy in a gynecological, non-gynecological, or FNA specimen.

### **Research Activities**

- The Research Ethics Board reviews and approves research activities with which the laboratory is involved. It also verifies that these activities meet applicable ethics protocols and standards.
- The laboratory does not use patient specimens for anything other than the stated purpose unless consent has been obtained, or unless residual specimens are made anonymous or pooled with others.

### Section 2: Clinical Chemistry

### Blood Collection Tube Requirement for Chemistry Lab Pre-Analytical Instrumentation at DECRH

Since May 7, 2012 the Chemistry Laboratory at the DECRH has been using pre-analytical automated instrumentation to speed sample processing. The instrumentation will, however, only process a certain size blood collection tube. The laboratory will accept blood samples collected only in the following Becton Dickinson collection tubes and/or aliquot tubes described below:

tube	Meditech order#	Catalogue #	anticoagulant	size	volume
Gray (Glucose)	7031929	367925	Sodium fluoride, Potassium oxalate	13X100	4.0 mL
Dark Green (Heparin)	7031926	367878	Sodium Heparin	13X100	6.0 mL
Light Green (Heparin)	7031991	367962	Lithium Heparin (PST)	13X100	4.5 mL
Red (plain)	7031937	367815		13X100	6.0 mL
Gold (SST)	7031938	367986	Serum Separator	13X100	5.0 mL
Lavender (EDTA)	7031933	367861	Lavender EDTA	13X75	4.0 mL
Blue (Citrate)	7031927	363083	Sodium Citrate	13X75	2.7mL or 1.8 mL
Pink (EDTA)	7031950	367899	Pink EDTA	13X100	6.0 mL (Transfusion Medicine)
Grenier aliquot tubes with caps	7032911 contact Central Stores at DECRH				

### **Common Approved Chemistry Profiles**

	IRON STUDIES
ABDOMINAL	Iron
Total Bilirubin	UIBC
Alkaline Phosphatase	TIBC
Amylase	% Transferrin Saturation (calculation)
ALT (Alanine Amino Transferase)	Transferrin (calculation)
CARDIAC (HEART)	LIVER
CK (Creatine Kinase)	Total Protein
ERP (Emergency Room Profile)	Total Bilirubin
Sodium	Alkaline Phosphatase
Potassium	ALT (Alanine Amino Transferase)
Chloride	LYTE
CO2 Content	Sodium
Anion Gap	Potassium
Glucose	Chloride
Urea	ONCP (Oncology)
Creatinine	Sodium
EXTLYTE (Extended Lytes)	Potassium
Calcium	Chloride
Phosphorous	Glucose
Magnesium	Creatinine
GSP (General Surgery Profile)	Calcium
Sodium	Magnesium
Potassium	Total Protein
Chloride	Total Bilirubin
Glucose	KIDTR (Kidney Transplant)
Creatinine	(Replaces Dialysis panels 1&2)
Albumin	Sodium
Total Bilirubin	Potassium
Alkaline Phospatase	Chloride
ALT (Alanine Amino Transferase)	CO2 Content
HITACHI-12	Glucose
Sodium	Urea
Potassium	Creatinine
Chloride	Uric Acid
Glucose	Calcium
Creatinine	Phosphate
Uric Acid	Magnesium
Calcium	Total Protein
I otal Protein	Albumin
Alkaline Phosphatase	Alkaline Phosphatase
LDH (Lactate Dehydrogenase)	ALI (Alanine Amino Transferase)
ALI (Alanine Amino Transferase)	NON LIP (Non fasting profile)
Cholesterol	Cholesterol
LIPIDP	Triglycerides (Non Fasting)
Cholesterol	HDL Cholesterol
Triglycerides	Non HDL (calculation)
HDL Cholesterol	LDL Cholesterol (calculation)
LDL Cholesterol (calculation)	Cholesterol/HDL Chol Ratio (calculation)
Non HDL (calculation)	
Unoiesteroi/HDL Cholesterol Ratio (calculation)	
PRE DIALYSIS	CHEM 9
---	------------------
Sodium	Sodium
Potassium	Potassium
Chloride	Chloride
CO2 Content	CO2 Content
Creatinine (Pre)	Anion Gap
Calcium	Glucose
Magnesium	Urea
Phosphorous	Creatinine
Albumin	Phosphate
Calcium-Phosphorous Product (calculation)	Magnesium
POST DIALYSIS	TOXIC DRUG PANEL
Sodium	Benzodiazepine
Potassium	Acetaminophen
Chloride	Salicylate
CO2 Content	Alcohol (Ethyl)
Creatinine (Post)	Osmolality

# **URINE DRUG PROFILES**

DRUG - ADD	DRUG - METH
Creatinine	Creatinine
Amphetamine	Amphetamine
Benzodiazapine	Benzodiazapine
Cocaine	Cocaine
Opiate	Opiate
THC	Methadone
Oxycodone	Oxycodone
DRUG - ER	DRUG - PSYC
Creatinine	Creatinine
Amphetamine	Amphetamine
Benzodiazapine	Benzodiazapine
Cocaine	Cocaine
Opiate	Opiate
PCP	PCP
THC	THC
Oxycodone	Oxycodone

This is a CONTROLLED document. LAB-3-ADM-LUM-00001 Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use Page 37 of 242 Laboratory User Manual Effective Date: January 24, 2022 Version 40.0

# **Adrenocortical Function Tests**

## Adrenocorticotropic Hormone, ACTH: order ACTH

 ACTH is an expensive test that is referred. It is reserved for a suspected pituitary-dependent Cushing's syndrome and for the ectopic ACTH syndrome. ACTH levels may also have some prognostic value. Increasing plasma ACTH levels may herald the development of a pituitary tumour post-adrenalectomy (Nelson's syndrome).

## ACTH Stimulation Test, Standard Dose (Cortrosyn Stimulation): order ACTHS

- ACTH stimulation test can be done at any time throughout the day provided staffing resources are sufficient to ensure timed collections
- Control blood specimens are drawn for cortisol (spotted or Red) and ACTH (Ice-Lav). 0.25 mg of Cortrosyn (Cosyntropin), dissolved in sterile saline, is then injected intramuscularly. Blood specimens (Spotted or Red) are drawn 30 and 60 minutes later and the serum cortisol level is then determined on each. In children, aged 2 years or less, a dose of 0.125 mg will often be adequate.
- Note: ACTH stimulation test can be done at any time provided staffing resources are sufficient to ensure timed collections following injection of Cortrosyn(Cosyntropin)
- The normal response, in most cases, is an approximate doubling of the basal level, provided that this value does not exceed the normal range. The following criteria have been established for a normal response:
  - The base serum cortisol level should exceed 140 nmol/L.
  - The peak serum cortisol level should be greater than 550 nmol/L.
- These criteria also apply when the drug is injected intravenously in 2-5 mL of saline over a 2minute period.
- This is a screening test only. A normal (positive) response rules out primary and overt secondary adrenal insufficiency, but a partial ACTH deficiency is not excluded. A subnormal response indicates decreased adrenal reserve and a diagnosis of insufficiency, either primary to adrenal failure (e.g. Addison's disease) or secondary to pituitary disease or suppression by steroid medications. To distinguish primary and secondary insufficiency, the prolonged ACTH test and plasma ACTH measurements may be performed.
- In adrenal hyperplasia, there is a 3 to 5-fold increase; in adrenal carcinoma, there is little or no response.

**NOTE:** Patients taking inadvertent doses of hydrocortisone on the test day (Group I) and women taking estrogen-containing drugs (Group II) may exhibit abnormally high basal serum cortisol levels. A paradoxical response may be noted in the Group I patients shown by a decrease in serum cortisol values following a stimulating dose of Cortrosyn. In the Group II patients, only a normal incremental response is to be expected.

 This is a CONTROLLED document. LAB-3-ADM-LUM-00001

 Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use

 Laboratory User Manual
 Version 40.0
 Page 38 of 242
 Effective Date: January 24, 2022

## Calcitonin: order CALCI

- Medullary carcinoma of the thyroid (MCT) is a neoplasm of the parafollicular or C cells, which are the sites of origin of calcitonin. The measurement of serum calcitonin thus becomes a valuable test in the differential diagnosis of tumors of the thyroid where calcitonin is elevated in MCT. However, in a small proportion of patients with MCT, the basal (fasting) level of calcitonin is normal. In such cases, a provocative stimulus such as calcium infusion or pentagastrin injection is followed by an abnormally large increase in serum calcitonin level.
- Elevated levels of calcitonin have also been found in patients with carcinoma of the breast or lungs as well as in association with a variety of less common neoplastic disorders including intestinal carcinoid, malignant melanomas and islet cell tumors of the pancreas.

**Protocol for Provocative Test for Calcitonin Release:** order **CALCI** for each timed specimen; collect 0, 2, 5, and 15-minute specimens

#### Out-patients

Book the test with Central Scheduling. Inform the physician that he/she must arrange for someone to administer the injections. The patient must be fasting.

#### In-patients

Book the test with CIU and Pharmacy. Arrange for an intern to administer the injections. The patient must be fasting.

#### Test Procedure

- 1. Inform the patient that he/she will experience some mild, transient sensations after the injections, notably flushing and nausea.
- Have available:
   i) Calcium, 2 mg Ca<sup>++</sup>/kg, from calcium gluconate
   ii) Pentagastrin, 0.5 μg/kg in 2-4 mL of physiologic saline
   iii) Four Spotted or Red tubes
- 3. Draw one blood specimen before injection, labelled 0 minutes.
- 4. By IV infusion, inject calcium gluconate over 1 minute, followed by a 5-10 second injection of pentagastrin.
- 5. Draw blood from the opposite arm at 2, 5, and 15 minutes following the pentagastrin injection. The 2-minute sample is the most critical one. Label samples, including elapsed time following pentagastrin injection. Mix and deliver all specimens, together on ice, to Chemistry ASAP.

## Cortisol - Serum: order CORT

- In order to provide a good index of adrenocortical hyper function, it is recommended that the diurnal variation of serum cortisol be determined. Blood specimens (Light green – lithium heparin) should be drawn, preferably, at approximately 0800 hours and 1600 hours on the same day. It is, however, acceptable to collect AM levels up until 1000 hours and the PM level should be collected as close to 1600 as possible while remaining inside regular work schedules.
- Normally, the serum cortisol reaches a maximum in the morning and declines to a minimum around midnight. The upper limit of the normal at 0700 hours 0900 hours is approximately 620 nmol/L, at 1600 hours is 460 nmol/L and at 2000 hours is 0.50 (50 %) of the 0800-hour result.
- Absence of the diurnal rhythmic fluctuations of serum cortisol or an elevation above normal suggests adrenocortical hyper function. It may be necessary to proceed to the Dexamethasone Suppression Test (DEXAMTHASONE) or ACTH Stimulation Test (ACTHS).

## Cortisol - Urinary Free (Unconjugated Corticoids): order CORT-24H

- In cases of suspected adrenocortical hyper function, it may be desirable to measure the urinary excretion of free cortisol. However, its determination is of little use in the assessment of adrenocortical hypo function.
- Collect a 24-hour urine specimen with no preservative and keep the specimen refrigerated during the collection period to prevent bacterial growth.

# Dehydroepiandrosterone Sulfate (DHEAS): order DHEAS

- Testing for DHEAS instead of 17-Ketosteroids has been suggested for estimating adrenal androgen production. Included below are some examples where this diagnostic information is pertinent:
  - a) assessment of adrenal hyperplasia
  - b) adrenal tumors
    - i. adrenal cortical tumors values are higher in adrenal carcinomas than in adrenal adenomas
    - ii. ectopic ACTH-producing tumors
  - c) Cushing's disease
  - d) polycystic ovary disease
  - e) adrenarche
  - f) delayed puberty
  - g) hirsutism

## **Dexamethasone Suppression Tests**

- Once the diagnosis of Cushing's syndrome is suspected by the demonstration of increased cortisol production and the absence of diurnal variation of plasma cortisol, suppression tests may be carried out to determine whether the syndrome is due to abnormal regulation of ACTH secretion or to other factors, such as adrenocortical tumors.
- The physician must provide the patient with a prescription for the Dexamethasone to take to the Clinical Investigation Unit (CIU).

## Rapid Overnight Inhibition Test: order DST

This test is a screening test for Cushing's syndrome. Dexamethasone suppresses ACTH and cortisol production in normal patients but not in patients with Cushing's syndrome.

#### Test Procedure

Day 1 at 0800 hours - Draw baseline serum cortisol specimen. Day 1 at 2300-2400 hours - Administer 1 mg oral Dexamethasone. Day 2 at 0800 hours (next day) - Draw 2<sup>nd</sup> serum cortisol specimen.

#### **Interpretation**

In normal and obese patients, serum cortisol level falls to less than 140 nmol/L, whereas in patients with Cushing's syndrome it often remains above 280 nmol/L.

1.1% of normal, 13% of obese and 23% of hospitalized or chronically ill patients give false positive results.

#### Four Day Dexamethasone Suppression Test: order CORT-R x 3

#### Test Procedure

- Day 1 Draw baseline serum cortisol specimen.
- Day 2 Administer 0.5 mg q6h oral Dexamethasone.
- Day 3 Administer 0.5 mg q6h oral Dexamethasone.
- Day 4 Draw serum cortisol specimen. Administer 2.0 mg q6h oral Dexamethasone.
- Day 5 Administer 2.0 mg q6h oral Dexamethasone.
- Day 6 Draw serum cortisol specimen.

Interpretation - Three examples of serum cortisol response:

Day	Normal Ad	drenal Hyperplasi	a Adrenal Tumor	
1	420 nmol/L	1100 nmol/L	1700 nmol/L	
4	85 nmol/L	670 nmol/L	1700 nmol/L	
6	85 nmol/L		400 nmol/L	

1700 nmol/L

The purpose of the small dose (2 mg per day Dexamethasone) is to separate patients with true hyper secretion of cortisol from those without this sign. Normal patients usually show decreases to less than 140 nmol/L serum cortisol. Patients with Cushing's syndrome show incomplete or no suppression.

The large dose (8mg per day for two days) Dexamethasone test is used to separate patients with Cushing's disease from those with other varieties of Cushing's syndrome, e.g. adrenocortical adenomas or carcinomas, or presence of ectopic sources.

90% of patients with Cushing's disease demonstrate suppression, < 276 nmol/L, whereas patients with adrenal adenoma, carcinoma and ectopic ACTH producing tumors do not. Failure of suppression can occur in patients with severe endogenous depression and in women who are taking estrogens.

Significant cross reactivity occurs with prednisolone, 21-deoxycortisol & deoxycorticosterone.

## Testosterone (Total) - Clinical Uses: order TEST

- In the male, testosterone is mainly synthesised in the Leydig cells of the testes. Its production is regulated by a feedback mechanism in the hypothalamus and pituitary. The hypothalamus produces gonadotropin releasing hormone (GTRH), also called LHRH, which induces the pituitary to secrete luteinizing hormone (LH) and follicle stimulating hormone (FSH). LH in turn stimulates the Leydig cells of the testes to secrete testosterone. Testosterone is responsible for the development of the prostate and seminal vesicles as well as the growth of facial, pubic and axillary hair. Its assay, therefore, is of help in evaluating the hypogonadal state. Common causes of decreased testosterone levels in males include hypogonadism, orchidectomy, estrogen therapy, Klinefelter's syndrome, hypopituitarism, testicular feminization, and hepatic cirrhosis.
- In the female, testosterone levels are normally much lower than those in the male. Testosterone in the female comes from three sources. It is secreted in small quantities by the adrenal gland and the ovaries, but in normal women 50 60% of the daily testosterone production arises from peripheral metabolism of its precursors, mainly androstenedione. Common causes of increased serum testosterone levels in females include polycystic ovaries (Stein-Leventhal syndrome), ovarian tumors, adrenal tumors, and adrenal hyperplasia. Virilization in women is associated with the administration of androgens or with endogenous overproduction of testosterone. There appears to be a correlation between the level of serum testosterone and the degree of virilization in women.

## Bioavailable Tesosterone – Clinical Uses: order TESTB

 Bioavailable Testosterone measurement by ammonium sulphate precipitation is replaced with calculation using the Vermeulen mass-action formula based on measured serum albumin, sex hormone binding globulin (SHBG), and total testosterone concentrations. Bioavailable Testosterone results include SHBG, total testosterone, and calculated bioavailable testosterone. It is the second line laboratory investigation on androgen status.

## Withdrawal of Urinary 17-Ketosteroid and 17-Hydroxycorticoids Tests

Since the direct serum androgen tests for DHEAS and testosterone are now available and are
performed at DECRH together with our existing serum (and urinary) cortisol assays, the
indications for urinary 17-ketosteroids and total 17-hydroxycorticoids in assessing the adrenal
cortical and adrenal androgen functions will be limited. In the past, 17-ketogenic steroids detected
by the 17-hydroxycortosteroid assay were used as an indirect indication of pregnanetriol levels in
patients suspected of congenital adrenal hyperplasia. This is now replaced by the specific serum
17-hydroxyprogesterone assay (OHPROG). We will, therefore, no longer process requests for
urinary 17-ketogenic steroids or 17-ketosteroids.

#### Captopril Stimulation Test: order ALDO and RENIN for the appropriate timed specimen

#### Prerequisite

Discontinue medications (except potassium) for at least 2 weeks and the diuretic, Spironolactone for at least 3 weeks. No special diet is required. This test is recommended when risks from volume overload preclude the use of other procedures.

#### Rationale

Captopril essentially inhibits the conversion of angiotensin I to II thus removing the angiotensin II stimulus to aldosterone secretion.

#### Test Procedure

An overnight fast is required. The patient must be in a comfortable seated position. Blood specimens for aldosterone and renin are drawn at 0800 hours. The patient then receives 25 mg captopril. Two hours later (1000 hours) specimens are again drawn for aldosterone and renin.

Interpretation	Normal response after Captopril Stimulation:
	Aldosterone - < 240 ρmol/L
	Renin is normal or high

Primary aldosteronism is defined as failure to suppress plasma aldosterone to less than 240  $\rho$ mol/L 2 hours after captopril stimulation (25 mg of oral captopril) as well as exhibiting a low plasma renin level.

Creatine Kinase Iso-enzymes (CK-MB) – This test is no longer available

**NOTE:** LDH Isoenzymes - This test is no longer available.

# **Gastrin Challenge Test** (Secretin Stimulation): order **GASCT**; collect 0, 2, 5 and 10-minute specimens

The majority of patients with peptic ulcer disease resulting from the hyper secretion of gastrin by gastrinomas (Zollinger-Ellison syndrome) will demonstrate fasting serum gastrin levels above 1,000 ng/L. In patients in whom the diagnosis of a Zollinger-Ellison syndrome is suspected, but in whom the fasting serum gastrin level is less than 1,000 ng/L or less than ten times the normal median value of serum gastrin for the laboratory method, several techniques for provoking gastrin hyper secretion have been advocated. These include calcium infusion, a protein meal, and secretin stimulation. In general, the secretin stimulation technique has been found to be the most reliable, the simplest to perform and the one with the least variability and patient intolerance.

#### **Indications**

The test is indicated in patients with a very aggressive ulcer diathesis, in patients with ulcer recurrence following preventive surgery, and in any patient scheduled for peptic ulcer surgery in which the fasting gastrin level is higher than 50 ng/L, even though it is NOT diagnostically elevated. Exceptions to the latter category are patients with uremia, previous vagotomy, and pyloric obstruction, in all of whom high fasting gastrin levels may be anticipated.

 This is a CONTROLLED document. LAB-3-ADM-LUM-00001

 Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use

 Laboratory User Manual
 Version 40.0
 Page 43 of 242
 Effective Date: January 24, 2022

# Gastrin Challenge Test (continued)

Test Procedure

- 1. The patient should discontinue anti-secretory drugs for at least 72 hours prior to the test. These include anti-cholinergics and H2 receptor blockers.
- 2. The test is performed in the morning after a 12 hour fast.
- 3. A fasting blood sample is drawn for basal gastrin level initially.
- 4. A dose of 1 to 2 mL/kg of body weight of Ferring secretin is then injected intravenously as a 5 minute bolus.
- 5. At 2, 5 and 10 minutes after secretin injection, repeat blood samples for gastrin levels are drawn.

Interpretation

An increased post-secretin serum gastrin level of  $\geq$  110 ng/L over the fasting gastrin level is indicative of a gastrinoma.

Other types of the hypergastrinemic syndrome, including antral G cell hyperplasia, retained antrum, and non-tumorous hypergastrinemic hyperchlorhydria, do not show this characteristic result.

# Gestational Diabetic Screening: order GDS

All pregnant women should be screened for gestational diabetes mellitus (GDM) between 24 and 28 weeks gestation. The patient does not need to fast prior to the glucose load. At any time of the day, a drink containing 50 grams glucose is given and must be consumed within 5 minutes. The patient is not allowed anything to eat or drink (except water) until the specimen is drawn 1 hour later. For patients who cannot tolerate the 50g drink, they may instead consume the equivalent glucose in tablet form. Dex4 (4g sugar tablets) are available from pharmancy. The patient must consume 12.5 tablets with not more than 250 mL of water. The tablets should be consumed within ~3 minutes.

Interpretation - 1 hour PC

< 7.8 mmol/L:	Normal
≥ 11.1 mmol/L:	GDM
7.8 – 11.0 mmol/L:	Perform 75 gram Prenatal GTT

Women with multiple risk factors should be screened during the first trimester and reassessed during subsequent trimesters.

This is a CONTROLLED document, LAB-3-ADM-LUM-00001

# **Glucose Tolerance Tests**

## Information

- The oral glucose tolerance test (OGTT) has been widely used in the diagnosis of diabetes mellitus (DM) to assess carbohydrate intolerance. It is, however, not always realised that variation in the glucose load given, as well as the effect of inactivity, diet, and a number of drugs such as thiazides, glucocorticoids, nicotinic acid, β-adrenergic blocking agents and phenytoin, will alter the response of the OGTT. If diet has been low in carbohydrate for as little as 3 days preceding the test, for instance, OGTT may be abnormal. Similarly, subjects who either have inadequately fasted or fasted too long before the tests may have the glucose intolerance exaggerated.
- The Canadian and American Diabetes Associations published position statements regarding the diagnosis and classification of diabetes mellitus and other categories of glucose intolerance.
   Diagnosis of diabetes can be made in the following **four** ways:
  - 1. Fasting serum glucose  $\geq$  7.0 mmol/L
  - 2. A1C  $\geq$  6.5% (in adults)
  - 3. Two hour glucose  $\geq$  11.1 mmol/L during 75 gram OGTT
  - 4. Elevation of random plasma glucose (≥ 11.1 mmol/L)
  - In the absence of symptomatic hyperglycemia (including polyuria, polydipsia and unexplained weight loss), if a single laboratory test results is in the diabetes range, a repeat confirmatory laboratory test (FPG, A1C, 2hPG in a 75 gram OGTT) must be done on another day. It is preferable that the same test be repeated for confirmation, but a random PG in the diabetes range in an asymptomatic individual should be confirmed with an alternate test. In the case of symptomatic hyperglycemia, the diagnosis has been made and a confirmatory test is not required. Confirmatory testing should not delay initiation of treatment to avoid rapid deterioration.

The following Oral Glucose Tolerance Tests are available:

- 1. Glucose Tolerance Test 2 Hour : order GTT2 Collect 0 and 2 hour specimens
- 2. Glucose Tolerance Test Prenatal: order GTTP Collect 0, 1 and 2 hour specimens

# Glucose Tolerance Tests (continued)

#### **Procedure**

- 1. The patient should be on an unrestricted diet with unrestricted physical activity three days preceding the test.
- 2. The patient must fast at least 8 hours and not more than 16 hours. Nothing of food value, either liquid or solid, should be ingested after midnight prior to the day of testing. Water is allowed.
- 3. Collect a fasting specimen of blood into a gray-top tube and invert gently and thoroughly to mix. The actual test volume required is less than 1 mL but the vacuum tube must be allowed to draw at least half capacity to prevent inhibition by excess fluoride.
- 4. Adults and children of 12 years and older are given a chilled flavoured drink containing 75 grams of glucose. Younger children (less than 42.9 kg) are given a measured portion of the adult drink containing 1.75 grams glucose per kg body weight with a maximum of 75 grams. Timing is started as the patient begins to drink the dose that must be consumed in less than 5 minutes. Additional specimens may be collected at extended times as required by the attending physician for diagnosis of hypoglycemia. The laboratory does not supply the drink. For DECRH patients the drink is available from the Pharmacy. For patients who cannot tolerate the 75 g drink, they may instead consume the equivalent glucose in tablet form. Dex4 (4 g sugar tablets) are available from pharmancy. The patient must consume 19 tablets with not more than 250 mL of water. The tablets should be consumed within ~5 minutes.
- 5. Some walking about but no strenuous exercise is permitted during the test. No caffeine or nicotine is allowed during the test. Nothing of food value may be ingested after the drink until the test is completed. If pallor, nausea, sweating or fainting occurs, the test should be discontinued and repeated at another time.
- For prenatal women, if the 1 hour PC in the 50 gram dose screening test (order GDS) is 7.8 – 11.0 mmol/L, a 75 gram Prenatal GTT should be performed (order GTTP). In this case, fasting, 1 hour PC and 2 hour PC glucose samples are to be taken. Drinking water is permitted during the test.

# Glucose Tolerance Tests (continued)

**Interpretation** 

- 1. Glucose Tolerance Test 2 Hour: order GTT2
  - a) Glucose levels in the normal non-pregnant adult:

Fasting	< 6.1 mm	10l/L
- ·		

- 2 hour < 7.8 mmol/L
- b) Diabetes Mellitus in non-pregnant adult: The fasting glucose level is > 7.0 mmol/L. If the fasting level is < 7.0 mmol/L, the 2 hour level must be > 11.1 mmol/L.
- c) Impaired glucose tolerance isolated (IGT): The fasting glucose level is < 6.1 mmol/L and 2 hour glucose level is 7.8 11.0 mmol/L.
- d) Impaired fasting glucose isolated (IFG): The fasting glucose level is 6.1 6.9 mmol/L and the 2 hour glucose level is < 7.8 mmol/L.</li>
- e) Combined IGT and IFG: The fasting glucose level is 6.1 6.9 mmol/L and the 2 hour glucose level is 7.8 11.0 mmol/L.

## 2. Glucose Tolerance Test – Prenatal: order GTTP

If 1 or more of the following levels are met or exceeded, the diagnosis is GDM.

- Fasting 5.3 mmol/L
- a) 1 hour 10.6 mmol/L
- b) 2 hour 9.0 mmol/L

# **Growth Hormone (Somatotropin) Assays**

## Single Fasting Growth Hormone Assay: order GH

• The diagnosis of hyposecretion of growth hormone cannot normally be made by assay of the baseline serum growth hormone level, since low levels are not significant. Single assays are therefore of little use and a response to a challenge test is required.

**Growth Hormone Challenge Test - Arginine Stimulation:** order **GHCT**; collect 0, 30 and 60 minute specimens for Growth Hormone

- A falling blood glucose concentration triggers secretion of growth-hormone-releasing-factor from the hypothalamus that subsequently stimulates the anterior pituitary to secrete growth hormone. Administration of arginine or L-dopa is also able to stimulate human growth hormone release.
- Arginine stimulation has the advantage over insulin-induced hypoglycemic stimulation of not requiring a hypoglycemic stimulus with the attendant hazards. It is therefore a safer procedure and reliably indicates the diagnosis of hypopituitarism in preadolescent children.

#### Test Procedure

- 1. It is recommended that patients fast for 8 12 hours.
- 2. A fasting specimen for serum growth hormone is drawn.
- 3. Infusion of arginine monohydrochloride by slow IV is given over half an hour (arginine dose for children is usually 0.5 g/kg body weight).
- 4. Blood samples for growth hormone are drawn at 30 and 60 minutes subsequent to the start of infusion.

#### **Interpretation**

Growth Hormone Reference Ranges:

Baseline (fasting) level:  $< 5 \mu g/L$ Post arginine rise above baseline:  $> 5 \mu g/L$ Peak response:  $> 10 \mu g/L$ 

If baseline (fasting) Growth Hormone level is > 5  $\mu$ g/L, no increase may be seen.

# Growth Hormone - Glucose Suppression Test: order GLU-R, GH and IGF-1 for each timed specimen.

#### Test Procedure

- 1. It is recommended that patients fast for 8 12 hours.
- 2. Fasting specimens for GLU-R, GH and IGF-1 are taken.
- 3. A drink containing 75 grams of glucose is administered.
- 4. 2 hours after drink draw specimens for GLU-R, GH and IGF-1.

#### **Interpretation**

The response in acromegaly may be either, no change in the basal level or a paradoxical increase of growth hormone. Normal individuals, on the other hand, will suppress growth hormone levels to < 2  $\mu$ g/L or undetectable levels 60-120 minutes after a 75 gram oral glucose load.

This is a CONTROLLED document. LAB-3-ADM-LUM-00001

## Lactose Tolerance Test: order LACTOSE; collect 0, 30, 45, 60 and 90 minute specimens.

- The patient must fast for 8 hours prior to and during the test. Outpatients treated with insulin should be advised to postpone the morning medication until after the blood is drawn. A fasting specimen of blood is collected. A suspension containing 50 g of lactose in 100-200 mL of tap water flavoured with a few drops of lemon juice is administered to adults. The children's dose is 1 g/kg of body weight. Blood samples are drawn at 30, 45, 60 and 90 minutes following administration of lactose.
- Invert each gray tube several times to mix. The actual volume required for the test is less than 1 mL. However, vacuum tube must be allowed to draw at least half capacity to avoid inhibition by excess fluoride.
- The laboratory does not supply the drink. For DECRH patients the drink is available from the Pharmacy.
- Some walking about but no strenuous exercise is permitted during the test. No caffeine or nicotine is allowed during the test. Nothing of food value may be ingested after the drink until the test is completed.
- Lactase deficiency will lead to fermentation of unhydrolyzed lactose by intestinal bacteria, producing gas and lactic acid. Please notify Chemistry if diarrhea frequently occurs during the testing period.

Change in glucose from fasting level:

Normal:	> 1.7	mmol/L
Inconclusive:	1.1 - 1.7	mmol/L
Abnormal:	< 1.1	mmol/L

# **Occult Blood Test:**

HHN-0752 Occult Blood Collection Instructions

**Saline Suppression Test:** order aldosterone, renin, cortisol and electrolytes for each timed specimen.

#### Rationale

Rapid volume expansion with intravenous saline should suppress plasma aldosterone in normal patients but not in patients with primary aldosteronism.

#### Test Procedure

- 1. Care must be taken to ensure that the patient is not hypokalemic before starting the test.
- 2. The patient is awakened at 0600 hours and kept in an upright posture for 2 hours.
- 3. Blood is drawn at 0800 hours for determination of serum aldosterone, renin, cortisol and electrolytes.
- 4. The patient then assumes a supine position, and 2 liters of isotonic saline, 0.9 g/dL, are infused over a 4 hour period.
- 5. Blood is drawn again at 1200 hours for serum aldosterone, renin, cortisol and electrolytes determination.

#### Interpretation

Normal patients show a serum aldosterone level of 140 pmol/L or less after saline infusion. Levels

greater than 280  $\rho$ mol/L are usually seen in patients with autonomously functioning aldosterone-secreting tumors (primary aldosteronism).

# Thyroid Autoantibodies – TRAb, TPOAb, and TGAb

• Autoantibodies are produced against human thyroid tissue and its secretions produce disorders that may involve stimulation (as in Graves' disease) or suppression and destruction of the gland (as in Hashimoto's thyroiditis). These autoantibodies are TSH receptor autoantibodies (TRAb), thyroperoxidase (TPOAb), and anti-thyroglobulin (TGAb).

## **Clinical Significance of Thyroid Autoantibodies**

• **TSH Receptor** Autoantibodies (TRAb): (mnemonic code: TRAB) Among the autoantibodies found in autoimmune thyroid disease (AITD), TRAb (it has multiple nomenclatures such as Long-Acting Thyroid Stimulator, Thyroid-Stimulating Immunoglobulins, Thyroid-Stimulating Hormone Receptor, and TRAb is preferred). TRAb is the most closely associated with disease pathogenesis. Almost all forms of autoimmune thyrotoxicosis (Graves disease, Hashitoxicosis, neonatal thyrotoxicosis) are caused by the production of TRAbstimulating autoantibodies. During pregnancy, the presence of TRAb is a risk factor for fetal or neonatal dysfunction as a result of the transplacental passage of maternal TRAb. It is recommended as the first-line test for autoimmune thyrotoxicosis.

TRAb immunoassay usually does not differentiate the stimulating Ab (TSI), inhibiting Ab (TSH-Binding Inhibiting Immunoglobulin, TBII), or neutral Ab, but mostly it detects the TSI. In very rare situations TBII or TSI is needed specifically, it will be sent to the USA for bio-assays.

- Anti-thyroperoxidase Antibody (TPOAb): (mnemonic code: ANTI-TPO) TPOAb is frequently (50-90%) present in the sera of patients with autoimmune hypothyroidism. However, occasionally patients with AITD have negative thyroid autoantibody test results.
- Anti-thyroglobulin Antibody (TGAb): (mnemonic code: ANTI-TG) TGAb is often used aas an adjunct in the diagnosis of AITD. In individuals with autoimmune hypothyroidism, 30% to 50% will have detectable TGAb. The presence of TGAb, which occurs in 15% to 30% of thyroid cancer patients, could result in misleading (usually underestimation) in immunometric thyroglobulin (TG) assay results. It should be measured in every serum specimen sent to the laboratory for thyroglobulin testing.
- The use of thyroid autoantibody measurements for monitoring the treatment for AITD is generally not recommended. This is not surprising since treatment of AITD addresses the consequence (thyroid dysfunction) and not the cause (autoimmunity) of the disease. Thyroid autoantibodies may persist after apparent clinical cure.

**Thyrotropin Releasing Hormone (TRH) Stimulation Test:** order **TSH** for each timed specimen; collect 0, 20, 30, 45 and 60 minute specimens

- This test is designed primarily to distinguish between different forms of hypothyroidism and for confirmation of hyperthyroidism. A zero time sample is drawn for TSH, prolactin and FT4. The patient is then given 200  $\mu$ g of TRH intravenously and samples for TSH and prolactin are drawn at 20, 30, 45 and 60 minutes after the injection. The 45 minute specimen is also tested for FT4.
- In normal subjects, a peak TSH level occurs after 20 minutes and reaches values between 15 and 20 mU/L (20  $\mu$ U/mL). Levels gradually decline and return to basal values in approximately 2 hours.



Figure: Patterns of TSH response to TRH Stimulation

#### **Diagnostic Information**

- Exaggerated response, (> 35 mU/L), in primary hypothyroidism.
- Inadequate or no response in hypothyroidism due to pituitary deficiency (secondary) and in primary hyperthyroidism (except in TSH-producing tumors).
- In hypothyroidism secondary to hypothalamic disorders (tertiary), response of normal magnitude is seen, but peak may be delayed (> 60 minutes). These responses are not seen consistently, and differentiation of pituitary and hypothalamic hypothyroidism often requires other tests of thyroid and pituitary function.
- High doses of glucocorticoids can completely inhibit the TSH response to TRH stimulation.
- Women receiving oral contraceptives show an augmented TSH response to TRH stimulation.
- Synthetic TRH under the name <u>*Relefact TRH*</u> is available from DECRH Pharmacy.

# **Toxicology and TDM**

## **Acetaminophen Poisoning**

- Acetaminophen (N-acetyl-p-aminophenol, paracetamol) is metabolized in the liver primarily by glucuronide and sulphate-conjugation, but some is also transformed by a mixed function oxidase system into a highly reactive intermediate alkylating metabolite. Small amounts of the metabolite can be rendered harmless by conjugation with hepatic glutathione. If the dose however, is large, the hepatic glutathione can be depleted and excess metabolite is free to combine irreversibly with hepatocyte constituents. This may cause liver damage, and has to be considered in the increasing instances of an acetaminophen overdose.
- If such an overdose of the drug is suspected, blood should be sent to the laboratory for testing. The significance of the blood level, however, can only be interpreted if the time of ingestion is known. By determining the half-life of plasma acetaminophen (the time for the plasma level to decrease by one-half, usually 2 hours), one can arrive at a prognosis within a few hours after admission. In general, plasma concentrations of more than 1300  $\mu$ mol/L at 4 hours, and more than 330  $\mu$ mol/L at 12 hours after ingestion, are often associated with liver damage. The same applies to half-life values exceeding 4 hours. The longer it takes for the blood level to fall, the more severe will be the liver damage due to an overdose.
- Alcoholic, fasting or malnourished patients and those on chronic therapy with microsomal enzyme-inducing drugs (anticonvulsants) may have increased susceptibility to acetaminophen hepatotoxicity. Therefore, in the case of alcoholics or fasting patients, it has been proposed that the decision line be lowered by 50 - 70%. In these instances, the panic value is set at 666 µmol/L at 4 hours.
- An important aspect of the treatment of an overdose of acetaminophen is that the maximum efficiency is observed when N-acetylcysteine is administered within 8 hours. The efficiency declines sharply between 18 and 24 hours after ingestion; hence, prompt treatment of an overdose is essential.

## Ethanol

- The DECRH Regional Laboratory will assay specimens for ethanol for diagnostic purposes only, using the alcohol dehydrogenase method. Medico-legal specimens should be handed directly to a police officer who will deliver them to a provincial toxicologist.
  - Blood Specimen: A gray stoppered tube (4 mL) must be **completely filled** to avoid loss of the volatile alcohol into a partial vacuum.
  - Interpretation: Methanol, ethylene glycol and acetone do not react significantly in the alcohol dehydrogenase assay while 2-propanol and 1-propanol react at a rate of 0.3% and 6.0% respectively, relative to the reactivity of ethanol.

A serum/plasma result will be approximately 12% higher than a corresponding result for whole blood.

This is a CONTROLLED document. LAB-3-ADM-LUM-00001

Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use Laboratory User Manual Version 40.0 Page 53 of 242 Effective Date: January 24, 2022

# **Toxicology and TDM** (continued)

## **Digoxin / Quinidine Interaction and Digoxin Drug Interferences**

- Physicians, who order digoxin and quinidine to be given concomitantly, should be aware that quinidine significantly affects the serum digoxin level. It has been reported that on the average, the serum level of digoxin increases by a factor of two. The increase begins on the first day of quinidine administration and reaches a steady state in about 5 days. Even if digoxin is discontinued before quinidine is given, the residual digoxin level may rise.
- The mechanisms responsible for this effect appears to be a displacement of digoxin from tissue binding sites, and a slight decrease in renal clearance of the drug in the absence of other renal impairment. It is still very much a matter of debate whether the increased serum digoxin causes cardio toxicity, since the concentration of digoxin in the heart muscle may actually be decreased. However, gastrointestinal symptoms (nausea, vomiting, and anorexia) have been associated with the increased serum digoxin levels.
- Other orally active antiarrhythmic drugs (procainamide, disopyramide and mexiletine) may increase the plasma digoxin concentration.
- Spironolactone and canrenone may interfere with digoxin assays. High concentrations of • hydrocortisone (5000 mg/mL), prednisolone or dexamethasone may produce negative interference.
- "Digoxin-like" immunoreactive factor (DLIF) contained in sera of neonates, pregnant women and patients with advanced liver or renal disease can yield a falsely elevated digoxin level.

# Theophylline

- Theophylline is useful as a bronchodilator in the treatment of asthma as well as a central respiratory stimulant in the treatment of idiopathic apnea in premature infants. The pharmacological effects and toxicity of this drug are closely related to its concentration in the serum; hence, serum theophylline levels are monitored:
  - In the treatment of acute asthmatic symptoms, to allow an adjustment of the infusion rate of the drug.
  - In the treatment of chronic asthma, to determine the proper dosage for continuing therapy. \_
  - -In assessing changes in a patient's theophylline clearance when continuous theophylline therapy is indicated.
- The Chemistry Department at DECRH now measures theophylline levels with an immunochemical method that is highly specific for theophylline. Similar compounds found in food, drink and drugs such as caffeine, given at the same time; do not interfere with theophylline determination by this method.

Therapeutic Ranges: 55-110 μmol/L (asthma therapy)  $30-60 \mu mol/L$  (apnea, < 1 year old) >110 umol/L Toxic Range:

# Toxicology and TDM (continued)

# Blood Sampling for Therapeutic Drug Monitoring (TDM)

- Therapeutic drug monitoring is dependent upon accurate and precise timing both in the administration of the drug and the collection of the specimen. It is imperative that the elapsed time since the last dose be known.
- During long-term therapy, blood samples should be drawn during the "steady-state", i.e. after treatment with a constant dose after at least 5 half-lives. Levels obtained before a steady-state exists may be erroneously low or high; adjusting the dose on the basis of such a result could produce a toxic or sub therapeutic concentration.
- For chronically administered oral medications, the specimen is drawn at the time of the maximum serum concentration (peak) and/or immediately before administration of the next dose (trough), depending on the clinical indication.
- In the case of IV administration, drugs produce their trough concentration in serum immediately before the subsequent dose. A specimen for peak concentration must be drawn after the distribution phase is complete, usually 1 to 2 hours after dosing. Exceptions to this do occur; e.g. the distribution phase of digoxin is not completed until after 6 to 8 hours.
- In cases where toxicity is a concern or is suspected, sampling can be undertaken even if the steady-state has not been reached.
- Serum concentrations of drugs must always be interpreted with regards to the total disease picture in the patient. For example, digoxin, although at a therapeutic concentration in blood, may produce toxic symptoms in the presence of hypokalaemia, hypercalcemia, hypomagnesemia, hypothyroidism, acidosis and hypoxemia.

The table on the next page(s) of this manual can be used as a guide for ordering and interpreting serum drug levels.

# Toxicology and TDM (continued)

Table: T	herapeutic	Drug	Information
----------	------------	------	-------------

DRUG NAME (Category)	OPTIMUM CONCENTRATION (p) peak (t) trough	WHEN TO DRAW SAMPLES (p) peak (t) trough	NORMAL TIMES TO STEADY STATE (a) adults (c) children (n) neonates - 0 to 28 days	MONITORING CONSIDERATIONS
Amikacin (Antibiotic)	$\begin{array}{l} \mbox{Moderate to severe} \\ \mbox{infections:} \\ (p) 20-25 \mbox{ mg/L} \\ (t) 1-4 \mbox{ mg/L} \\ \mbox{Life threatening infections:} \\ (p) 25-30 \mbox{ mg/L} \\ (t) 5-8 \mbox{ mg/L} \\ \mbox{One daily dose regimen:} \\ (p) \geq 40 \mbox{ mg/L has been} \\ \mbox{suggested} \\ \mbox{Toxic Level:} \\ (p) > 30 \mbox{ mg/L} \\ (t) > 8 \mbox{mg/L} \\ \end{array}$	<ul> <li>(p) IM - 60 minutes after injection</li> <li>(p) 60 minutes after oral dose</li> <li>(p) IV - 30 minutes after 30 minute infusion</li> <li>(p) IV - end of 60 minute infusion</li> <li>(t) Immediately prior to dose</li> </ul>	<ul> <li>(a) 5-35 hours</li> <li>(c) 3.5-15 hours</li> <li>(n) Highly variable</li> <li>May be prolonged in patients with renal dysfunction.</li> </ul>	Renal function assessment needed for dosage adjustment. Dosage should be stable for at least three doses prior to sampling. Usually obtain peak and trough levels.
Amitriptyline or Elavil (Antidepressant)	For parent drug + demethylated metabolite, Nortriptyline: (t) 0.45-0.90 μmolL Toxic >1.80 μmol/L	(t) 12 hours after dose	3-8 days	
Carbamazepine or Tegretol (Anticonvulsant)	17-50 μmol/L	(t) Immediately prior to dose	2-6 days of chronic oral dosing.	Trough level preferred.
Cyclosporin (Immunosuppressant)	(t) 150-300 µg/L (2 hour) - see below	(t) Immediately prior to dose (2 hour) 2 hours $\pm$ 10 minutes post dose		
Cyclosporin 2 hour Optimum Concentrations for patients on Neoral:         Transplanted Organ       0-6 Months       6-12 Months       12+ Months         Liver       1000       800       600         Kidney       1700       Pending       1200         Heart       1500       800-1200       800-1200         Lung       1500-1700       Pending       Pending				
Digoxin or Lanoxin (Cardiac)	0.6 – 1.3 nmol/L (for heart failure) 1.0 – 2.0 (for atrial fibrillation)	Immediately prior to dose or 6-24 hours after dose	5-7 days in patients with normal renal function.	Dosage should be stable for 5-7 days in patients with normal renal function. The time to steady-state is prolonged in patients with decreased renal function. Levels taken within 6 hours of dose may be artificially elevated.
Disopyramide or Norpace or Rythmodan (Cardiac)	6-18 μmol/L	(p) 2-3 hours after oral dose (t) Immediately prior to dose	(a) 20-50 hours	Trough provides best guide for dosage adjustment.
Ethosuximide or Zarontin (Anticonvulsant)	280-710 μmol/L	(t) Immediately prior to dose or at least 12 hrs post dose	(a) 8 days (c) 5 days	Trough level preferred.
Gentamicin (Antibiotic)	Multiple daily dose regimen: (p) 4-8 mg/L (t) < 2 mg/L Once daily dose regimen or extended internal dosing: consult Pharmacy.	<ul> <li>(p) IM – 2 hours after injection</li> <li>(p) IV – 60 minutes after completion of traditional IV infusion</li> <li>(p) 60 minutes after the initiation of an extended interval infusion</li> <li>(t) 30 minutes before the dose</li> </ul>	<ul> <li>(a) 2.5-15 hours (&lt; 30years) 7.5-75 hours (&gt; 30years)</li> <li>(c) 2.5-12.5 hours</li> <li>(n) 10-45 hours</li> <li>May be prolonged in patients with renal dysfunction.</li> </ul>	Renal function assessment needed for dosage adjustment. Doses should be stable for at least three doses prior to sampling. Usually obtain peak and trough levels.

DRUG NAME (Category)	OPTIMUM CONCENTRATION (p) peak (t) trough	WHEN TO DRAW SAMPLES (p) peak (t) trough	NORMAL TIMES TO STEADY STATE (a) adults (c) children (n) neonates - 0 to 28 days	MONITORING CONSIDERATIONS
Imipramine or Tofranil (Antidepressant)	For parent drug + demethylated metabolite, desipramine: (t) 0.64-125 μmol/L Toxic >1.80 μmolL	(t) Immediately prior to AM dose or 10-12 hours after dose	2-5 days	
Lithium (Antimanic)	0.8-1.2 mmol/L	12 hours after dose	5-7 days	Draw levels twice weekly during acute phase. If changes in dose are made, take level in 5-7 days. Outpatient levels should be done once a month for three months, then every three months.
Nortriptyline or Aventyl (Antidepressant)	(t) 0.45-0.90 μmol/L Amik + Nort: Toxic >1.8μmol/L	(t) Immediately prior to AM dose or 10-12 hours after dose	4-20 days	
Phenobarbital or Phenobarb (Anticonvulsant)	65-175 μmol/L	(t) Immediately prior to dose	(a) 10-25 days (c) 8-15 days	
Phenytoin or Dilantin (Anticonvulsant)	(adult) 40-80 μmol/L (neonates) 24-56 μmol/L	(t) Immediately prior to dose (p) IV - 60 minutes after end of infusion	1-5 weeks	Trough levels are generally measured. In children levels may fluctuate necessitating serial serum concentrations. A trough level should be taken one week after initiating therapy and again in 3-5 weeks.
Primidone or Mysoline (Anticonvulsant)	23-55 μmol/L	(t) Immediately prior to dose	50-60 hours Note: Phenobarb levels appear in 5-7 days	Primidone is partially metabolized to Phenobarb so both levels should be measured.
Procainamide or Pronestyl (Cardiac)	Procainamide 17-42 μmol/L NAPA 22-72 μmol/L	IV loading dose: Immediately after dose Followed by IV continuous infusion: 2 hours after the beginning of the maintenance infusion Oral - (t) Immediately prior to dose	Procainamide: 15 - 25 hours NAPA: 30-50 hours	Both procainamide and its metabolite NAPA are pharmacologically active. Absorption may be slow in some patients resulting in high levels at the end of the dosage interval. Take several samples.
Quinidine (Cardiac)	6.2-15.4 μmol/L	(t) Immediately prior to dose	(a) 30-50 hours	Trough measurements give the most reliable index of serum concentration.
Tacrolimus or FK 506 (Immunosuppressant)	(t) see below	(t) Immediately prior to dose (12 hour trough)		
	Tacrolimus (FK 506) Optimum       Transplanted Organ     Wee       Liver     5-       Kidney     10       Bone Marrow     10	Concentrations (μg/L):           k 1-4         Long-Term           15         3-10           -20         5-10           -20         10-20		

 This is a CONTROLLED document. LAB-3-ADM-LUM-00001

 Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use

 Laboratory User Manual
 Version 40.0
 Page 57 of 242
 Effective Date: January 24, 2022

DRUG NAME (Category)	OPTIMUM CONCENTRATION (p) peak (t) trough	WHEN TO DRAW SAMPLES (p) peak (t) trough	NORMAL TIMES TO STEADY STATE (a) adults (c) children (n) neonates - 0 to 28 days	MONITORING CONSIDERATIONS
Theophylline (Bronchodilator)	55-110 μmol/l (asthma therapy) 30-60 μmol/l (apnea, <1 year old)	Oral - sustained release: (p) Twice daily products: about 4 hours after dose. Once daily products: about 10 hours after dose. Consult individual product monographs. (t) Immediately prior to dose Liquid and plain uncoated tablets: (p) 1-2 hours after liquid dose, 2 hours after tablet dose (t) Immediately prior to dose IV loading dose: Sample 30 minutes after an IV loading dose. Followed by IV continuous infusion: 24-48 hours after the beginning of the maintenance infusion.	(a) 2 days (c) 1-2 days Newborn 120 hours Premature 150 hours	Dosage should be stable for 48 hours before sampling. Trough levels may be monitored to assess efficacy at the end of the dosing interval.
Tobramycin (Antibiotic)	Multiple daily dose regimen: (p) 4-8 mg/L (t) < 2 mg/L Once daily dose regimen or extended internal dosing: consult Pharmacy.	<ul> <li>(p) IM – 2 hours after injection</li> <li>(p) IV – 60 minutes after completion of traditional IV infusion</li> <li>(p) 60 minutes after the initiation of an extended interval infusion</li> <li>(t) 30 minutes before the dose</li> </ul>	<ul> <li>(a) 2.5-15 hours (&lt; 30years)</li> <li>7.5-75 hours (&gt; 30years)</li> <li>(c) 2.5-12.5 hours</li> <li>(n) 10-45 hours</li> <li>May be prolonged in patients with renal dysfunction.</li> </ul>	Renal function assessment needed for dosage adjustment. Doses should be stable for at least three doses prior to sampling. Usually obtain peak and trough levels.
Valproic Acid or Depakene or Valproate (Anticonvulsant)	350-700 μmol/L	(t) Immediately prior to dose (p) 2-3 hours after dose	2-3 days	Trough levels are generally measured.
Vancomycin (Antibiotic)	(t) 10-15 mg/L	<ul> <li>(t) Immediately prior to dose</li> <li>(p) Peak levels should only be ordered in rare situations to facilitate pharmacokinetic modeling.</li> <li>Draw peak: IV - 30 minutes after end of infusion, IM and oral - 60 minutes after dose.</li> </ul>	4 doses (2 days)	Toxicity may be potentiated with concurrent administration of an aminoglycoside

# **Unit Conversion for Some Drugs and Toxic Agents**

Drug	Blood Toxic Level (SI Units)	Conversion	Traditional Units
Acetaminophen (Tylenol)	Variable µmol/L	μmol/L x 0.15 = μg/mL	μg/mL
Alcohol (ethyl)	70 mmol/L	mmol/L x 4.6 = mg/dL	mg/dL
Alcohol (methyl)	6.2 mmol/L	mmol/L x 3.2 = mg/dL	mg/dL
Amitriptyline (Elavil)	1.8 μmol/L	μmol/L x 280 = ng/mL	ng/mL
Barbiturate – Phenobarbital	170 μmol/L	μmol/L x 0.23 = μg/mL	μg/mL
Carbon Monoxide (carboxyhemoglobin)	0.15 (decimal fraction)	100	%
Chlordiazepoxide (Librium)	16.7 μmol/L	μmol/L x 300 = ng/mL	ng/mL
Diazepam (Valium)	17.55 μmol/L	μmol/L x 285 = ng/mL	ng/mL
Digoxin	3.0 nmol/L	nmol/L x 0.78 = ng/mL	ng/mL
Disopyramide	20.6 µmol/L	μmol/L x 0.34 = μg/mL	μg/mL
Ethylene glycol	5 mmol/L	mmol/L x 6.2 = mg/dL	mg/dL
Imipramine (Tofranil)	1.8 μmol/L	μmol/L x 280 = ng/mL	ng/mL
Methaqualone	40 μmol/L	μmol/L x 0.25 = μg/mL	μg/mL
Phenytoin	120 μmol/L	μmol/L x 0.25 = μg/mL	μg/mL
Salicylates (ASA)	2.0 mmol/L	mmol/L x 138 = µg/mL	μg/mL
Theophylline	110 μmol/L	μmol/L x 0.18 = μg/mL	μg/mL

NOTE: mg/dL = mg% and  $\mu g/mL = mg/L$ 

e.g.  $1 \text{ mg/dL} = 1 \text{ mg\%} = 10 \mu \text{g/mL}$ 

e.g.  $1 \text{ mg} = 10^3 \mu g (1,000 \mu g) = 10^6 \text{ ng} (1,000,000 \text{ ng})$ 

# **Urine, 24 Hour Specimen - Collection Instructions**

For proper evaluation of tests performed on a 24 hour urine sample, the patient must be given the following instructions in order to insure a complete and accurate collection.

Please refer to Form# HHN-0858 - 24 Hour Urine Collection Patient Instructions

Please refer to Form # HHN-0840 - Diet and Drug Restrictions Prior to 24 Hour Urine Collection for restrictions.

See <u>Section 7: Laboratory Tests - Alphabetical List</u> in this manual for the **proper collection bottle** (with or without preservative).

# Instructions for the Collection of Urine for Urinalysis

- A sterile, screw-capped jar must be used. This may be obtained from the Specimen Collection Unit or from the Laboratory.
- The Specimen Collection Unit or Laboratory will label the specimen container with the appropriate personal and test information.
- Whenever possible obtain an early morning specimen or allow urine to remain in the bladder for at least 4 hours before collecting.
- > Add date and time of collection to the label.
- If you get urine on the outside of the jar, put the cap back on and wipe the outside of the jar with a disinfectant and place in a bag for transport.
- Keep the urine refrigerated and bring back to the Specimen Collection Department or Laboratory of the hospital on the same day that it is collected as soon as possible.

## **Females**

- Remove the cap of the urine container.
- Wash hands thoroughly with soap and water.
- With one hand, spread the outside lips of the vagina apart and keep them separated until after the specimen has been collected.
- Begin voiding (peeing), but do not collect the first flow of urine.
- After 2-3 seconds, without stopping, place the sterile container in the stream of urine, and collect it until the jar is one-quarter to one-half full.
- Put the jar aside, and finish peeing into the toilet.
- Put the cap back on the jar.

## <u>Males</u>

- Remove the cap of the urine container.
- Wash hands thoroughly with soap and water.
- For circumcised men, no preparation is needed.
- For uncircumcised men. Pull back the skin covering the head of the penis with one hand and hold it there until the specimen has been collected.
- Wash the head of the penis thoroughly with warm water and pat dry with gauze or a clean towel to remove excess water.
- Begin voiding (peeing), but do not collect the first flow of urine.
- After 2-3 seconds, without stopping, place the sterile container in the stream of urine, and collect it until the jar is one-quarter to one-half full.
- Put the jar aside, and finish peeing into the toilet.
- Put the cap back on the jar.
- After 2-3 seconds, without stopping, place the sterile container in the stream of urine, and collect it until the jar is one-quarter to one-half full.
- Put the jar aside, and finish peeing into the toilet.
- Put the cap back on the jar tightly so it won't leak.

**Water Deprivation Test, Overnight:** order NA, OSMO, NA-U and Copeptin, if desired, for the appropriate specimen. Copeptin has replaced ADH and AVP as makers for the investigation of water balance disorders. (The Acid Test, Volume 32:2, July 4, 2019)

#### Prerequisite

Document polyuria (urine volume >2.5 L/d) and exclude glycosuria.

#### **Rationale**

Water deprivation provides a maximal stimulus for ADH release. This can be assessed indirectly by measuring urine osmolality or directly by measuring plasma ADH (Copeptin is used as the better surrogate marker). If urine remains hypo-osmolal during water deprivation, the administration of ADH can help differentiate central diabetes insipidus from nephrogenic diabetes insipidus.

#### Test Procedure

The patient is weighed at 2200 hours, at which time serum and urine samples are collected for the determination of sodium concentrations and osmolality. No oral intake is allowed until the test is terminated. Care is taken to be sure the patient's body weight does not fall by >5%. Beginning at 0600 hours, the patient is again weighed and urine collected hourly for measurement of volume and determination of osmolality. When urine osmolality is stable (a change of <30 mOsm/Kg for 2 consecutive hours, which usually takes 8-12 h to occur), samples are collected for serum osmolality (and plasma Copeptin, if desired). Five units of aqueous vasopressin (ADH) are given subcutaneously, and urine osmolality is measured 1 hour later. The test is then terminated.

#### Interpretation

Normal individuals will lose <3% of body weight, will not develop an elevated serum sodium or osmolality, and will produce a urine with an osmolality >400 mOsm/kg, with no further increase in urine osmolality after ADH administration. Patients with central diabetes insipidus may show an increase in serum osmolality and serum sodium; their urine will be less concentrated than normal (<400 mOsm/Kg; but often less than serum), and urine osmolality will increase >10% after ADH administration. Patients with nephrogenic diabetes insipidus will show serum and urine osmolality's similar to those seen with central diabetes insipidus during water deprivation; however, they will not show a significant increase in urine osmolality after ADH injection. In patients with psychogenic polydipsia, a normal response may be seen, but the period of water deprivation may need to be prolonged. However, some of them may show responses suggestive of diabetes insipidus. Measuring plasma Copeptin in response to hypertonic saline may be needed if the diagnosis remains unclear at this point, e.g.

- a baseline (without fluid deprivation) copeptin ≥ 21.4 pmol/L identifies nephrogenic diabetes insipidus with 100% sensitivity and specificity;
- following a fluid deprivation test, a copeptin level ≥ 4.9 pmol/L identifies primary polydipsia with 94-96% sensitivity and specificity;
- following a fluid deprivation test, a copeptin level 2.6 4.9 pmol/L identifies partial central diabetes insipidus with 94% sensitivity and specificity;
- following a fluid deprivation test, a copeptin level < 2.6 pmol/L identifies complete central diabetes insipidus with 95-100% sensitivity and specificity.

# **Section 3: Anatomical Pathology**

**Tissue Specimens - Collection Instructions** 

Anatomical Pathology specimen testing cannot be ordered through Meditech Order Entry. ALL tissue specimens must be accompanied by a Histopathology requisition.

Except for those listed below, specimens must be placed in an appropriate size container with the correct amount of 10% Buffered Neutral Formalin. The recommended ratio of Formalin to Tissue is 20 to 1.

The requisition requires at minimum all the following:

- Full name as indicated by legal document or Medicare card
- One unique identifier (this does not include the date of birth)
- Date of birth
- Full name of Ordering Provider
- Date and time of collection (Fixation time is critical for some specimens and is calculated using the collection time)
- Type of tissue (i.e. skin)
- Source of specimen (i.e. left arm)
- History and relevant clinical findings (i.e. itchy, red lesion increasing in size)
- Initials of the person completing the requisition
- **Must** be signed by the submitting physician

**Note:** Multiple specimens collected during the same surgical procedure must be identified as A, B, C, etc. and submitted on the same requisition.

The label on the specimen container must include:

- The patient's full name
- At least one unique identifier
- The organ/tissue site

Detachable labels with the requisition number are located at the bottom of each requisition. One label **must** be placed on each container submitted for that patient. This label may be used to record the patient's name, unique identifier and organ/tissue site. A demographic label may be used in conjunction with the label.

**Note:** If the specimen presents a known or suspected biohazard or is radioactive, the container must be labelled as such. Sentinel lymph nodes are <u>not</u> considered radioactive.

After removal from the body, place the tissue in fixative **immediately** to preserve tissue components, immunological binding sites, and general morphology. The lid must be securely tightened to prevent leakage. Fixation is crucial to all subsequent testing performed on the tissue. The DECRH Anatomical Pathology division uses 10% Neutral Buffered Formalin (some containers are labelled TISSUFIX or VIP-FIXATIVE). Containers may be ordered through Stores in 100 mL (TISSUFIX), 960 mL (VIP-FIXATIVE) or 20 L containers.

#### **Breast Specimens**

Cold Ischemic time (time between removal from body and the tumor comes in contact with formalin) **must** be kept to 60 minutes or less.

**DECH OR** – Specimen(s) are to be sent to Anatomical Pathology laboratory immediately upon removal from patient. After 4:30 pm, notify the pathologist on call.

**Satellite Sites OR** – The specimen(s) must be incised through the suspicious area, and paper towel or other similar material is placed in the incised area to allow fixative penetration. Immediately following this procedure, place the specimen in 10% Neutral Buffered Formalin fixative. Record the time the tissue is placed in formalin (cold ischemic time). The recommended ratio of formalin to tissue is 20 to 1.

#### Lymph Node Biopsies for Flow Cytometry (when lymphoma is suspected)

Flow Cytometry is often used as an adjunct to classify lymphomas. Sterile pink RPMI solution for flow cytometry cell preservation is routinely available in the DECRH O.R. If additional solution is required, call Anatomical Pathology (452-5478) Monday to Friday, 0630 to 1630.

- The tissue must be submitted in RPMI solution and **immediately** delivered to the Anatomical Pathology Laboratory marked STAT.
- If the specimen is collected at any site other than DECRH, it must be refrigerated (1-10°C) prior to and while in transit.
- Notify the Anatomical Pathology Laboratory that a specimen is being sent. If delivered after hours (16:30-6:30 Sunday to Thursday) Sample Receiving staff will refrigerate the specimen. During weekend hours (Friday 16:30 to Sunday 16:30) notify the pathologist on call.
- A second specimen submitted in formalin is recommended for routine histological examination.

**Note:** Specimens are referred to the Saint John Regional Hospital for processing. Monday-Thursday is preferred since flow cytometry specimens <u>must be processed within 24 hours</u> due to cell viability and limited technical staff trained in this highly specialized testing procedure.

#### **Tissue for Immunofluorescent Studies**

Zeus Tissue fixative is required for immunofluorescent studies, which comes in 10 mL glass bottles.

- The glass bottle must be labelled with the patient's name, one unique identifier and the organ/tissue site.
- To prevent breakage, place the bottle in a 90 mL urine/specimen container for delivery, which must also be correctly labelled.
- The specimen must be delivered **immediately** to the Anatomical Pathology Laboratory as it must not remain in this fixative for more than 5 days.
- A second biopsy from the same or similar site, placed in formalin, is recommended for routine histological examination as the tissue morphology will be distorted in Zeus fixative.
   Note: The Anatomical Pathology laboratory keeps Zeus fixative in stock. Call the Anatomical Pathology Laboratory when needed.

## Tissue for Cytogenetics/Chromosome Analysis (RAD)

Place the tissue in a sterile specimen container with a **small** amount of saline. **DO NOT** place the tissue in any fixative. Fixed tissue cannot be tested for cytogenetics or chromosome analysis.

An EDTA blood sample from the mother is required. Should the ordering provider choose, an EDTA blood sample from the father may be submitted as well.

Notify the Anatomical Pathology laboratory or pathologist on call of expected specimen and deliver it to the Laboratory at DECRH **immediately** after collection. **Note:** Specimens are referred to the IWK Hospital in Halifax, NS.

# Fetal Tissue for RAD (Rapid Aneuploidy Detection)

All specimens must be sent with:

- A completed Histopathology requisition (specify "RAD testing" in the Clinical Information area)
- A completed <u>IWK Health Centre Clinical Genomics Genetic Testing for IUFD &</u> <u>Products of Conception (POC)</u>
- A completed <u>IWK Health Centre Clinical Genomics Genetics Testing General</u> <u>Requisition</u> (one for the mother's EDTA blood sample and one for the father, if collected)
- A completed <u>IWK Pathology and Laboratory Medicine Request for Information</u>
- 2 extra patient labels.
- The Horizon forms "Labour and Delivery Permission for Respectful Disposition of Remains" or "Authorization for Cremation and Disposition of Ashes" must be included if the parent(s) wish the tissue to be released to a funeral home. If the tissue is to be respectfully disposed by IWK, the form <u>IWK Permission for Respectful Disposition of Remains</u>

Place the specimen in a container with a small amount of saline (less than 100 mL). <u>**Do not**</u> place it in any type of fixative. RAD testing cannot be performed on fixed tissue.

Delivery instructions:

- Monday to Friday 0800 to 1630 Notify the Anatomical Pathology division and deliver immediately to the Anatomical Pathology laboratory
- After hours Monday to Thursday Keep the specimen in the refrigerator (4 to 8°C) overnight. Deliver the specimen to the Anatomical Pathology laboratory between 0800-0830 the following morning
- Weekend or Holiday Contact the pathologist on call <u>in the morning</u> (0800 to 0830). Deliver the specimen to Sample Receiving

# **Tissue for Frozen Section**

Notify the Anatomical Pathology laboratory of specimen being sent as soon as possible. The specimen must be collected in a dry container (no fixative or other liquid). Deliver it to the Anatomical Pathology Laboratory immediately.

**Satellite sites** - Place the container inside a larger container with ice to keep it cool during transport. Indicate "Frozen Section" on the requisition. Lab staff will plan for immediate transport to the DECRH Anatomical Pathology laboratory.

This is a CONTROLLED document. LAB-3-ADM-LUM-00001

## Liver biopsies for Iron Analysis

Contact the Anatomical Pathology Laboratory prior to collecting the specimen. A metal Free collection container (6ml Becton Dickinson trace element EDTA tube) must be used. A second specimen submitted in formalin is recommended for routine histological examination.

## Muscle biopsies

Muscle biopsies are referred to the Saint John Regional Hospital (SJRH). The DECRH Anatomical Pathology department must be contacted at least 7 days prior to collecting the specimen to schedule it with the SJRH Anatomical Pathology department.

- The specimen must be collected by <u>no later than 0900</u>, Monday to Friday to allow time for the DECRH Anatomical Pathology department to send it to the SJRH by 1000.
- A complete patient history is required as well as a Histopathology requisition
- Submit a longitudinal section of muscle, 0.8-1.0 cm in diameter and 1.5-2.0 cm in length
- Place it on a piece of tongue depressor that will fit in a 90 mL container
- Dampen a piece of gauze with no more than 6-8 drops of saline and wrap it gently around the muscle and tongue depressor. Place it in the container.
- Call the Anatomical Pathology department to notify the specimen is on its way and send it STAT

## Kidney biopsies

Routine histology only will be performed at the DECRH unless otherwise requested. Immunofluorescent studies/electron microscopy will be referred to the Saint John Regional Hospital. The DECRH Anatomical Pathology department must be contacted <u>at least</u> 7 days prior to collecting the specimen to schedule it with the SJRH Anatomical Pathology department.

- The specimen must be collected by <u>no later than 0900</u>, Monday to Friday to allow time for the DECRH Anatomical Pathology department to send it to the SJRH by 1000.
- A complete patient history is required as well as a Histopathology requisition.
- A minimum of 2 cores are required, submitted in 2-5 mL of saline in a sterile 90 mL container. <u>Do not</u> use lens paper.
- Call the Anatomical Pathology department to notify the specimen is on its way and send it STAT

## Nerve biopsies

Nerve biopsies are referred to the Saint John Regional Hospital (SJRH). The DECRH Anatomical Pathology department must be contacted <u>at least</u> 7 days prior to collecting the specimen to schedule it with the SJRH Anatomical Pathology department.

- The specimen must be collected by <u>no later than 0900</u>, Monday to Friday to allow time for the DECRH Anatomical Pathology department to send it to the SJRH by 1000.
- A complete patient history is required as well as a Histopathology requisition
- Submit a section of nerve in a container with enough saline to cover the tissue.
- Call the Anatomical Pathology department to notify the specimen is on its way and send it STAT

#### **Deceased Patients**

Prior to transferring to the morgue, a deceased patient must be placed in a body bag and identified with two completed identification tags. One is attached to a toe and the second one is attached to the outside of the body bag. Any personal belongings being sent to the morgue must also be clearly identified.

An autopsy shall be performed after a documented request is submitted by one of the following:

- A Coroner (Coroner's case)
- A physician of an in-patient (Hospital Case)
- The legal next of kin of the decedent (Private autopsy)

Paediatric cases may be referred to the Saint John Regional Hospital at the discretion of the pathologist, Coroner or Physician. The requesting physician may consult with a pathologist on individual cases to determine whether a routine or paediatric autopsy is required, which will then determine which facility will perform the case

- <u>Coroner</u>'s case
- Hospital case
   <u>Referred</u> case
- <u>Private</u> autopsy
- Fetal/stillbirth autopsy please refer to <u>LAB-3D-AP-05013 Transferring Fetus or Infant to</u> <u>IWK Halifax for Autopsy</u>

#### Coroner's case:

- Any death that falls under Section 4 of the Coroner's Act, whether inside or outside of the hospital, must be reported to the Coroner. Please refer to <u>Coroner Notification HHN-SA-021</u>
- 2. Autopsies on Coroner's cases are performed at the request and authorization of the Coroner. Forms to be completed by the coroner are:
  - The Coroner's authorization form (provided by the coroner)
  - The morgue register (located in the Admitting department) when the decedent is admitted to the morgue

The coroner shall place the authorization form in the morgue register for morgue staff to collect when consulting the register each morning.

- 3. The <u>Deceased Patient Information</u> (300000319 (10/18)) form shall be completed by staff in the Admitting department:
  - When the nursing unit notifies the Admitting department of the death; or
  - When the coroner registers the deceased in the morgue register.

The form shall be placed in the morgue register.

Morgue staff shall make a copy and leave the original in the Admitting department

- 4. The decedent is admitted to the morgue by Morgue staff Monday to Friday between 0800-1600 hours. Security Services will admit after-hours and on holidays.
- 5. Morgue staff shall request the decedent's medical record from Health Records. Should the decedent have been a resident in another city/town in the province, such as URVH, the local Health Records department shall be contacted by the Morgue staff. Should the decedent originate from another province, the coroner may request the medical records if deemed relevant.
- 6. Once the autopsy is completed, the decedent is released only upon the authority of the Coroner.

7. Should the coroner determine that no autopsy is required, a physician or legal next of kin may request an autopsy. See the Hospital case or Private autopsy procedure below.

#### Hospital case:

- 1. When a death occurs in the hospital and is not reportable to the coroner, the attending physician may request an autopsy.
- 2. Consent must be given by the legal next of kin.
- The attending physician is responsible for ensuring form <u>LAB-3D-AP-F00080</u> <u>Authorization</u> for <u>Autopsy English</u> or <u>LAB-3D-AP-F00081</u> <u>Authorization for Autopsy French</u> is completed <u>and</u> signed by the legal next of kin and a witness. The completed form shall be sent to the Admitting department.
   **NOTE:** Telephone consent requires two witnesses, but ultimately <u>must</u> be signed by the

legal next of kin before the final report is signed out.

- 4. The nursing unit shall contact the Admitting department to notify them of a death.
- 5. The <u>Deceased Patient Information</u> form shall be completed by staff in the Admitting department and placed in the morgue register when they record the decedent information. The form shall be photocopied by Morgue staff and the original left in the register.
- 6. Morgue staff shall request the decedent's medical record from Health Records. Should the decedent have been a resident in another city/town in the province, such as URVH, the local Health Records department shall be contacted by the Morgue staff. Should the decedent originate from another province, medical records may be requested if deemed relevant.
- 7. Once the autopsy is completed, the pathologist assigned to the case shall notify the morgue attendant that the decedent can be released.
- 8. The Morgue attendant shall notify the Admitting department that the decedent may be released to a funeral home.
- 9. The funeral home shall contact the Admitting department to ensure the decedent can be released prior to making arrangements for transfer to the funeral home.

## **Referred case:**

Should the decedent from a hospital case require transfer to the Saint John Regional Hospital for autopsy or tissue/organ retrieval:

## a. The physician requesting the autopsy must:

- Contact the Saint John Regional Hospital Pathology department by telephone to arrange a date and time for autopsy or tissue/organ retrieval.
- Contact the funeral home of the family's choice by telephone to arrange for transport for the agreed upon date and time. The cost of transport is covered by the autopsy department and is billed by the funeral home.
- Communicate the date/time of the autopsy to the DECRH morgue staff. This will ensure any delay in transfer will be noticed and resolved as quickly as possible. The morgue staff will contact the physician and/or funeral home as well as the Anatomical Pathology manager to resolve any issue.

**Note:** Should the requesting physician be unable to contact the funeral home, they can contact a morgue attendant, relay the arranged date/time of the autopsy to be performed. The morgue attendant will then contact the funeral home for transport and document their actions.

- Refer to <u>Saint John Request For Autopsy</u> and <u>Saint John Authorization for</u> <u>Autopsy</u>. Forms in Appendix A and B **must** be completed prior to transfer of the deceased to Saint John.
- c. Once transferred to the Saint John Regional Hospital, the funeral home staff will wait until the autopsy or organ/tissue retrieval is complete to return the decedent to Fredericton within a suitable time. Should the decedent require return to the

morgue prior to burial/cremation, funeral home staff must register the arrival in the morgue register in the Admitting department.

#### Private autopsy:

- 1. When a death occurs in the hospital that is not reportable to the coroner and the attending physician does not request an autopsy, the legal next of kin may request one.
- The attending physician is responsible for ensuring form <u>LAB-3D-AP-F00080 Authorization</u> for Autopsy - English or <u>LAB-3D-AP-F00081 Authorization for Autopsy - French</u> is completed <u>and</u> signed by the legal next of kin and a witness. The completed form shall be sent to the Admitting department.
   **NOTE:** Telephone consent requires two witnesses, but ultimately <u>must</u> be signed by the legal next of kin before the final report is signed out.
- 3. The nursing unit shall contact the admitting department to notify them of a death.
- 4. The <u>Deceased Patient Information</u> form shall be completed by staff in the Admitting department and placed in the morgue register when they record the decedent information. The form shall be photocopied by Morgue staff and the original left in the register.
- 5. The legal next of kin is required to pay for the autopsy prior to commencement at the cashier's office, located in the lobby of the main entrance of the Dr. Everett Chalmers Regional Hospital.
- 6. The legal next of kin is required to present the receipt to the Admitting staff, who will make a copy to attach to the Authorization for Autopsy form.
- 7. Morgue staff shall request the decedent's medical record from Health Records. Should the decedent have been a resident in another city/town in the province, such as URVH, the local Health Records department shall be contacted by the Morgue staff. Should the decedent originate from another province, medical records may not be requested.
- 8. Once the autopsy is completed, the pathologist assigned to the case shall notify the morgue attendant that the decedent can be released.
- 9. The morgue attendant shall notify the Admitting department that the decedent may be released to a funeral home.
- 10. The funeral home shall contact the Admitting department to ensure the decedent has been released prior to making arrangements for transfer to the funeral home.

# **Section 4: Transfusion Medicine**

# **Blood Products Administration Resources on Skyline**

- To access, either:
  - 1) Click this link: <u>http://skyline/patientcare/blood/Pages/default.aspx</u>
  - 2) Or from the Skyline Home page, select "Tools & Resources" ► "Patient Care" ► "Blood Products Administration"

# **Administration of Blood Products Policy**

 Refer to Horizon Health Network Policy Number <u>HHN-CL-NU022 Administration of Blood</u> <u>Products</u>

# **Informed Consent**

- Informed Consent must be obtained as per Horizon Health Network Policy Number <u>HHN-SA-014 Consent to Treatment</u>
- Associated forms:
  - o HHN-0208 Consent for Rho (D) Immune Globulin (WinRho SDF)
  - o HHN-0210 Consent for Transfusion of Blood and/or Blood Products
  - o HHN-0211 Emergency Treatment without Consent
- Patient Information Pamphlet:
  - o HHN-0226 Blood Transfusion Informed Consent Patient Guide

# **Collecting Specimens for Transfusion Medicine**

• SPECIMEN COLLECTION and POSITIVE PATIENT IDENTIFICATION REQUIREMENTS:

The following are required at the bedside for positive patient identification immediately prior to collection:

- Requisition:
  - Meditech generated with order or
  - Pink Transfusion Medicine Laboratory Requisition
- Tube labels:
  - Meditech generated with order or
  - Generic patient demographic labels from the patient care location or
  - Hand written
- Patient Identification Wrist band
- After collection the <u>phlebotomist must sign the requisition with their full signature</u>, label the tubes along with their initials with the date and time of collection all while still at the "bedside". NOTE: Where phlebotomist signature is not practical such as specimens drawn in a sterile field in the OR, a healthcare worker **witnessing** the <u>phlebotomy</u> and the <u>patient identification</u>, may assume responsibility for such with THEIR full signature on the requisition and initials on the tube labels. They must also ensure printed by their signature on the requisition is "for" followed by the actual phlebotomist first and last name (printed)

# **Autologous and Directed Blood Donation**

• Autologous or Directed blood donations are not collected within Horizon Health Network. This service is provided by the Canadian Blood Services. An evaluation by the patient's own physician/surgeon is required and satisfaction of Canadian Blood Services' general eligibility requirements is mandatory (with some exceptions).

**NOTE:** The Choosing Wisely Canada campaign has recommended that physicians 'do not routinely order perioperative autologous and directed blood collection'

# **Turn around Times for Tests and Blood Product Preparation**

Transfusion Medicine Tests	Comments	Routine	ASAP	STAT	
Crossmatch (uncomplicated)		<5 hours*	<2 hours	<1 hour	
	Additional Red Cell Products	30 min	10 min	10 min	
Group & Screen (uncomplicated)		<5 hours*	<2 hours	<1 hour	
	Converted to crossmatch	30 min	10 min	10 min	
Direct Antiglobulin Test		<96 hours	<2 hours	<1 hour	
Transfusion Reaction Investigation		n/a	n/a	<1 hour	
Cord Blood Workup	RhIg Eligibility	<24 hours	n/a	n/a	
	Suspect HDN	<5 hours*	<2 hours	<1 hour	
Kleihauer-Betke	RhIg dosing	<24 hours	n/a	n/a	
Kleihauer-Betke at DECRH	FMH suspected	n/a	<2 hours	<1.5 hour	
Kleihauer-Betke referred to DECRH	FMH suspected	n/a	<4 hours	<3.5 hour	
Prenatal Group & Screen		<96 hours	n/a	n/a	
Antibody titer		<96 hours	n/a	n/a	

\*NOTE: Routine tests received outside of dayshift this work may be left until the next day

Other Testing	Routine	ASAP	STAT
Cold Agglutinins	<96 hours	n/a	n/a
Semen Analysis	<5 hours	n/a	n/a

Product Preparation	Routine	ASAP	STAT	
<u>Uncrossmatched O Negative</u> No Specimen <b>or</b> Specimen drawn (but not in lab or testing has not begun)	n/a	n/a	5 min	
<u>Uncrossmatched</u> <u>Group specific / Group compatible</u> Sample tested for ABO/Rh only (antibody screen still pending) NOTE: If the recipient has no previous blood type on file, only Group O red blood cells can be issued until blood type can be confirmed by a second determiniation	n/a	n/a	10 minutes	
Plasma Thaw	Within 60 min of request to transfuse	Available as soon as thawed (~30 to 40 min)		
Cryoprecipitate Thaw and Pool	Within 60 min of request to transfuse	~45 min from request to transfuse		
Red Cell Aliquot on crossmatched blood	Within 60 min of request to transfuse	Within 20 min of request to transfuse		
Blood for Exchange Transfusion	As soon as prepared (<2 hours)			

# Blood Products Routinely kept in Inventory (by Facility)

Droduct/Drond Norse	Oi- a fualture a	Order by/in	Facility			
Product/Brand Name	Size/volume	Order by/in	DECRH	URVH	HDSJ	OPH
Red Blood Cells	~293 mL* Actual Vol on Label	Number of units, see NOTE 1	Х	Х	Х	Х
Red Blood Cells - Irradiated	~293 mL* Actual Vol on Label	Number of units, see NOTE 1 Add requirement in Comment	Х	х	Х	
Platelets Apheresis, Pooled by CBS	Apheresis ~242 mL* Pooled ~ 342 mL* Actual Vol on Label	Dose, see NOTE 1	X see NOTE 2			
Platelets Irradiated Apheresis, Pooled by CBS	Apheresis ~242 mL* Pooled ~ 342 mL* Actual Vol on Label	Dose, see NOTE 1 Add requirement in Comment	X see NOTE 2			
Plasma Apheresis Fresh Frozen Plasma, Frozen Plasma	AFFP ~494 mL* FP ~283 mL* (as available) Actual Vol on Label	Volume in mL (cc's)	х	x	x	х
Cryoprecipitate	~10 mL* per unit	Number of units	Х			
	5% 250 mL	Number of 250 mL vials	Х	Х		
Albumin	25% 100 mL	Number of 100 mL vials	Х	Х	Х	Х
Rh Immune Globulin	1500 IU	Ordered by lab staff	Х	Х	Х	Х
Intravenous Immune Globulin (IVIG)	5g, 10g, 20g (2.5 g as available)	Dose as calculated on IVIG request form, order in grams per day	х	х	х	
Subcutaneous Immune Globulin	1g, 2g, 4g, 8g	For Home Infusion program	х	х		
Factor VIII (Recombinant)	Multiple sizes 250-3000 IU	IU	х	х	х	х
Long Acting Factor VIII (Recombinant)	Multiple sizes 250-3000 IU	IU		х		
FVIII/vWF	1000 RcoF IU 2000 RcoF IU	IU of vWF:RCof	Х	х		
Factor IX (Recombinant)	500 IU &/or 1000 IU	IU	Х			
FVIIa (Recombinant)	1 mg 2 mg	Dose based on patient's weight, order in mg	х			
C1-Esterase Inhibitor	1500 IU	Dose based on patient's weight, order in IU	х			х
	5 mL	Dose based on wt, order in mL	Х	Х		
HBIG	0.5 mL syringe	mL	Х			
VZIG	125 IU	Dose based on wt, order in IU	Х			
Prothrombin Complex Concentrate	500 IU (20 mL) 1000 IU (40 mL)	Dose will depend on the INR before treatment and the targeted INR, order in IU or volume in mL	х	x	х	х
Fibrinogen Concentrate	1 g (50 mL)	Dose is based on the extent of bleeding, laboratory values, and the clinical condition of the individual patient	х			

- *NOTE 1* Enter specific volume requirements in comments as applicable for Special patient populations (e.g. neonate, pediatric or other small volume transfusion).
- NOTE 2 DECRH: Platelet Standing order arrives Tues and Fri am. Platelets <u>may or may not</u> be available in inventory at any given time due to usage and short outdate period for this type of product. <u>Platelets may have to be ordered from CBS</u>.
- \* = mean volume of product as per CBS Circulars of Information dated April 2017
## **Blood Products Available by Order from CBS**

• Information from Canadian Blood Services (updated 2016-06-08), subject to change.

Product Category	Name	Manufacturer	Sizes
	Antithrombin III NF	Baxalta	1000 IU
	Factor VII (Special Access)	Baxalta	600 IU
	wilate®, FVIII/vWF	Octapharma	500, 1000 IU FVIII
	Nuwiq® rFVIII	Octapharma	Sizes 250 to 2000 IU
	ALPROLIX™ rFIX,	Biogen	500, 1000, 2000, 3000 IU
Factor Concentrates	Immunine® VH, FIX	Baxalta	500 IU
	FEIBA™ NF	Baxalta	1000, 2500 IU
	Factor X P (Special Access)	CSL Behring	600 IU
	Factor XI (Special Access)	Bio Products Laboratory	1000 IU
	Tretten®, rFXIII	Novo Nordisk	2500 IU
	Corifact™, FXIII	CSL Behring	250, 1250 IU
Protein C	Ceprotin (Special Access)	Baxalta	500 IU
Solvent/Detergent- Treated Plasma (S/D Plasma) Octaplasma™ S/D Plasma Type O, A, B, AB		Octapharma	200 mL
	CytoGam®, Anti-CMV IG	CSL Behring	2.5 g
	HepaGam B®, Anti-HBIG	Cangene	1 mL, 5 mL
	GamaSTAN® S/D, IMIG	Grifols	2 mL
	Gammanorm®	Octapharma	1.65 g

## Health Canada's Special Access Program (SAP)

• List of Special Access Program Products (updated 2015-05-08, subject to change)

PRODUCT NAME	MANUFACTURER	CONTACT INFORMATION				
Ceprotin	Baxter/Baxalta	1-844-423-2090				
Factor VII	Baxter/Baxalta	1-844-4	423-2090			
Factor XI	Bio Products Laboratory	613-256-7106				
Factor X P Behring	CSL Behring	1-866-773-7721 DAYTIME	613-783-1892 AFTER HOURS			
Gammanorm	Octapharma	1-888-4	438-0488			
Hemofil M NF	Baxter/Baxalta	1-844-423-2090				
Koate-DVI	Grifols	1-866-482-5226 Select Option 2 (Med Info)				
Hyper RHO S/D	Grifols	1-866-482-5226 Select Option 2 (Med Info)				

For authorization to obtain non-marketed product

TELEPHONE 613-941-2108

SAP can be reached 24 hours a day

FAX 613-941-3194

WEBLINK FOR SAP INSTRUCTIONS & FORMS

https://www.canada.ca/en/health-canada/services/drugs-health-products/specialaccess/drugs.html

This is a CONTROLLED document. LAB-3-ADM-LUM-00001

Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use Laboratory User Manual Version 40.0 **Page 73 of 242** Effective Date: January 24, 2022

## **Ordering Blood Products and Special Requirements**

• Enter Orders in Meditech system via Order Entry. Category is "BBK". Select the product under "Procedure" or via Lab Module depending on user access.

ORDERING BLOOD PRODUCTS IN MEDITECH ORDER ENTRY					
Order Entry Name	Example Brands*	Order Entry Mnemonic			
25 % ALBUMIN		ALB25			
5 % ALBUMIN		ALB5			
FRESH FROZEN PLASMA		FFP			
AUTOLOGOUS DONATION 1ST UNIT		AUTBLD			
AUTOLOGOUS DONATION/ADDITIONAL		AUTADD			
C1-ESTERASE INHIBITOR	Berinert®	C1EI			
CRYOPRECIPITATE		CRYO			
CYTOMEGALOVIRUS IMM GLOBULIN		CMVIG			
FACT 8 INHIBITOR BLOCKING ACTI	FEIBA™	F8IBA			
FIBRINOGEN CONCENTRATE	RiaStap®	FI			
FACTOR VII CONCENTRATE	Niastase® (FVIIa)	FVII			
FACTOR XIII CONCENTRATE		FXIII			
HEPATITIS B IMMUNE GLOBULIN		HBIG			
HUMATE	Humate-P®	HUMATE			
INTRAMUSCULAR IMMUNE GLOBULIN	Gamastan®	IGIM			
INTRAVENOUS IMMUNE GLOBULIN	Gamunex®, Gammagard ®, Privigen®	IVIG			
SUBCUTANEOUS IMMUNE GLOBULIN	Cuvitru®	IGSQ			
PLATELET CONCENTRATE		PLT			
CONTINUOUS INFUSION		CI			
PROTHROMBIN COMPLEX	Octaplex®	PROTHROMBN			
GROUP,TYPE,SCREEN, & BLOOD		GRPBLD			
RECOMBINANT FACTOR VIII	Adynovate®, Kovaltry™, Xyntha®	F8REC			
RECOMBINANT FACTOR IX	BeneFIX®	F9REC			
VARICELLA ZOSTER IMM. GLOBULIN	VariZIG™	VZIG			
RED BLOOD CELL ALIQUOT/INFANT		BLDBABY			

\* the above "Brands" of blood products is not all inclusive and is subject to availability

See next page for Blood product Special Requirements...

#### **SPECIAL REQUIREMENTS:**

- The physician must indicate in the order if a patient has special requirements for Blood products. Depending on the special requirement a time element may be involved in obtaining the blood product.
- When the order is entered in Meditech the special requirements MUST be placed under comments so that the Lab will be aware. It is recommended, particularly for new requirements, that the lab be advised by phone as well.
- Examples of some requirements and some common indications (guideline only)
  - IRRADIATED: Patient groups with a well-defined risk for TA-GvHD:
    - > Directed donation of cellular components from a related family member
    - Granulocyte concentrates
    - HLA-matched platelets
    - > Fetuses undergoing intrauterine or exchange transfusion
    - > Newborns who have previously undergone intrauterine transfusions
    - Patients with congenital T-cell immunodeficiency, including:
      - Severe combined immunodeficiency disease (SCID)
      - Di George syndrome
      - Wiskott-Aldrich syndrome
      - Purine nucleoside phosphorylase deficiency
      - Reticular dysgenesis
      - Cell-mediated immune deficiency of unspecified etiology
    - Selected patients with acquired immunodeficiency:
      - Hodgkin lymphoma
      - Receiving or having received treatment with purine antagonists (e.g. fludarabine, cladribine, pentostatin); purine-like antagonists (bendamustine); alemtuzumab (anti-CD52) therapy; anti-thymocyte globulin (ATG)
    - > Hematopoietic stem cell transplant recipients:
      - Allogeneic transplant for life
      - Autologous transplant 3 months following transplant if no total-body irradiation conditioning; 6 months following transplant with total-body irradiation conditioning

Reference: <u>CBS Clinical Guide to Transfusion, Chapter 15 CMV Seronegative,</u> <u>Irradiated and Washed Blood Components (Aug 1, 2016)</u>

- o <u>IgA DEFICIENT</u>: For IgA deficient patients with documented anti-IgA
- <u>HLA MATCHED</u>: indicated for recipients that fail to respond to platelet transfusion because of demonstrated anti-HLA antibodies (alloimmune refractoriness).

## Intravenous Immune Globulin (IVIG)

- The IVIG request forms are located on Skyline and must be used to order IVIG.
  - o Adult form is called "IVIG Adults". Click on link or search using form number HHN-0480
  - Pediatric form is called "<u>Request for Intravenous Immune Globulin(IVIG) (Pediatrics)</u>". Click on link or search using form number 02.6110-15

#### STEPS:

- 1) On the IVIG request form enter the following information:
  - > Gender
  - > Height
  - Actual Body Weight
  - Dosing in g/kg
- Calculate the daily dose with this information for ALL PATIENTS with a height of 152.4 cm (5') or greater and/or 45 kg or greater. The calculator is found on the Nova Scotia Provincial Blood Coordinating Program website at: http://www.nshealth.ca/IVIG/
  - Adult IVIG doses are rounded down to the nearest 5g
  - Pediatric doses are rounded up or down to the nearest 2.5g when small vial size is available, otherwise dose is rounded up or down to the nearest 5g
- 3) On the IVIG request form enter the ORDER information in the blanks:

Administer \_\_\_\_\_ g IVIG × \_\_\_\_\_ days. If indicated, repeat q \_\_\_\_ days for a total of \_\_\_ treatments

Intended Treatment Start Date: \_\_\_\_\_ (yyyy/mm/dd)

- 4) The physician must sign the form
- 5) Fax the completed form to the DECRH Transfusion Medicine Lab at 443-2111 regardless of which Area 3 facility the patient is to receive the product. Retain the original for the patient's chart.
- 6) A new form is required if:
  - o It's the first time IVIG has been ordered on a patient
  - The treatment plan is altered
  - The Indication for IVIG has changed
  - o Repeat treatments are to continue after a year

## **Electronic Crossmatch**

 Over 90% of units crossmatched are eligible for an electronic crossmatch and can be performed in <2 minutes. Eligible patients have a negative antibody screen on a current Crossmatch specimen and no history of clinically significant antibodies. Therefore, blood requested on these patients will be crossmatched when there is an order to transfuse or going to the OR as opposed to being "On hand". In Meditech PCI a test called "Crossmatch", along with a canned text comment, will be added to identify these patients. See next page:

## To Check if Blood is "Ready" for a Patient Using Meditech PCI

- Check (as shown below) in Patient Care Inquiry (PCI) to determine blood availability. For routine requests, allow at least 2 hours from the time of sample collection before checking availability.
  - A) In MEDITECH bring up the Patient in PCI and use the right arrow or mouse click to select the following:
  - B) From the main PCI screen:

	Blood Bank	Tests			Product	Date	Тіме
	Blood Bank	History			All Products	21 Jan	10:54
select ►	Blood Bank	Products	then select		RED CELL CONCENTRATE	21 Jan	10:54
			or	►	IRRADIATED RED CELL CONC	(as app	licable)

- C) Check the Status, if:
  - 1) **READY** then unit(s) with this status are ready to be issued

     Date
     Time
     Product
     Unit
     Status
     Volume

     21 Jan, 16
     10:54
     RED CELL CONCENTRE
     C057116210101
     READY
     350
  - 2) **ORDERED** then go to the test screen (next screen)

Date	Тіме	Product	Unit	Status	Volume
21 Jan, 16	10:54	RED CELL CONCENTRA		ORDERED	

a) If there is a Test called CROSSMATCH with either of the comments below (in red), <u>then units are ready to be issued</u> the same as if they were READY as above. Example:

Most patients this comment will be seen:

CROSSMATCH	I UNITS ARE READY! I I	I REH
	I ** CALL TRANSFUSION MEDICINE WHEN READY TO	) TRANSFUSE **
	I THIS CROSSMATCH SPECIMEN EXPIRES 96h FROM	0843h 20/01/16

PACL surgical patients will have this comment:

> CROSSMATCH	ł	UNITS	ARE	READY!			ł	I					I REF	ł	
	ł	****	CALL	TRANSF	FUS I	(ON	MEE	) IC INE	WHEN	READ	Y TO	) TRA	INSFUS	SE -	****
	I	THIS	CROS	SMATCH	IS	VAL	.ID	UNTIL	08001	n ON	THE	4th	DAY F	°05	T-OP

b) If any of the following are seen, crossmatched blood is not yet available:

ELECTRONIC XM	PENDING RECEIPT	OR
ELECTRONIC XM	PENDING	OR
RCC	PENDING	

## How Long is the Specimen Good For?

#### • SPECIMEN EXPIRY:

All transfusion medicine laboratory specimens are valid for 96 hours from the date and time of collection.

**Exception** Specimens for future OR drawn in the DECRH Pre-Admit Clinic may be collected up to 28 days prior to the date of the procedure provided the patient in the 3 months prior to specimen collection:

- $^{\circ}$  o has not been transfused with a blood component and
- $\circ$  has not been pregnant

If the patient has been recently transfused or pregnant as above, then the standard 96 hours for specimen expiry applies.

## **Crossmatched Blood Cancellations**

- Patient's eligible for electronic crossmatch, i.e. those with no antibody(s) or other serological difficulties, do not have blood to cancel but do in fact have blood available until the crossmatch expires (96 hours from collection). For surgical patients this will be until 0800 on the 4<sup>th</sup> day post-op.
- Patient's with antibody(s) or those with special units reserved will have their crossmatched blood held until the specimen expires at 96 hours from collection.
- Autologous blood drawn by CBS will be held reserved for the patient until the autologous unit expires.

## **Emergency/Unmatched Blood Request**

- Physician accepts responsibility for use of uncrossmatched blood by their (or designates) signature on the request form when the blood is delivered.
- The blood issued depends on urgency and circumstances as follows:

Circumstance	Fastest Available
No Sample (arrange collection STAT)	Upprocemptohod O Nogotivo E minutos
Sample drawn – not in lab	Unclossifiatched O Negative - 5 minutes
Sample tested for ABO/Rh only (antibody screen pending)	Uncrossmatched Group Specific* - 5 minutes
Uncomplicated STAT crossmatch	Crossmatched Group Specific* - 40 minutes
Current Group & Screen already completed	Crossmatched Group Specific* - 10 minutes
Positive antibody screen or crossmatch	Time can vary extensively. Risks and benefits weighed on case by case basis. Communication crucial between Lab and ward/ physician

\* Group Compatible may be substituted for Group Specific depending on inventory at hand

## Neonatal Blood Requests

#### • EMERGENCY Neonatal Requests

- If testing as outlined for Routine requests has not been performed and the request is too urgent to wait, then:
  - Group O Rh Negative irradiated CMV negative UNCROSSMATCHED blood will be provided. Physician's signature is required for uncrossmatched products.

### ROUTINE Neonatal Requests

- An aliquot of Group O Rh Negative Irradiated Red Blood Cells that are ≤7 days old are used for routine neonatal transfusions.
- Initial small volume transfusion request for baby, call to notify Transfusion Medicine and use GRPBLD in Order Entry. Order 1 unit RCC. Under comments specify volume to be transfused. Mother's name and hospital number must be on the requisition for crossreferencing.
- Transfusion Medicine will divide the unit "aliquot" ensuring there is at least an extra 50 mL to account for tubing
- For most requests 1 lavender microtainer specimen with a minimum of 250 uL is sufficient. In situations where there is no previous Group & Screen (G&S) or no recent G&S performed on the mom, and she is not available to have a current G&S drawn and tested, a lavender microtainer specimen with 1000 uL will be required.
- Subsequent small volume transfusions call to notify Transfusion Medicine and use BLDBABY in Order Entry.
- Crossmatches on neonates are initially valid until the neonate:
  - reaches 4 months of age or
  - has been discharged
- In cases where the mother has a clinically significant antibody, contact the Transfusion Medicine Laboratory at extension 5454.

## **Requirement for ABO/Rh "Blood Group" Confirmation**

- All **Group & Screen or Crossmatch** requests received on recipients with **no previous blood group record** will have a specimen ordered and tested by the Transfusion Medicine (TM) lab. This is to confirm the recipient's blood group and is required before group specific/group compatible red blood cells can be crossmatched and issued to a non-group O recipient. The TM lab will provide a "Tan" top colored vacutainer to the Patient Care Unit or with the phlebotomist along with a patient demographic label. Purpose of the standard is to further reduce the chance of inadvertently issuing incompatible blood which may result in a potentially life-threatening hemolytic reaction
- The urgency of the request for the confirmation specimen is directly proportional to the urgency and likelihood of a Red Blood Cell Transfusion. The collection of this specimen at each facility will follow the same process as any other Lab test requiring collection (Routine/Urgent/STAT).
- In urgent situations Group O blood can be issued until the blood group is confirmed, however this should only be a contingency followed with efforts to collect the confirmation specimen STAT

**Reference:** Kraegel J. (ed) Blood and blood components Z902-15, Mississauga, ON: Canadian Standards Association; December 2015. **Update No.1 – January 2018 10.6.1.3** 

## ABO and Rh Compatibility Charts

## **\***RED BLOOD CELLS:

ABO selection order of compatible red blood cells							
Poginiant's	Donor ABO Group						
ABO Group	1 <sup>st</sup> Choice – ABO identical	2 <sup>nd</sup> Choice – ABO compatible	3 <sup>rd</sup> Choice – ABO compatible	4 <sup>th</sup> Choice – ABO compatible			
0	0	NONE	NONE	NONE			
A	А	0	NONE	NONE			
В	В	0	NONE	NONE			
AB	AB	A	В	0			

Rh selection order of compatible red blood cells						
A) Rh Positive	e recipients: either Rh	Positive or Rh Negative red blood	d cells may be used			
B) Rh Negativ	/e recipients: ABO &	Rh Selection order of compatible	Red Blood Cells, are as follows:			
Recipient's1st Choice -2nd Choice -Last Choice -ABO & RhABO & Rh identicalRh Negative, ABO compatibleRh Positive, ABO compatible						
O Negative	O Negative O negative NONE		O Positive			
A Negative	A Negative A Negative O Negative		A Positive O Positive			
B Negative	B Negative B Negative O Negative		B Positive O Positive			
AB Negative	AB Negative	A Negative B Negative O Negative	AB Positive A Positive B Positive O Positive			

### **\*PLATELET PRODUCTS:**

ABO selection order of platelet products									
Boginiont's		Donor ABO Group							
ABO Group 1 <sup>st</sup> choice (ABO identical)		2 <sup>nd</sup> Choice	3 <sup>rd</sup> Choice	4 <sup>th</sup> Choice					
0	0	А	В	AB					
А	А	AB	(B)*	(O)*					
В	В	AB	(A)*	(O)*					
AB	AB	(A)*	(B)*	(O)*					

\*Blood groups in (parentheses) represent choices with incompatible plasma, listed in "least incompatible" order

#### Rh selection order of platelet products

Rh POSITIVE Recipients: either Rh Positive or Rh Negative platelets may be used

 Rh NEGATIVE Recipients: Rh Negative platelets should be used, especially in children and women of child bearing age. In emergency situations and/or inventory availability, Rh Positive platelets may be substituted. In these cases prophylactic Rh Immune Globulin must be ordered by the physician and given within 72 hrs.

#### **\*PLASMA:**

ABO selection order of compatible plasma for all recipients										
Desiniantia	Donor ABO Group									
ABO Group	1 <sup>st</sup> Choice – ABO identical	2 <sup>nd</sup> Choice – ABO compatible	3 <sup>rd</sup> Choice – ABO compatible	4 <sup>th</sup> Choice – ABO compatible						
0	0	A	В	AB						
A	A	AB	NONE	NONE						
В	В	AB	NONE	NONE						
AB	AB	NONE	NONE	NONE						

#### **\*CRYOPRECIPITATE:**

ABO selection order of cryoprecipitate

Cryoprecipitate recipients can be transfused with any ABO group, although neonates and minor children should be given ABO compatible units when possible. Volume of each unit of cryoprecipitate ~10+/-2 mL. Routinely Group A is kept in inventory at DECRH

## **Sign Out of Blood Products**

- NOTIFY LAB: Call Transfusion Medicine when ready to begin administration and enter a "release" request via Order Entry. This release prints in Transfusion Medicine Laboratory. Only enter a release for one unit at time.
   NOTE: <u>After hours</u> at HDSJ and OPH refer to section "<u>Sign-Out of Blood Products after</u> <u>LAB hours (HDP and OPH)</u>"
- 2) NOTIFY SPD (DECH): Call SPD that a product is available to be picked up, provide the:
- $\circ$  name of the patient and
- o delivery location
- 3) RELEASE SLIP: Sign out and transport of Blood Products to the patient care area must be performed by medical staff or SPD porter that has been trained to perform this function. A "release slip" consisting of an imprint of the patient's hospital demographics card on a label or the card itself is to be used to sign-out with the lab staff (SPD is to provide the name and delivery location)

#### 4) **CHECK**:

- Perform a visual inspection of product for leaks, abnormal appearance, port integrity etc. Refer to <u>Canadian Blood Services Visual Assessment Guide</u> on Skyline: Skyline home page → Tools & Resources → Patint Care → *click on* "Blood Products Administration
- With the unit flat on a bench alongside the accompanying "Issue/Transfuse" form, verify with the lab staff the following:
  - Patient's name on the "Release Slip" (verbally provided to SPD porter) compared with the name on the Issue/Transfuse form and the crossmatch label match
  - Patient's Hospital Number on the "Release Slip" (n/a for SPD porter) compared with the MEDIC # on the "Issue/Transfuse" form and the ID No on the crossmatch label match

#### \*\* If ANY discrepancies are found, they MUST be resolved before release from the lab. \*\*

- 5) **SIGN:** On the Issue/transfuse form sign where it says "SIGNED OUT BY: \_\_\_\_\_\_ and write the TIME: \_\_\_\_\_.
- 6) **ARRIVAL AT PATIENT CARE LOCATION:** The unit is to be handed directly to medical staff at the patient care location. Do not leave the unit at the desk unattended.
- 7) NOTES: Do not call or send a release until ready and set-up to begin infusion. Never use any refrigerator to store blood products on the nursing unit. If an unexpected delay occurs, the product must be returned to the Transfusion Medicine Laboratory immediately. Blood components must be returned within 30 minutes, otherwise it will be discarded. The unit can be reissued from step 1 above when ready to start infusion.

## **Blood Product Arrival**

#### ARRIVAL OF BLOOD PRODUCT

When the unit is brought to the patient's location all processes as listed in Policy Number: HHN-CL-NU022 Administration of Blood Products must take place and performed as in the policy such as:

- Visual Inspection, product expiration date/time
- Mixing the product by gentle inversion
- Verify product matches the physician's order
- Perform and verify with a second RN, LPN, RRT, Laboratory Technologist or Physician/NP, the identification on unit and Issue/Transfuse form as follows:
  - > Patient's name
    - on the crossmatch label and the
    - name on the "Issue/Transfuse" form
  - Patient's Hospital Number
    - Hospital Number on the crossmatch label (ID No.) with that on the
    - "Issue/Transfuse" form (MEDIC #)
  - > Product Type:
    - found in the middle left area of the unit label with that on the
    - crossmatch label (Product) and with that on the
    - "Issue/Transfuse" form
  - Product (donor) number:
    - found on the top left of the unit label with that on the
    - crossmatch label (Unit/Lot#) and with that on the
    - "Issue/Transfuse" form (Product #)
  - > Patient's (Recipient) blood group:
    - on the crossmatch label (Rec BI Grp) with that on
    - the "Issue/Transfuse" form (BLD TYPE)
  - Product blood group
    - located in the top right area of the unit label with the
    - crossmatch label (Product Bld Grp) and with the
    - Product blood group on the "Issue/Transfuse" form (in brackets [] between the product type and product number)

**NOTE**: The product may not be group specific but <u>MUST</u> be ABO compatible. See section "**ABO and Rh Compatibility Charts**".

If the unit is not group specific, the following statement under COMMENTS will be on the Issue/Transfuse form:

\*\* UNIT IS NOT GROUP SPECIFIC BUT IS CONSIDERED \*\* \*\*\*\*\*COMPATIBLE\*\*\*\*\*

- Markers: If the patient has special requirements as ordered by the physician these must be listed on the crossmatch label (Markers) and on the "Issue/Transfuse" form "Markers", i.e. CMV Negative and/or Irradiated
- If ANY discrepancies are found while performing the clerical check, notify the lab immediately. Do NOT use until discrepancies are resolved.
- Perform Pre-Transfusion Check in the Presence of the Recipient (at the BEDSIDE) as per Policy
- **DOCUMENTATION:** on the Issue/Transfuse form the following must be recorded:
  - o Verified signatures for the Pre-transfusion check as well as signature of who administered
  - o Transfusion start date/time and time ended with volume transfused
  - Comments as necessary
- After all the data has been entered on the Issue/Transfuse form, attach to the patient's chart.

## Sign-Out of Blood Products after LAB hours (HDP and OPH)

- Only one unit at a time may be released
- If ANY discrepancies are found with the procedures below, notify the lab tech on call immediately and return the unit to the refrigerator where it was taken. Do NOT Use.
- RELEASE SLIP as under "Sign Out of Blood Products".
- **BLOOD LOCATION**: Crossmatched blood along with the "Issue/Transfuse" form are located in the lab as follows:
  - <u>HDP</u>: on the top shelf of Refrigerator "BBR25 Blood Bank". This refrigerator has taupe colored sides and is located approximately 20 feet diagonally from the main lab door.
  - <u>OPH</u>: on the top shelf of the Refrigerator. This refrigerator is blue and located approximately 10 feet past the main lab door on the right.
- CHECK: as under "Sign Out of Blood Products".
- **DOCUMENTATION:** Enter the date and time of issue/release on the unit's crossmatch label
  - On the Issue/transfuse form sign by "INSPECTED BY: \_\_\_\_\_" and "SIGNED OUT BY: \_\_\_\_\_ and write the TIME: \_\_\_\_\_to indicate clerical checks and visual inspection was performed and found acceptable
  - Additionally, at:
    - <u>HDP</u>: Locate the patient's crossmatch requisition on the desk on the left side of the refrigerator. Next to the unit number being signed out initial and add the date and time.
    - OPH: affix the patient demographics label (Release slip) to the clipboard labeled "TRANSFUSION MEDICINE SIGNOUT RCC, APHFFP, PLATELETS" found on the wall immediately past the fridge to the left in the Transfusion Medicine area.
- BLOOD PRODUCT ARRIVAL: perform as under "Blood Product Arrival".

# Emergency Unmatched O Neg Blood Release after LAB hours (HDP & OPH)

- There are 2 units of O Negative Red Blood Cells set aside in the event a patient does not have crossmatched blood and the physician has ordered an immediate emergency transfusion in response to a life-threatening situation. If this situation occurs, immediately contact the lab technologist on-call. Also ensure a crossmatch specimen is drawn STAT.
- The units are located in the lab as described in "<u>Sign-Out of Blood Products after LAB hours</u> (<u>HDP and OPH</u>)" above. The units will have a label attached above the large product information labe<u>l as follows:</u>

UNCROSSMATCHED BLOOD								
ID# Pt. Location								
Pt. ABO/Rh (If available)								
Tech: Date								

Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use Laboratory User Manual Version 40.0 Page 84 of 242 Effective Date: January 24, 2022

This is a CONTROLLED document. LAB-3-ADM-LUM-00001

 Along with the unit is a Pink Blood Bank Transfusion requisition 01-1425 (09/92) or equivalent with the label where the physician must sign acknowledging and assuming responsibility for transfusing the uncrossmatched blood.



- When blood arrives at the patient location write known patient information on the label and requisition.
- Verify the unit's number and blood group on the requisition matches the large unit information label.
- Sign the requisition when administered along with the date and time
- After transfusion, the top copy remains on the chart, return the carbon copy to the lab

## **Transfusing Blood Products at Community Health Centers:**

- Ensure the security seal on the crate is intact\*
  - Cut the security seal with scissors and open the cardboard flaps
  - Remove the "Temperature in Transit to a Health Center for Transfusion" form and the Issue/Transfusion form. These should be on top of the Styrofoam cover
- Check the date and time packaged has not exceeded 24 hours\*
  - Remove the Styrofoam cover of the crate
  - Without disturbing the temperature probe, record the minimum, current and maximum temperature for the 1<sup>st</sup> unit on the "Temperature in Transit to a Health Center for Transfusion" form
- All 3 temperatures must be in the range of 1-10°C for Red Blood Cell products or 20-24°C for platelets\*
  - Remove a unit without disturbing the probe of the temperature monitor. (The probe is positioned between the gel pack and the bottom unit)
     Immediately replace the cover
- Observe the unit visually for abnormal appearance\*
  - Administer according to Horizon Health Network Policy Number HHN-CL-NU022 Administration of Blood Products (Adult)
  - Repeat steps above for the 2<sup>nd</sup> and 3<sup>rd</sup> unit if applicable
  - When transfusions have completed, place the temperature monitor with probe along with the completed paper work in an envelope (the back copy of the issue/transfuse form and the "Temperature in Transit to a Health Center for Transfusion" form)
  - Address and send the envelope and CBS crate back to the Transfusion Medicine Laboratory at the DECRH (HDP if from TVCHC). Do not put the envelope in the crate, send separately
  - Discard the empty blood bags on site in the biohazard waste

\*Notify DECRH Transfusion Medicine Lab at 506-452-5454 (HDP for TVCHC at 506-273-7198) immediately and do not transfuse the blood if:

- o security seal is missing or appears tampered with
- o time in transit exceeds 24 hours
- temperatures on the monitor are outside of 1-10°C for Red Cell products or outside of 20-24°C for platelets
- o product has an abnormal appearance

## **Transfusion Adverse Event / Reaction Investigation**

- Any reaction suspected to be as a result of transfusion of a blood product should be investigated as an adverse event.
- Refer to Horizon Health Network Policy Number HHN-CL-NU022 Administration of Blood Products

## For all Transfusion Reactions

- 1. Stop the transfusion
- 2. Maintain IV access with 0.9 % Sodium Chloride (NaCl)
- 3. Perform Clerical Check
- 4. Assess vital signs every 15 minutes until stable
- 5. Contact health care provider. Decision to restart the transfusion will be made by the Health Care Provider.
- 6. Notify Transfusion Medicine Laboratory

#### **PROCEDURE:**

- When the Health Care Provider orders a transfusion reaction investigation:
  - 1) Order a "TRI" and a "U/A" in Meditech Order Entry
  - 2) Collect 1 pink EDTA tube of blood (taken from a site other than the infusion site).
  - 3) Collect first post-transfusion urine specimen for urinalysis (Indicate it's for a Transfusion Reaction)
  - 4) Consider chest x-ray if the patient is showing respiratory symptoms
  - 5) Complete a Transfusion Reaction form with the following information:
    - Unit number(s) of product(s) implicated
    - o ABO/Rh type of unit if applicable
    - Indicate whether a blood warmer was used
    - o Time transfusion started
    - Volume given in mLs
    - $\circ$   $\,$  Time the reaction was noted
    - Time transfusion stopped
    - o Indicate whether patient has had a previous transfusion reaction
    - Indicate by check mark all the known clinical manifestations, use the "Other" category and specify if necessary
    - o Record the vital signs taken before, during, and after
    - List "Action Taken", such as medications
    - Sign and date the form
  - 6) Immediately send blood specimens and the unused portion of the blood product with the administration set attached (appropriately bagged) to Transfusion Medicine Laboratory.
  - 7) Monitor the patient's vital signs every 15 minutes (TPR and BP) until stable.
  - 8) See Transfusion Reaction Chart on the next page...

e:	and symptoms	May acquire	Actions & Suggested Treatment /	Possible
31	gns and Symptoms	may occur:	Investigations	Reaction
	Temperature >38°C, <39°C and 1°C above baseline	during or up to 4 hrs. post- transfusion	<ol> <li>Consider acetaminophen</li> <li>Continue transfusion with caution</li> </ol>	Febrile Non- Hemolytic Transfusion Reaction (FNHTR)
Fever and/or Chills/ Rigors	Temperature >38.5°C with chills, rigors, shock hypotension , nausea, vomiting, tachycardia, bleeding, pain	during or up to 4 hrs. post- transfusion	<ol> <li>DO NOT restart transfusion</li> <li>Do blood cultures on recipient</li> <li>TM will order blood cultures on product</li> <li>Treat shock, DIC, renal failure</li> <li>Consider use of broad spectrum antibiotics</li> </ol>	Bacterial Contamination
	Temperature >39°C,chills, rigors, hypotension, nausea/vomiting, headache, pain, tachycardia, hemoglobinuria	early in transfusion up to 24 hrs. post- transfusion	<ol> <li>DO NOT restart transfusion</li> <li>Serologic testing to investigate incompatibility</li> <li>DAT, LDH, BUN, Creatinine</li> <li>IV fluids</li> </ol>	Acute Hemolytic Transfusion Reaction (AHTR)
Urticaria (hives)	<2/3 of body affected and no other symptoms	within 2-3 hrs. of initiating transfusion	<ol> <li>Consider diphenhydramine IV / PO</li> <li>Restart transfusion with caution if not more than 4 hours since begun</li> <li>After 2 episodes, consider premedication with antihistamine</li> </ol>	Minor Allergic
Itching	>2/3 of body, <u>+</u> dyspnea, hypotension,↓SPO <sub>2</sub> , hoarseness, nausea/vomiting	within 45 min. of initiating transfusion	<ol> <li>DO NOT restart transfusion</li> <li>Consider diphenhydramine IV / PO</li> <li>Provide supportive care, oxygen</li> </ol>	Severe Allergic/ Anaphylactoid
and/or <b>Rash</b>	as above <b>AND</b> profound hypotension, loss of consciousness	within 45 min. of initiating transfusion, often within first 5 min.	<ol> <li>DO NOT restart transfusion</li> <li>Consider epinephrine, fluid bolus, vasopressors for intractable hypotension; ventilator support</li> </ol>	Anaphylactic
	Dyspnea, orthopnea, cyanosis, hypoxemia, tachycardia, hypertension, pulmonary/ pedal edema, elevated JVP	within 1-2 hrs. of initiating transfusion up to 6 hrs. post- transfusion	<ol> <li>DO NOT restart transfusion</li> <li>Give oxygen, diuretics</li> <li>Elevate head of bed</li> <li>Chest X-ray to rule out TRALI</li> </ol>	Transfusion Associated Circulatory Overload (TACO)
Dyspnea and/or ↓ Oxygen Saturation	Dyspnea, hypotension, fever/chills; +/- nausea /vomiting, DIC, hemoglobinuria, +/- pain	early in transfusion up to 24 hrs. post- transfusion	As above for Bacterial Contamination and Acute hemolytic (AHTR)	Acute Hemolytic Reaction (AHTR) or Bacterial Contamination
Caturation	Acute Respiratory distress, dyspnea, cyanosis, severe hypoxemia, severe bilateral pulmonary edema, bilateral infiltrates on chest X-ray, hypotension unresponsive to fluid bolus	within 1-2 hrs. of initiating transfusion up to 6 hrs. post- transfusion	<ol> <li>DO NOT restart transfusion</li> <li>Do chest X-ray</li> <li>Consider oxygen, intubation and ventilation, vasopressors</li> </ol>	Transfusion Associated Acute Lung Injury (TRALI)

## TRANSFUSION REACTION CHART

#### OTHER REACTIONS THAT MAY OCCUR OR BE OBSERVED:

#### During:

 Bradykinin Mediated Hypotension (>30 mmHg drop in systolic or diastolic blood pressure-Adults)

#### Post transfusion:

- Delayed Reactions
  - Immune and/or Amnestic response to donor red cell antigens (alloantibodies)
- Hemolysis from:
  - Use of hypotonic IV solutions with RBC transfusions
  - Medical device-related (e.g. cell saver, blood warmer malfunction)
  - Overheating of RBCs due to improper storage (e.g. RBC placed on radiator)
  - Freezing of RBCs (e.g. transport of blood directly on ice or storage in freezer)
  - o Transfusion of RBCs under pressure through a small bore needle
  - Transfusion of outdated RBCs
- Transfusion-Associated Graft vs Host Disease (TA-GvHD)
- Cytopenias
  - Post-Transfusion Purpura
  - Transfusion-Related Alloimmune Thrombocytopenia
  - Transfusion-Related Alloimmune Neutropenia
- Transfusion associated viral infection
  - HIV: 1 in 7.8 million
  - HCV: 1 in 2.3 million
  - HBV: 1 in 153,000
  - Human T-cell lymphotropic virus (HTLV): 1 in 4.3 million
  - West Nile Virus (WNV): <1 in 1 million
  - Cytomegalovirus (CMV)
- Other rare infectious agents
  - Viral Parvovirus B19, Hepatitis A virus, Tick-borne encephalitis, Dengue, Colorado Tick Fever, Human herpes virus 8, Chikungunya, SEN-Virus (Sen-V), Simiam foamy virus (SFV)
  - o Protozoal Malaria, Toxoplasmosis, Leishmaniasis, Babesiosis
  - Helminthic Filariasis
  - Spirochetal Treponema pallidum (Syphilis)
  - Rickettsial R. rickettsii (Rocky Mountain Spotted Fever), R. burnetii(Q fever), Ehrlichia (Ehrlichiosis)
- Transfusion associated infection with prions
  - Variant Creutzfeldt-Jakob Disease (vCJD)

Reference: Clinical Guide to Transfusion, Chapter 10 Adverse Reactions (June 2, 2016)

## Massive Transfusion Protocol (MTP)

- One algorithm for blood product support is utilized by the Transfusion Medicine Lab when an MTP is activated, I.e. for Trauma patients, Surgical patients, Obstetrics&Gynecology and ICU. Refer to: <u>HHN-CL-GC004 Massive Transfusion in the Major Trauma Patient</u>
- COMPLICATIONS OF MASSIVE TRANSFUSION:
  - Dilutional coagulopathy
  - Hypothermia
  - Hypocalcemia/Hypomagnesemia/Citrate toxicity
  - Metabolic acidosis
  - o Hyperkalemia

## **Blood and Blood Component Resources**

- See below for each product type where the following information can be located:
  - Descriptions
  - Actions
  - Indications and usage
  - o Contraindications
  - Adverse reactions and hazards
  - o Dosage, dosage forms and administration
  - A) Copies of the CBS "Circular of Information for the Use of Human Blood and Blood Components" for:
    - Red blood cells
    - o Platelets
    - o Plasma and Cryoprecipitate

can be obtained from the Transfusion Medicine Lab or accessed on the Canadian Blood Services website using the link: <u>https://blood.ca/en/hospitals/circular-information</u>

- B) Refer to the product's monograph for Factor Products such as:
  - o FVIII concentrate (Advate, Helixate, Kogenate, Xyntha)
  - FVIII/vWF concentrates (eg. Humate, wilate, etc.)
  - Prothrombin Complex concentrate (Octaplex, Beriplex)
  - FVIIa concentrate (NiaStase)
  - o C1-Esterase Inhibitor concentrate (Berinert)
  - FVIII Inhibitor Bypassing Activity concentrate (FEIBA)
  - FIX concentrate (BeneFIX, Immunine)
  - Fibrinogen Concentrate (RiaSTAP)
- C) Refer to the product's monograph for Immunoglobulin Products such as:
  - o Intravenous Immune Globulin (Gamunex/IGIVnex, Gammagard, Privigen)
  - Rh Immune Globulin (WinRho)
  - Hepatitis B Immune Globulin (HyperHEP B, HepaGam B)
  - Varicell-Zoster Immune Globulin (VariZIG)
- D) Refer to the product's monograph for Albumin: 5% and 25% (Plasbumin, Alburex, Albumin)

## Section 5: Microbiology

Specimen Maximum Delay in Transport

Specimens must reach the Microbiology Laboratory within a specified time period in order to be suitable for culture or examination.

SPECIMEN		TEMPERATURE	COMMENTS
Urine	1 day	4-8°C	Should reach the laboratory within 1 day of collection. Specimens will be accepted up to 2 days.
Pertussis Swab	5 days	4-8°C	Nasopharyngeal swab collected in UTM (Viral Transport media)
Stool C&S- in Enteric transport	72h	RT	Collect in screw-capped container with buffer
Stool C&S- NOT in Enteric transport	<2 hours	RT	<b>NOT</b> processed if >2 hours old.
Stool O&P – with SAF	Indefinitely	RT	Providing well mixed & proper volumes
Stool O&P - without SAF	24h	RT	Send ASAP after collection
Stool C. difficile	24h	4-8 °C	Collect in clean, dry container
Stool H. pylori	4-7 days	4-8 °C	Good for 7 days at 4-8 °C but testing is batched so check for testing day
Enterotest, Duodenal aspirate, Amoeba	ASAP	RT	Collect in clean, dry container
Leukocytes (stool)	Test no lo	nger available	Collect in clean, dry container at RT
Throat/Nose swab	48h	RT	
Sputum / E-tube	48h	4-8 °C	Purulent specimen, minimal salivary contamination
- TB culture	5 days	4-8 °C	Referred. Time to receipt in Saint John.
Cervical/Urethral swab	48h	RT	
Vaginal swab	72h	RT	
Vaginal/Rectal swab (GBS)	48h	RT	
Wound swab / Pus	48h	RT	
- Anaerobic culture	ASAP	RT	Use of anaerobic transport media is optimal
Blood specimens	36h	RT	
CSF / Body Fluid	STAT		Urgent specimen
	During the day:	Culture immediatel	y. Technologist on-call after regular hours.
- in Blood culture bottle	36h	RT	
Chlamydia: Swab	90 days	4-8 °C or RT	Chlamydia collection kit
Urine	24 hours	4-8 °C	Collect in clean, dry container
Viral -PCR and Culture	24h	4-8 °C	Usually UTM (Universal {Viral} Transport Medium. Refer to LUM for source or DECH Microbiology staff
Skin scrapings (Mycology)	72h	RT	Collect in sterile screw capped container

Specimen Type	Preliminary	Positive or Final	Negative Final	Notes
CSF or other sterile Body Fluid	1 hour for gram 18-24 hours for culture	24-72 hours depending on the isolate	72 hours	
Blood Cultures	Gram stain result within 1 hour of being flagged positive	24-48 hours after isolation of a significant isolate	Final -5 days Preliminary-48 hrs	Specific cultures are kept for extended periods
Urine	Within 18-24 hours of incubation	18-48 hours	18-24 hours	
Wounds	18-24 hours if a significant organism is present	18-48 hours	48-72 hours	Certain cultures may be kept for extended periods
Throat Screen Plate	18-24 hours	18-24 hours	48 hours	
Eyes, ears	18-24 hours if a significant organism is present	24-48 hours	48 hours	
Sputum or other respiratory specimens	Stat gram: 1 hour 18-24 hours if a significant organism is present	24-48 hours	48 hours	
Stool Culture	18-48 hours - notification within 1 hour of any positive findings	24-48 hours after isolation	48 hours	Some isolates may be sent to a reference lab, resulting in delays

Turn Around Times - Microbiology In-House Testing

Continued on next page

Specimen Type	Preliminary	Positive or Final	Negative Final	Notes
Vaginal Smears	N/A	24-72 hours	24-72 hours	Not routinely processed on weekends
Group B Strep Screen	N/A	24-48 hours	24-48 hours	
Cervical/Urethral	Significant cultures as appropriate	24-48 hours	72 hours	
Stool- C. difficile Toxin A&B Screen	N/A	Upon receipt if required stat, otherwise testing performed once daily	24-48 hours	
C. difficile Molecular	N/A	24-48 hours	24-48 hours	Not routinely processed on weekends
RSV	N/A	Testing performed upon receipt of specimen.(ASAP)	Testing performed upon receipt of specimen.(ASAP)	
Stool O/P	N/A	3-6 days	3-6 days	Not routinely processed on weekends
Chlamydia/GC	N/A	2-5 days	2-5 days	Not routinely processed on weekends
Hepatitis Testing	N/A	2-5 days	2-5 days	Not routinely processed on weekends
Mycology	Calcofluor white stain: 1-3 days	Dependent on organism growth rate.	4 weeks	Not routinely processed on weekends

NOTE: Referred-out tests TATs cannot be guaranteed as this is governed by the Referral Laboratory.

## **Sputum Collection – Patient Instructions**

Please refer to "Instructions for collection of Sputum Specimens form # HHN-0452".

## **Urine Collection for Microbiology Testing – Patient Instructions**

Please refer to "Instructions for Collection of Urine Specimens for Microbiology Testing" form # HHN-0822

## **Stool Collection for Microbiology Testing – Patient Instructions**

Please refer to HHN-0448 Instructions for Collection of Stool Specimens for Microbiology

## **Collection of Blood Cultures**

The most important factor in recovering microorganisms in a blood culture is the volume of blood drawn. The volume of blood inoculated into any blood culture bottle presently used should not be more than 10 mL. Overfilling of the bottle upsets the blood/broth ratio and may cause false negative results. Underfilling may also result in false negatives.

#### A. In adults and children weighing > 80 lb (36.5 kg):

1. Draw 10 mL each into an aerobic and anaerobic blood culture bottle. Repeat this process, using a new sterile withdrawal set, from a separate anatomical site (i.e. opposite arm), before starting therapy (second set).

#### B. For infants and young children:

- 1. **Neonates to 1 yr** (4 kg): Obtain 0.5 to 1.5 mL/pediatric blood culture bottle. The ordering physician should be contacted if there is concern about the amount of blood to be collected or has had previous venipuncture for other reasons.
- 2. **Children weighing 30 to 80 lb (13.6-36.3 Kg)**: Obtain 0.5 to 3 mL/pediatric blood culture bottle. Two collections are recommended. The ordering physician should be contacted if there is concern about the amount of blood to be collected, especially if the child is below normal weight or has had previous venipuncture for other reasons.

Refer to the Blood Culture Section of the <u>Regional Phlebotomy Manual</u> for further information.

## Fecal Culture and Parasite Examination on Inpatients Hospitalized > 3 Days

The following changes in acceptance criteria for specimens requesting 1) fecal culture and 2) parasite examination are being made at this time as per guidelines issued by the American Society for Microbiology.

 The laboratory will commence rejecting fecal cultures received from adult patients hospitalized for > 3 days, unless the patient is known to be HIV virus positive or in cases of a cluster epidemic within the hospital. Stool specimens from infants and toddlers will not be rejected until after the 4<sup>th</sup> day of hospitalization since it is recognized that it may take longer to collect a stool sample from such patients admitted for gastroenteritis for a variety of reasons i.e. not eating a normal diet.

Local data: Of 2543 inpatient stool cultures collected in DECH between 2008-2010, 35 were positive for enteric pathogens and of these 34 were collected within the first 72 hrs of admission to hospital and, conversely, only one was collected after 72 hrs of admission. In the case of patients who develop diarrhea after 3 days of admission, the most probable cause is C. difficile colitis.

2. The laboratory will reject stools for parasite examination from inpatients that have been in hospital for > 3 days. Data suggests that patients who develop diarrhea following a few days of hospitalization are symptomatic not from parasites but generally from other causes. There is always the chance (rarely) that the problem is related to a hospital associated parasitic infection i.e. possibly Cryptosporidium and microsporidium. In any case where this is a concern, the involved physician is requested to call the Microbiologist (452-5254) or Chief Technologist (452-5464).

Local data: During the period 2008-2010, 7 inpatient stools were positive for parasites. All stools were collected within one day of admission.

## Collection of Specimens (swabs etc.)

#### Nasal swab

- Insert dry swab into nostril approximately 1.0 to 1.5 cm parallel to the palate.
- Leave in place for about 5-15 seconds.
- Slowly withdraw with a rotating motion.
- Using the same swab repeat for the other nostril.
- Tip of the swab is placed in the supplied plastic vial containing viral transport medium and applicator is broken/cut off. Screw cap on.
- Apply patient label.
- Double bag specimen and take to lab.

#### Nasopharyngeal Swab

- Explain the procedure to the patient.
- Use the NP swab supplied with the viral transport media.
- If the patient has a lot of mucus in the nose, this can interfere with the collection of cells. Either ask the patient to use a tissue to gently clean out visible nasal mucus or clean the nostril yourself with a cotton swab (e.g. Q-Tip).
- Estimate the distance to the nasopharynx: prior to insertion, measure the distance from the corner of the nose to the front of the ear and insert the shaft approximately 2/3 of this length.
- Seat the patient comfortably. Tilt the patient's head back slightly to straighten the passage from the front of the nose to the nasopharynx to make insertion of the swab easier (see Figure 1)
- Insert the swab provided along the medial part of the septum, along the floor of the nose, until it reaches the posterior nares; gentle rotation of the swab may be helpful. (If resistance is encountered, try the other nostril; the patient may have a deviated septum.)
- Allow the swab to sit in place for 5–10 seconds.
- Rotate the swab several times to dislodge the columnar epithelial cells. Note: Insertion of the swab usually induces a cough.
- Withdraw the swab and place it in the collection tube. (Swab shaft may be broken off. Screw cap on)
- Apply patient label
- Double bag and transport to lab immediately.

#### Figure 1: Nasopharynx (NP) swab collection



Obtained from: http://www.nlm.nih.gov/medlineplus/ency/imagepages/9687.htm

#### Throat swab

- Both tonsils and the posterior pharynx are swabbed vigorously, and the swab is placed in the appropriate transport medium.
- Apply patient label. If hand labelling, write patient name, unique identifier (i.e. Medicare) and source of specimen
- Double bag and send to lab.

## Creutzfeldt-Jakob Disease (CJD) and Other Classic TSEs

It is important for healthcare personnel to follow best practices to prevent transmission of prion diseases such as Creutzfeldt-Jakob Disease (CJD), which is also known as Transmissible Spongiform Encephalopathy (TSE), sporadic CJD (sCJD), variant CJD (vCJD), Gerstmann-Straussler-Scheinker syndrome (GSS), and Fatal Familial Insomnia (FFI).

The Department of Laboratory Medicine is committed to providing procedures that ensure all laboratory staff handling specimens from at-risk or high-risk patients for CJD is aware of the precautions necessary to prevent transmission.

Because of the additional precautions and potential associated risks to performing CJD testing, requests are restricted to Neurologists **only** and may only be collected at DECRH from Monday to Friday between 0830-1430.

If a concern arises please notify the Microbiology Division Manager and/or consult with the Clinical Microbiologist.

#### Procedure for Labelling and Transport Protocol for CJD Specimens for Nursing Units

Procedure is to be performed Monday - Friday between the hours of 0830 and 1430 only

- Once specimens have been collected, please contact the Microbiology Department at 452-5465 to notify the laboratory that a spinal fluid for CJD will be sent
- Place each labelled specimen tube into an individual plastic bag
- Seal each plastic bag
- Label each bag with a 'CJD precautions' sticker (stickers may be obtained by calling Sample Receiving in the Chemistry lab @ 452-5435)
- Place all labelled bags together into another bag and label outer bag with 'CJD precautions' sticker
- Place bag in a Styrofoam cup to keep specimen tubes upright
- If paper requisition(s) are required, place into a separate sealed bag
- Send the specimen(s) by SPD porter to the laboratory ASAP (do not send in Pneumatic Tube System)

#### Specimen Types:

Blood, cerebral spinal fluid (CSF), tissue, blood cultures, other body fluids

#### Identification of Infectivity Risk of Tissues/Fluids

Level of Infectivity/ Prion concentration	Tissues, Secretions and Excretions
High Infectivity/ High concentration	Brain, spinal cord, dura mater, pituitary, eye <sup>1</sup> (including optic nerve and retina)
Low Infectivity/ Low concentration	CSF <sup>2</sup> , kidney, liver, lung, lymph nodes, spleen and placenta
No detected infectivity/ No prions detected	Adipose tissue, adrenal gland, blood, bone marrow, breast milk, dental pulp, feces, heart, nasal mucous, prostate, saliva, semen, skin, sweat, tears, testis, thyroid gland, urine

## Section 6: Haematology

### CBC:

A Complete Blood Count includes a hemoglobin, counting and sizing information for leukocytes, red cells and platelets and a differential leukocyte count. The CBC is processed using advanced cellular analysis systems. The differential is generated by technology which uses volume, conductivity and light scatter measurements. Results that fall outside the action limits recommended by the International Consensus Group for Hematology or any values that are flagged by the analyzer are followed up with a microscopic examination. Results for the absolute neutrophil cell population may be reported in Meditech ABS NEUT COUNT or NEUT/AB depending on the method by which it was counted.

#### Flow Cytometry:

### **Cerebral Spinal Fluid:**

When required, flow cytometry samples must be collected in addition to anatomical pathology or cytology as **specimens cannot be shared.** 

- 1. Cytology Specimens
  - Handle as usual (main/prime specimen).
  - Complete Cytology requisition.
  - Collect a minimun of 1.0 mL of cerebrospinal fluid in a sterile tube and deliver specimen and requisition to Cytology Lab immediately.
- 2. Flow Cytometry
  - Call Haematology/Flow Cytometry (452-5007) when flow cytometry planned.
  - Monday-Thursday morning preferred since flow cytometry specimens <u>must be</u> <u>processed within 24 hours</u> because of cell "viability" and due to the limited technical staff trained in this highly specialized testing procedure. Specimens are referred to the Saint John Regional Hospital for processing.
  - Complete a Haematology requisition stating for "Flow Cytometry"
  - Collect a minimun of 3.0 mL of cerebrospinal fluid in a sterile tube.
  - Deliver specimen and requisition to Haematology Lab immediately.

#### Lymph node specimens where lymphoma suspected, and flow cytometry requested:

When required, flow cytometry samples must be collected in addition to anatomical pathology or cytology as **specimens cannot be shared.** 

- Call Haematology/Flow Cytometry (452-5007) when flow cytometry planned.
- Monday-Thursday morning preferred since flow cytometry specimens <u>must be</u> <u>processed within 24 hours</u> because of cell "viability" and due to the limited technical staff trained in this highly specialized testing procedure. Specimens are referred to the Saint John Regional Hospital for processing.
- For surgical or fine needle aspirate samples, sterile pink RPMI solution for flow cytometry cell preservation is routinely available in the DECRH O.R. If additional solution is required, call Anatomical Pathology (452-5478) Monday to Friday, 0630 to 1630.
- See below for specimen procurement.

## Surgical Specimens

#### (Anatomical Pathology 452-5478/ Flow Cytometry 452-5007))

When required, flow cytometry samples must be collected in addition to anatomical pathology samples as **specimens cannot be shared**.

- 1. Routine Anatomical Pathology Specimens
  - Handle as usual (prime specimen)
  - Place specimen in formalin.
  - Complete Anatomical Pathology requisition.
- 2. Flow Cytometry
  - Place piece of fresh tissue (5 mm cube or needle core specimens at least 1 cm long each) in pink RPMI solution.
  - Complete a Haematology requisition stating "Flow cytometry".
  - Call Haematology/Flow Cytometry at 452-5007 and deliver to lab ASAP.

Note: Do not leave fresh tissue dry for prolonged periods.

#### Fine Needle Aspirates (Cytology 452-5489/Flow Cytometry 452-5007)

When required, flow cytometry samples must be collected in addition to cytology samples as **specimens cannot be shared.** 

- 1. Cytology Specimens
  - Handle as usual (main/prime specimen).
  - Place specimen in cytology cytolyt preservative.
  - Complete a blue Cytology requisition.
- 2. Flow Cytometry
  - Procure material from multiple <u>additional</u> needle passes to ensure sufficient material for analysis. Place aspirated material in RPMI solution.
  - Complete a Haematology requisition stating "Flow cytometry".
  - Call Haematology/Flow Cytometry at 452-5007 and deliver to lab ASAP.

#### Body Fluids (Cytology 452-5489/Flow Cytometry 452-5007)

When required, flow cytometry samples must be collected in addition to cytology samples as **specimens cannot be shared.** 

- 1. Cytology Specimens
  - Handle as usual (main/prime specimen).
  - Place specimen in cytology Cytolyt preservative. (pink-topped "Cytology Only" specimen container).
  - Complete a blue Cytology requisition.
- 2. Flow Cytometry
  - Collect 5-6 EDTA 4 mL draw tubes when possible.
  - Complete a Haematology requisition stating "Flow cytometry".
  - Call Haematology/Flow Cytometry at 452-5007 and deliver to lab ASAP.

## Section 7: Cytology

#### Sputum for Cytology Collection – Patient Instructions

Please refer to "Pt Guide Sputum Specimens for Cytology", Form #300000175

#### **Urine for Cytology Collection – Patient Instructions**

Please refer to "Pt Guide Urine Specimens for Cytology", Form #300000174

HPV DNA Test requisitions (from Atlantic Health Sciences Corporation):

- History of abnormal Pap smear and/or biopsy
- HPV vaccination status
- Source or site of specimen
- Initials of the person completing the requisition
- Collection medium (Digene collection tube, Thin Prep vial, etc.)

### PD-L1 & Molecular Testing on Cytology Cell Blocks:

# PD-L1 testing of Cytology pleural fluid samples when no tissue sample is submitted but non-small cell lung carcinoma (NSCLC) is suspected:

Specimens with potential need (based on clinical advice) should be collected in <u>2 parts</u>:

- Collect pleural fluid specimen in a pink-topped Cytology specimen container of CytoLyt (methanol-based solution) for Cytology testing. Label "A."
- 2. Collect pleural fluid sample in Tissu-Fix (formalin) container for Cytology cell block processing. Label "B."

Complete a blue Cytology requisition form indicating desired testing in the "History, Treatment & Clinical Findings" section:

"A – Cytology testing"

"B – PD-L1 testing"

The first specimen, "A – Cytology testing" will be processed for cytologic examination and the second specimen, "B – PD-L1 testing" will be put on hold pending the pathologist's determination if the specimen qualifies for molecular/PD-L1 testing based on the adequacy (minimum of 100 viable tumor cells) and the cytologic findings. If these criteria are met, the formalin-fixed cell block "B" will be sent for molecular /PD-L1 testing, otherwise it can be used as an additional cell block.

### NGS, MMR, and other molecular testing requests:

Specimens with potential need (based on clinical advice) should be collected in <u>2 parts</u>:

- 1. Collect sample in a pink-topped Cytology specimen container of CytoLyt (methanol-based solution) for Cytology testing. Label "A."
- Collect sample in Tissu-Fix (formalin) container for Cytology cell block processing. Label "B."

Complete a blue Cytology requisition form indicating desired testing in the "History, Treatment & Clinical Findings" section:

"A – Cytology testing"

"B – Molecular testing (specify)"

The first specimen, "A – Cytology testing" will be processed for cytologic examination and the second specimen, "B – Molecular testing" will be put on hold pending the pathologist's determination if the specimen qualifies for the requested testing based on the adequacy (minimum of 100 viable tumor cells) and the cytologic findings. If these criteria are met, the formalin-fixed cell block "B" will be sent for molecular testing, otherwise it can be used as an additional cell block.

## Section 8: Laboratory Tests - Alphabetical List

-Key to Test Table-

Column Name	Description
Test	Laboratory tests listed alphabetically.
Specimen:	The type of specimen required.
Container:	The Container into which the specimen is to be collected. Tubes for blood specimens are indicated by the color of the stopper of the vacutainer tube. Tubes containing anti-coagulant must be inverted several times to ensure complete mixing of the blood with the anti- coagulant. Never force the blood into the tube as this may result in hemolysis causing erroneous test results. Containers for specimen collection will be provided by the Fredericton Regional Laboratory and may be ordered from DECRH Stores department. Approved heavy metal-free urine containers are available from DECRH Stores, any other container may not be acceptable for collection for heavy metal determinations Acid Washed serum/plasma containers are available from DECRH Chemistry Department Example: • Gold – Serum Separator Tube • PST – Plasma Separator Tube • Yellow (ACD): Yellow top tube with Acid Citrate Dextrose
	Refer to Order of Draw for Multiple Tube Collections
Amount:	The amount of specimen required. Best results are always obtained when the full amount of blood is added to the anti-coagulant present in the tube. Specimens collected for multiple orders in the same container type, for the same department, may require less total volume. Contact the department if necessary. Strict adherence to the instructions requiring exact amounts is essential <b>mL</b> : Millilitre <b>g</b> : Grams
Department	The department that will perform the test:
	C: Chemistry     H: Hematology
	CG: Cytogenetics     AP: Anatomical Pathology
	CY: Cytology     M: Microbiology
-	I: Immunology     TM: Transfusion Medicine
I urnaround time	Expected turnaround time for the tests under normal circumstances from the time of collection/receipt in Lab. Expressed in the following: Hours, Days, Weeks.
OE Category	Module of entry for Order Entry
OE Mnemonic	Order Entry Mnemonics
	NOTE: Order entry Mnemonics and Lab Mnemonics may be different for the same test.
Lab Mnemonic	Lab Mnemonics used by the laboratory
Collection/Poferral	NOTE: Order entry Mnemonics and Lab Mnemonics may be different for the same test.
Instructions:	are referred by DECRH
	"Referred": The DECRH laboratory refers the tests to a reference laboratory
	" <b>If Transported</b> ": If the specimen is to be transported to the DERH laboratory from another facility
	Temperature requirements: frozen=on dry ice/not allowed to thaw cold=on an ice pack room temperature=18-25 degrees

## **Test Table - Alphabetical List**

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
1, 25-Di-hydroxy Vitamin D	Blood	Gold	5 mL	С	12 Days	LAB		MISC	Used to assess Vitamin D nutritional status. <b>Testing only available after</b> <b>consultation with the Clinical Biochemist (506)452-5443.</b> Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Referred- 2 mL serum frozen
11-Deoxycortisol (Compound S)	Blood	Gold	5 mL	С	12 Days	LAB	DEOXYC	DEOXYC	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Referred - 1 mL serum - Frozen.
17-Alpha Hydroxyprogesterone (17-Hydroxyprogesterone)	Blood	Red	6 mL	С	12 days	LAB	HYDROXYPRO	OHPROG	Please note age and sex of patient are required. Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, aliquot and store upright at 4°C. Referred - 1 mL Serum frozen.
17-Beta Estradiol (Estradiol)	Blood	Light Green	1 mL	С	< 24 Hours	LAB	ESTRADIOL	ESTRA	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection.
17-Hydroxyprogesterone (17-Alpha Hydroxyprogesterone)	Blood	Red	6 mL	С	12 Days	LAB	HYDROXYPRO	OHPROG	Please note age and sex of patient are required. Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, aliquot and store upright at 4°C. Referred - 1 mL Serum frozen.
25-Hydroxy Vitamin D	Blood	Gold	1 mL	С	< 24 Hours	LAB	VITD	VIT D	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Used to assess Vitamin D nutritional status. If transported, serum must be sent frozen if not received at DECH within 4 days of collection.
	a) Urine			С	15 Days		5HIAA-S	5HIAA-SCREEN	a) No longer available. Order HIAA-24H
5-HIAA (5-hydroxy-Indole-Acetic Acid)	b) Urine	Large plastic bottle with HCL	Complete 24 hour output	С	15 Days	LAB	5HIAA-24H	HIAA-24H	<ul> <li>b) Refer to <u>Diet/Drug Restriction form HHN-0840</u> for patient restrictions.</li> <li>c) Collect over 25 mL of 6N HCL. If sent from Health Centre or other outside collection site please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot. Referred.</li> </ul>

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
7-Dehydrocholesterol	Blood	GOLD	5 mL	С	35 Days	LAB	DEHYDRO7	7 DEHYDRO	Protect from light. Deliver to Chemistry immediately. Separate serum from clot and freeze ASAP. Referred - 2 mL Serum frozen
A/G Ratio	Blood	Light Green	1 mL	С	< 24 Hours	LAB	A/G	A/G	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Calculated from Total Protein (TP) and Albumin (ALB)
A1 Apolipoprotein	Blood	Red / GOLD	7 mL	С	15 Days	LAB	ΑΡΟΑ	АРОА	14 hour fast is required. Specimen must be delivered to the lab within 2 hours; otherwise, serum must be separated from the cells within 2 hours of collection and stored at 4°C. If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection. Referred
Abscess	Swab	Routine Swab		М	72 hours	MIC	ABS	ABS	Store at room temperature.
Absolute Eosinophil									Test not available
Acetaminophen	Blood	Red	1 mL	С	< 24 Hours	LAB	ACETA	ACETA	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Avoid hemolysis. This test is also part of a Drug Toxic Panel (DRUG-TOX). If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection. See Chemistry Section in this manual for additional information.
Acetone	Blood	Light Green	Full	С	< 24 Hours	LAB	ALCEG	ALCEG	Note yellow, red, grey, lavender, and Barricor tubes are also acceptable. Do not use any type of alcohol to disinfect skin. Collection tube must be allowed to draw to complete vacuum. Invert tube several times to mix. Keep tube sealed until analysis. Medico legal specimens should be delivered directly to a police officer, not to the laboratory. If transported, do not centrifuge. Serum osmolality, Glucose, Urea and Sodium (2 mL blood in a Gold tube is required) should also be requested.
Acetylcholine Receptor Antibodies (Anti-Cholinesterase)	Blood	Gold	5 mL	С	10 Days	LAB	ACETY	ACETYCO	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Referred - 2 mL Serum frozen.
Acetylcholinesterase - ERC (Cholinesterase ERC)	Blood	Lavender	4 mL	С	11 Days	LAB	ACETYLERC	ACETYLCHOL- ERC	Draw blood on Monday or Tuesday AM only. Do not centrifuge. Specimen must be sent to referral lab the same day as collected. Referred
Acid Fast Bacilli				М					See Type of specimen +TB

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Acid Phosphatase									Test is <b>no longer available.</b>
ACTH (Adrenocorticotropic Hormone)	Blood	Lavender (pre-chilled)	4 mL	С	5 days	LAB	ACTH	ACTH	Specimen should be collected between 6 and 10 AM, unless the physician is requesting a specific time due to a stimulation test (Fasting is not required). Place on ice and deliver to Chemistry immediately. See Chemistry Section in this manual for additional information. If transported, separate at 4°C and freeze plasma immediately. Send Plasma frozen. Referred – 1 mL plasma.
ACTH Stimulation Test - Low Dose				С	5 days	LAB			Call Medical Day Care at DECRH for testing information. Referred.
ACTH Stimulation Test - Standard Dose	Blood			С	5 days	LAB	ACTHS	ACTHS	See ACTH <u>Stimulation</u> test in the Chemistry Divison section of this manual for additional information. Referred.
ACTH Stimulation Test for CAH (Congenital Adrenal Hyperplasia)	Blood			С	7 Days	LAB		ACTH ST FOR CAH	Call Medical Day Care at DECRH for testing information. Referred.
Actinomyces	Swab	Anaerobic Swab		М	4 days	MIC	ACT	ACTIN	Collect using an anaerobic swab collection container- obtain from Microbiology. Store at room temperature.
Activated Partial Thromboplastin Time (APTT)	Blood	Blue (Sodium Citrate)	2.7 mL Exactly	Н	Stat 1 hr Routine 24 hr	LAB	APTT	APTT	<ul> <li>Heparinized samples: Deliver to the lab within 30 minutes of collection. Nonheparinized samples: Deliver to the lab within 2 hours of collection. If transported, platlet poor plasma (count &lt; 10) must be achieved with the following procedure: <ol> <li>1<sup>st</sup> spin: Spin specimens in the centrifuge, after 1<sup>st</sup> spin is complete, remove blue tubes from centrifuge and transfer 1<sup>st</sup> spin plasma to a separate labeled 12x75 plastic tube.</li> <li>2<sup>nd</sup> spin: Cap the 12x75 tubes and re-spin plasma, after 2<sup>nd</sup> spin is complete, carefully remove tubes from centrifuge, without disrupting platelets at bottom of tube.</li> <li>Carefully remove platelet poor plasma, leaving sediment (containing platelets) in bottom of tube. Transfer directly to labeled 12x75 plastic tube for the platelet count. Perform and record plt count on label if applicable.</li> </ol> </li> <li>4. Send frozen in 1 aliquot of 2 mL.</li> </ul>
Activated Protein C Resistance									Test no longer available

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Acylcarnitine	Blood	Blood Blotter		С	8 Days	LAB	ACYCAR	ACYCAR	Referred - allow blotter to dry for 3 hours and send at Room Temperature.
Adalimumab (Humira™)	Blood	Red	6 mL	С	20 Days	LAB	ADAL	ADAL	Draw trough specimen prior to next dose. Specimen must be delivered to the lab within 2 hours; otherwise, serum must be separated from the cells within 2 hours of collection and stored at 4 °C. If not delivered to DECRH within 24 hours sample must be frozen at -70°C. Referred – 1 mL frozen.
Adenovirus/Rotavirus- see Stool Viral PCR	Stool			М					Rapid test no longer available. Included in Stool Viral PCR.
Adenovirus- Respiratory	nose/throat nasopharyng eal	UTM (Viral Transport Media)		М	1 Week	MIC	ADENO-RESP	ADENO-RESP	Specimen refrigerated until delivery to laboratory. 2-8°C if sending same day or Freeze at -70°C.
Adenovirus-Non Respiratory	Tissue Fluid	Sterile Screw- cap jar		М	1 Week	MIC	ADENONONRESP	ADENONONRE SP	Deliver to laboratory immediately. Specimen refrigerated until delivery to laboratory. 2-8°C if sending same day or Freeze at -70°C.
ADH (Antidiuretic Hormone) (Vasopressin)									Test <b>no longer available.</b> Please refer to Copeptin proAVP. Has replaced ADH and AVP as indicators of water balance disorders.
AFP (Alpha Fetoprotein -Tumor Marker)	Blood	Light Green	1 mL	С	4 Days	LAB	AFP	AFP	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. AFP tumor marker is done at DECRH. If transported, serum must be sent frozen if not received at DECRH within 7 days of collection. For genetic testing, see Maternal Serum Screen (MSAFP)
	a) Blood	Light Green	1 mL	С	< 24 Hours		ALB	ALB	a) Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C.
Albumin	b) Spinal Fluid	Sterile Screw-cap tube	0.5 mL	С	< 24 Hours	LAB	ALB-CSF	ALB-CSF	b) Deliver tube # 1 of the three tubes collected to Chemistry immediately.
	c) Body Fluid	Dark Green	2 mL	С	< 24 Hours		ALB-FLUID	ALB-F	c) Invert tube several times to mix. Indicate origin of fluid.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Alcohol, Ethyl (Ethyl Alcohol) (Ethanol)	Blood	Gray	Full	С	< 24 Hours	LAB	ALC	ALC	a) Do not use any type of alcohol to disinfect skin. The tube must be allowed to draw to complete full vacuum. Invert tube several times to mix. <b>Keep tube sealed until analysis</b> . Medicolegal specimens should be delivered directly to a police officer, not to the laboratory. If transported, do not centrifuge. This test is also part of a Drug Toxic Panel (DRUG-TOX). See Chemistry Section in this manual for additional information.
Alcohol, Isopropyl (Isopropyl Alcohol) (Isopropanol)	Blood	Gray	Full	С	< 24 Hours	LAB	ISOPRO	ISOPRO	Do not use any type of alcohol to disinfect skin. Collection tube must be allowed to draw to complete vacuum. Invert tube several times to mix. <b>Keep tube sealed unti analysis.</b> Medicolegal specimens should be delivered directly to a police officer, not to the laboratory. If transported, do not centrifuge. Serum osmolality, Glucose, Urea and Sodium (2 mL blood in a Spotted or Red tube is required) should also be requested.
Alcohol, Methyl (Methyl Alcohol) (Methanol)	Blood	Gray	-Full	С	< 24 Hours	LAB	METH	METH	Do not use any type of alcohol to disinfect skin. Collection tube must be allowed to draw to complete vacuum. Invert tube several times to mix. <b>Keep tube sealed unti analysis.</b> Medicolegal specimens should be delivered directly to a police officer, not to the laboratory. If transported, do not centrifuge. Serum osmolality, Glucose, Urea and Sodium (2 mL blood in a Spotted or Red tube is required) should also be requested.
Aldosterone	Blood	Red	6 mL	С	10 Days	LAB	ALDO	ALDO	Patient to discontinue Spironolactone (Aldactone) for 2 weeks prior to collection. Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, remove serum immediately, store at 4°C. 8 am draw time (after paient is active for 2 hours) is recommended (preferably no later than 10 am). If Aldosterone and Renin are both ordered, an Aldosterone/Renin ratio will also be reported. If transported, send serum frozen. Referred – 1.2 mL serum, frozen.
Aldosterone/Renin Ratio				С	10 Days	LAB		RATIO ALDO REN	This is a calculation to be ordered only when both Aldosterone and Renin are ordered.
Alkaline Phosphatase	Blood	Light Green	1 mL	С	< 24 Hours	LAB	ALK	ALK	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C.
Alkaline Phosphatase Fractionation	Blood	GOLD	5mL	С	15 Days	LAB	ALKF	ALKFRACT	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Avoid hemolysis. Indicate age and clinical problem requiring fractionation analysis -"Elevated Alkaline Phosphatase" OR "Differentiate suspected bone/liver disease". Referred - 2 mL Serum

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Allergy Test (Rast)	Blood	GOLD	5 mL	С	30 Days	LAB	RAST	RAST	Specimen must be delivered to lab within 2 hours; otherwise, centrifuge specimen within 2 hours of collection, store upright at 4°C. Specify antigen(s) to be tested (maximum 10). Referred - 2 mL Serum Freeze in 2 aliquots of 1 ml each.
Alpha 1 Antitrypsin - Total and Phenotyping	Blood	Red	6 mL	С	20 Days	LAB	ANTITRY	A1AT	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Phenotyping will be referred if Total Alpha 1 Antitrypsin is < 1.15 g/L.
Alpha 2 Antiplasmin (Alpha 2 Plasma Inhibitor)	Blood	Blue X 2 (Sodium Citrate)	4.5 mL x 2	С	12 Days	LAB	AAPLAS	AAPLAS	Deliver to Chemistry immediately. Separate and freeze plasma ASAP. Referred - 3 mL Plasma frozen
Alpha 2 Galactosidase	Blood	GOLD	5 mL	С	15 Days	LAB	AGALC	AGALC	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Referred - 2 mL Serum frozen
Alpha 2 Plasma Inhibitor (Alpha 2 Antiplasmin)	Blood	Blue X 2 (Sodium Citrate)	4.5 mL x 2	С	12 Days	LAB	AAPLAS	AAPLAS	Deliver to Chemistry immediately. Separate and freeze plasma ASAP. Referred - 3 mL Plasma frozen
Alpha Fetoprotein -Tumor Marker (AFP)	Blood	Light Green	1 mL	С	4 Days	LAB	AFP	AFP	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. AFP tumor marker is done at DECRH. If transported, serum must be sent frozen if not received at DECRH within 7 days of collection. For genetic testing, see Maternal Serum Screen (MSAFP).
Alpha Fetoprotein, Maternal (Maternal Serum Screen)	Blood	Gold or Red	6 mL	CG	15-20 Days	LAB	MATERNLAFP	MSAFP	Specimen must be delivered to the lab within 2 hours; otherwise, serum must be separated from the cells within 2 hours of collection and stored at 4°C. If transported, serum must be frozen if not received at DECRH within 48 hours of collection. For early screening pregnancy should be at least 9 weeks and no more than 13 weeks gestation for interpretation of results. For second trimester screening pregnancy should be 15 weeks to 20 6/7 weeks for interpretation of results. A properly completed requisition MUST arrive with, or in advance of, the specimen. Referred
Alprazolam (Xanax)									Test no longer routinely available
ALT, Alanine Aminotransferase (SGPT)	Blood	Light Green	1 mL	С	< 24 Hours	LAB	ALT	ALT	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Avoid hemolysis.
Test	Specimen	Container	Amount	Department	Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
----------------------------------	----------------------	---	---	------------	--------------------	----------------	--------------------	-----------------	---
Aluminum	a) Blood b) Urine	Royal Blue EDTA Heavy metal free large plastic bottle	6 mL Complet e 24 hour output	С	15 Days 15 Days	LAB	ALUM ALUMINU-24	AL AL-24h	<ul> <li>a) Do not centrifuge. Store and send cold. Referred - 6 mL whole blood referred</li> <li>b) Refer to <u>Diet/Drug Restriction form HHN-0840</u> for patient restrictions.</li> <li>If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot. Measure 24 hour urine using an acid washed cylinder. Transfer 10 mL aliquot to a metal-free polypropylene vial. Referred</li> </ul>
Amikacin	Blood	Red	6 mL	С	6 Days	LAB	AMI	AMI	<ul> <li>Trough – Collect immediately before next dose. Wait until the third dose before collecting samples for therapeutic monitoring.</li> <li>Peak – For traditional dosing, collect sample 30 minutes after end of dose infusion.</li> <li>Wait until the third dose before collecting samples for therapeutic monitoring. <ul> <li>For extended dosing, after the third dose collect a sample 8-12 hours after end of dose infusion.</li> </ul> </li> <li>Specimen must be delivered to the lab within 2 hours; otherwise, serum must be separated from the cells within 2 hours of collection and frozen. See Chemistry Section in this manual for additional information.</li> <li>Referred - 1 mL Serum frozen</li> </ul>
Amino Acid Quantitation	a) Blood b) Urine	Light Green (on wet ice) Screw-cap jar	5 mL 5 mL	C	12 Days 12 Days	LAB	AA-QT AA-S	AA-QT AA-S	<ul> <li>a) Following collection place sample on wet ice and deliver to Chemistry immediately. Fasting specimen preferred. Avoid hemolysis. For interpretation, provide date of birth and clinical indicators. Separate plasma from clot and freeze ASAP. Referred - 1 mL Plasma frozen.</li> <li>b) Random urine sample. Refrigerate and refer to DECRH at 4°C. For interpretation, provide date of birth and clinical indicators. Please indicate if taken from 24-hour collection.</li> <li>Referred - 5 mL urine aliquot frozen</li> </ul>
Amino Acid Screen (AA Screen)	Urine								Test no longer available.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Aminophylline (Theophylline)	Blood	Red	1 mL	С	< 24 Hours	LAB	THEO	THEO	Specimen must be delivered to the lab within 2 hours; otherwise, centrifuge and remove serum within 2 hours of collection and store at 4°C. If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection. <b>Oral - sustained release:</b> Twice daily products: draw peak about 4 hours after dose. Once daily products: draw peak about 10 hours after dose. Consult individual product monographs. Draw trough immediately prior to dose. <b>Liquid and plain uncoated tablets:</b> Draw peak 1-2 hours after liquid dose or 2 hours after tablet dose. Draw trough immediately prior to dose. <b>IV loading dose:</b> Draw 30 minutes after an IV loading dose. <b>Followed by IV continuous infusion:</b> Draw 24-48 hours after the beginning of the maintenance infusion. See Chemistry Section in this manual for additional information.
Amiodarone (Cordarone)	Blood	Red	6 mL	С	12 Days	LAB	AMIO	AMIO	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge, remove serum within 2 hrs of collection, store at 4°C. Draw trough prior to next dose. Referred - 3 mL Serum
Amitriptyline (Elavil)	Blood	Red	6 mL	С	10 Days	LAB	AMIT	AMIT	Draw 1 hour prior to next dose or at least12 hours after last dose. Specimen must be delivered to the lab within 2 hrs; otherwise, serum must be separated from the cells within 2 hrs of collection. Store at 4°C. See Chemistry Section in this manual for additional information. Referred - 2 mL Serum
Ammonia	Blood	Lavender (pre-chilled)	Full	С	STAT ≤45 minutes* Routine < 24 Hours	LAB	АММ	AMMON	Contact laboratory before drawing specimen except if collecting during the day shift Monday to Friday. Avoid hemolysis. Deliver on ice to Chemistry immediately. The tube must be allowed to draw to complete vacuum. Invert tube several times to mix. <b>Do not use capillary collection for this test. Plasma must be separated and</b> <b>analyzed or frozen within 20 minutes of time of collection.</b> If transported, send 2 aliquots of frozen plasma. <b>*Turn around time would be impacted by travel in all sites except DECRH</b>
Amniocentesis for Chromosome Studies	Amniotic fluid	Sterile Screw-cap tube x 2 (If FISH is also requested add 1 more tube for a total of 3)	10 mL x 2	CG	90 Days			AMNIO	If FISH testing is also requested, 1 more tube is required for a total of 3. Draw specimen on Monday to Wednesday mornings only. Specimens must be kept at Room Temperature. A properly completed requisition MUST arrive with, or in advance of, the specimen. Requisition available from Chemistry. Referred

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
AMP (Cyclic AMP)	Blood and Urine	GOLD and Screw-cap jar	5 mL and 10-15 mL	С	9 Days	LAB	AMP	AMP	Both blood and random urine are required. Blood must be collected at the same time as the urine. Label specimens as "Serum" or "Urine". Blood specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, store upright at 4°C. Referred - 1 mL Serum frozen, 10-15 mL Urine aliquot frozen.
Amphetamines	Urine	Screw-cap jar	5 mL	С	< 24 Hours	LAB	AMPHE	AMPHET-U	Random specimen. This is a semi-quantitative test. If transported, urine must be sent frozen if not received at DECRH within 48 hours of collection.
Amylase (Pancreatic)	Blood	Light Green	1 mL	С	STAT ≤45 minutes Routine	LAB	AMY	AMYL	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, store upright at 4°C.
					< 24 Hours				
Amylase Fractionation (Isoenzymes)	Blood	GOLD	5 mL	С	25 Days	LAB	AMYISO	AMYISO	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Serum Amylase must be elevated. Include diagnosis on requisition. Referred - 1 mL Serum
Anaerobic Culture	Swab	Anaerobic Swab- obtain from Microbiology		Μ	4-7 days	MIC	ANCULT	ANCULT	Place swab in anaerobic collection medium. Deliver <b>immediately</b> to the laboratory. Store at room temperature.
Anafranil (Clomipramine)	Blood	Red	6 mL	С	12 Days	LAB	CMP	CMP	Draw 1 hour prior to next dose or at least 12 hours after last dose. Deliver to the lab immediately. Separate serum from clot ASAP. Referred - 3 mL Serum
Anatomical Pathology - Tissue	Breast Tissue	See Collection Instructions	See Collection Instruction	AP	Biopsy 80% ≤ 8 days Other 80% ≤ 14 days	N/A	Cannot be ordered through Meditech OE	N/A	See <u>Anatomical</u> Pathology Section in this manual. Special procedures apply.
Anatomical Pathology - Tissue	Fetal Tissue	See Collection Instructions	See Collection Instructios	AP	Variable, Complexity dependent	N/A	Cannot be ordered through Meditech OE	N/A	This is a referred test. See <u>Anatomical</u> Pathology_Section in this manual as well as <u>IWK Health Centre - Clinical Genomics - Genetic Testing for IUFD and Products of</u> <u>Conception (POC)</u> . Special procedures apply.
Anatomical Pathology - Tissue	Kidney Biopsy	See Collection Instructions	See Collection Instruction	AP	Variable, Complexity dependent	N/A	Cannot be ordered through Meditech OE	N/A	This is a referred test. See <u>Anatomical</u> Pathology Section in this manual. Contact the Anatomical Pathology department at least 7 days prior to surgical procedure.

Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use

Laboratory User Manual Version 40.0

Page 111 of 242

Effective Date: January 24, 2022

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Anatomical Pathology - Tissue	Lymph Node	See Collection Instructions	See Collection Instruction	AP	Variable, Complexity dependent	N/A	Cannot be ordered through Meditech OE	N/A	This is a referred test. See <u>Anatomical</u> Pathology Section in this manual.
Anatomical Pathology - Tissue	Muscle Biopsy	See Collection Instructions	See Collection Instruction	AP	Variable, Complexity dependent	N/A	Cannot be ordered through Meditech OE	N/A	This is a referred test. See <u>Anatomical</u> Pathology Section in this manual. Contact the Anatomical Pathology department at least 7 days prior to surgical procedure.
Anatomical Pathology - Tissue	Nerve Biopsy	See Collection Instructions	See Collection Instruction	AP	Variable, Complexity dependent	N/A	Cannot be ordered through Meditech OE	N/A	This is a referred test. See <u>Anatomical</u> Pathology Section in this manual. Contact the Anatomical Pathology department at least 7 days prior to surgical procedure.
Anatomical Pathology - Tissue	Tissue	See Collection Instructions	See Collection Instruction	AP	Biopsy 80% ≤ 8 days Other 80% ≤ 14 days	N/A	Cannot be ordered through Meditech OE	N/A	See <u>Anatomical</u> Pathology Section in this manual. Special procedures may apply.
Anatomical Pathology - Tissue	Tissue - Immunofluore scent Studies	<ul> <li>Biopsy in Zeus Tissue Fixative And</li> <li>Biopsy in 10% Neutral Buffered Formalin</li> </ul>	10 ml 50 ml	AP	80% ≤ 14 days	N/A	Cannot be ordered through Meditech OE	N/A	See <u>Anatomical Pathology</u> Section in this manual. Place specimen in Zeus Tissue Fixative. Call the Anatomical Pathology Laboratory for issue of fixative. Zeus Tissue Fixative distorts normal histology. Please submit a second biopsy in 10% Neutral Buffered Formalin (TissueFix) for routine examination.
Androstenedione	Blood	GOLD	5 mL	С	10 Days	LAB	ANDRO	ANDRO	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. For women, collection of specimen one week before or after menstrual period is required. Referred - 2 mL Serum frozen
Angiotensin Converting Enzyme	Blood	GOLD	5 mL	С	8 Days	LAB	ACE	ACE	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. 14 hour fast is required. Referred - 1 mL Serum
Anti-Adrenal Antibodies	Blood	GOLD	5 mL	С	15 Days	LAB	ANTI-ADREN	ANTIADRENAL	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Referred - 1 mL Serum
Anti-AQU 4 (Anti- aquaporin 4)	Blood	Gold	6 mL	С	14 days	LAB	NMO AB	NMO AB	Refer to Neuromyelitis Optica Spectrum Disorder Profile

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Antibody Identification	Blood	Pink	6 mL	ТМ	24 hr			ABID	Avoid hemolysis. If transported, $\rm DO~NOT$ separate plasma from cells and transport within 24 hours at 2-8°C to DECRH
Antibody Titre	Blood	Pink x 2	6 mL x 2	ТМ	96 hr			ABQT	Avoid hemolysis. If transported, $\rm DO~NOT$ separate plasma from cells and transport within 24 hours at 2-8°C to DECRH
Anti-Cardiolipin Antibody	Blood	Red Gold	5 mL	Н	21 days	LAB	ACA	ACA	<ul> <li>Avoid hemolysis. Separate serum within 2 hours of collection. If specimen cannot be transported to DECRH within 24 hours of collection, centrifuge and separate serum as follows:</li> <li>Red or Gold- If transported, Gold tube only requires one spin. Red tube requires two spins to ensure no red cells are left in the serum. <ul> <li>1st spin: Spin specimens in the centrifuge, after 1st spin is complete, remove tubes from centrifuge and transfer 1st spin serum to a separate labeled 12x75 plastic tube. <ul> <li>2nd spin: Cap the labelled 12x75 tubes and re-spin serum, after 2nd spin is complete, carefully remove tubes from centrifuge, without disrupting button at bottom of tube.</li> <li>Remove serum, leaving sediment in bottom of tube. Transfer directly to labeled 12x75 plastic tube. <li>Send 1 aliquot of 0.5 – 1.0 mL at 4°C</li> </li></ul></li></ul></li></ul>
Anti-Cholinesterase (Acetylcholine Receptor Antibodies)	Blood	Gold	5 mL	С	25 Days	LAB	ACETY	ACETYCO	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Referred - 2 mL Serum frozen

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Anti-Cyclic Citrullinated Peptide	Blood	Red Gold	5 mL	Н	14 days	LAB	ANTI CCP	ССР	<ul> <li>Avoid hemolysis. Separate serum within 2 hours of collection. If specimen cannot be transported to DECRH within 24 hours of collection, centrifuge and separate serum as follows:</li> <li>Red or Gold- If transported, Gold tube only requires one spin. Red tube requires two spins to ensure no red cells are left in the serum. <ul> <li>1st spin: Spin specimens in the centrifuge, after 1st spin is complete, remove tubes from centrifuge and transfer 1st spin serum to a separate labeled 12x75 plastic tube.</li> <li>2nd spin: Cap the labelled 12x75 tubes and re-spin serum, after 2nd spin is complete, carefully remove tubes from centrifuge, without disrupting button at bottom of tube.</li> <li>Remove serum, leaving sediment in bottom of tube. Transfer directly to labeled 12x75 plastic tube. <ul> <li>Send 1 aliquot of 0.5 – 1.0 mL at 4°C</li> </ul> </li></ul></li></ul>
Anti-deaminated Gliadin IgG	Blood	Red Gold	5 mL	Н	1 month	LAB	DGPIGG	DGPIGG	<ul> <li>Avoid hemolysis. Separate serum within 2 hours of collection. If specimen cannot be transported to DECRH within 24 hours of collection, centrifuge and separate serum as follows:</li> <li>Red or Gold- If transported, Gold tube only requires one spin. Red tube requires two spins to ensure no red cells are left in the serum. <ul> <li>1st spin: Spin specimens in the centrifuge, after 1st spin is complete, remove tubes from centrifuge and transfer 1st spin serum to a separate labeled 12x75 plastic tube.</li> <li>2nd spin: Cap the labelled 12x75 tubes and re-spin serum, after 2nd spin is complete, carefully remove tubes from centrifuge, without disrupting button at bottom of tube.</li> <li>Remove serum, leaving sediment in bottom of tube. Transfer directly to labeled 12x75 plastic tube. <ul> <li>Send 1 aliquot of 0.5 – 1.0 mL at 4°C</li> </ul> </li></ul></li></ul>
Antidiuretic Hormone (ADH) (Vasopressin)									Test <b>no longer available.</b> Please refer to Copeptin proAVP. Has replaced ADH and AVP as indicators of water balance disorders.
Anti-DNase B									Test no longer available.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Anti-Gliadin Antibody									Test no longer available
Anti-Glomerular Basement Membrane Antibody (Glomerular Basement Membrane Antibody)	Blood	GOLD	5 mL	С	8 Days	LAB	ANTIGLO	ANTIGLO	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Referred - 1 mL Serum frozen
Anti-Glutamic Acid Decarboxylase	Blood	GOLD	5 mL	С	6 Days	LAB	GAD	GAD	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Referred – 1 mL Serum
Anti-GM1 (GM1 Ganglioside Antibody)	Blood	Red	6 mL	С	12 Days	LAB	ANTIGM	ANTIGM	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Referred 1 mL frozen on ice packs.
Anti-Heparin Antibody (Heparin Induced Thrombocytopenia)	Blood	Red and Blue	2X6 mL and 3X2.7 mL	Н	5 Days	LAB	AHEP	АНЕР	<ul> <li>Specimen must be delivered to lab within 1 hour; otherwise, centrifuge specimen within 1 hour, and separate serum/plasma. Specimens must be double-spun, aliquoted and clearly marked plasma and serum. If transported, platelet poor plasma (count &lt; 10) must be achieved with the following procedure: <ol> <li>1. 1<sup>st</sup> spin: Spin specimens in the centrifuge, after 1<sup>st</sup> spin is complete, remove blue tubes from centrifuge and transfer 1<sup>st</sup> spin plasma to a separate labeled 12x75 plastic tube.</li> </ol> </li> <li>2. 2<sup>nd</sup> spin: Cap the 12x75 tubes and re-spin plasma, after 2<sup>nd</sup> spin is complete, carefully remove tubes from centrifuge, without disrupting platelets at bottom of tube.</li> <li>3. Carefully remove platelet poor plasma, leaving sediment (containing platelets) in bottom of tube. Transfer directly to labeled 12x75 plastic tube for the platelet count. Perform and record plt count on labels.</li> </ul> Freeze promptly. Send frozen: 3 aliquots of "clearly marked" plasma and 3 aliquots of "clearly marked" serum. Referred.
Anti-Histone Antibody	Blood	GOLD	5 mL	С	15 Days	LAB	AHIS	AHIS	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Referred - 1 mL Serum frozen
Anti-Intrinsic Factor (Intrinsic Factor Antibodies)	Blood	GOLD	5 mL	С	35 Days	LAB	AIFA	AIFA	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Referred - 3 mL Serum

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Anti-MAG (Myelin Associated Glycoptotein IgM Antibody)	Blood	Red	6 mL	С	14 Days	LAB	MYEGLYCO	ANTIMAG	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen, separate and store at 4°C. Sample is stable for 7 days at 4°C. Referred - 2 mL serum frozen
Anti-MOG (anti-myelin oligodendrocyte glycoproteins)	Blood	Gold	6 mL	С	14 Days	LAB	NMO AB	NMO AB	Refer to Neuromyelitis Optica Spectrum Disorder profile
Antimony									No longer routinely available. Contact Biochemist for special requests.
Anti-Mullerian Hormone	Blood	Red	6 mL	С	15 Days	LAB	AMH	AMH	Deliver to the lab immediately. Separate serum from clot and freeze ASAP. Specimen must remain frozen. Referred - 1 mL Serum frozen Please see <u>Utilization</u> rules
Anti-Neutrophil Cytoplasmic Antibody: ANCA Vasculitis ANCA IBD or Hepatitis	Blood	GOLD or Red	5 mL	Н	Stat 8 hr Routine 14 days	LAB	ANCAVAS OR ANCAIBDHEP	ANCAVAS OR ANCAIBDHEP	<ul> <li>Avoid hemolysis. Separate serum within 2 hours of collection. If specimen cannot be transported to DECRH within 24 hours of collection, centrifuge and separate serum as follows:</li> <li>Red or Gold- If transported, Gold tube only requires one spin. Red tube requires two spins to ensure no red cells are left in the serum. <ul> <li>1st spin: Spin specimens in the centrifuge, after 1st spin is complete, remove tubes from centrifuge and transfer 1st spin serum to a separate labeled 12x75 plastic tube.</li> <li>2nd spin: Cap the labelled 12x75 tubes and re-spin serum, after 2nd spin is complete, carefully remove tubes from centrifuge, without disrupting button at bottom of tube.</li> <li>Remove serum, leaving sediment in bottom of tube. Transfer directly to labeled 12x75 plastic tube. <ul> <li>Send 1 aliquot of 0.5 – 1.0 mL at 4°C</li> </ul> </li></ul></li></ul>

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Anti-Nuclear Antibody (ANA)	Blood	Red Gold	5 mL	Н	14 days	LAB	ANA	ANA	<ul> <li>Avoid hemolysis. Separate serum within 2 hours of collection. If specimen cannot be transported to DECRH within 24 hours of collection, centrifuge and separate serum as follows:</li> <li>Red or Gold- If transported, Gold tube only requires one spin. Red tube requires two spins to ensure no red cells are left in the serum. <ul> <li>1st spin: Spin specimens in the centrifuge, after 1st spin is complete, remove tubes from centrifuge and transfer 1st spin serum to a separate labeled 12x75 plastic tube.</li> <li>2nd spin: Cap the labelled 12x75 tubes and re-spin serum, after 2nd spin is complete, carefully remove tubes from centrifuge, without disrupting button at bottom of tube.</li> <li>Remove serum, leaving sediment in bottom of tube. Transfer directly to labeled 12x75 plastic tube. <ul> <li>Send 1 aliquot of 0.5 – 1.0 mL at 4°C</li> </ul> </li></ul></li></ul>
Anti-Ovarian Antibodies (Ovarian Antibodies)	Blood	GOLD	5 mL	С	35 Days	LAB	ANTIOVA	ANTIOVA	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store and send at 4°C. Referred - 1 mL Serum

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Anti-Phospholipid Syndrome	Blood	GOLD or Red Blue (Sodium Citrate) x 3	5mL and 2.7 mL Exactly in each tube	Н	25 days	LAB	APS	APS	<ul> <li>Avoid hemolysis. Separate serum within 2 hours of collection. If specimen cannot be transported to DECRH within 24 hours of collection, centrifuge and separate serum as follows:</li> <li>Red or Gold- If transported, Gold tube only requires one spin. Red tube requires two spins to ensure no red cells are left in the serum. <ul> <li>1st spin: Spin specimens in the centrifuge, after 1st spin is complete, remove tubes from centrifuge and transfer 1st spin serum to a separate labeled 12x75 plastic tube.</li> <li>2nd spin: Cap the labelled 12x75 tubes and re-spin serum, after 2nd spin is complete, carefully remove tubes from centrifuge, without disrupting button at bottom of tube.</li> <li>Remove serum, leaving sediment in bottom of tube. Transfer directly to labeled 12x75 plastic tube. </li> <li>Send 1 aliquot of 0.5 – 1.0 mL at 4°C</li> </ul> Blue x 3 Deliver to the lab within 2 hours of collection. If transported, platelet poor plasma (count &lt; 10) must be achieved with the following procedure: <ul> <li>1<sup>st</sup> spin: Spin specimens in the centrifuge, after 1<sup>st</sup> spin is complete, remove blue tubes from centrifuge, without disrupting platelets at bottom of tube.</li> </ul> 6. Carefully remove blue tubes from centrifuge, without disrupting platelets at bottom of tube. 7. Send frozen in 3 aliquots of 1.5 - 2 mL each.</li></ul>
Anti-Pancreatic Islet (Islet Cell Antibody)	Blood	GOLD	5 mL	С	12 Days	LAB	ICAB	ICAB	Deliver to Chemistry immediately. Separate serum from clot and store at 2-8°C. Referred - 1 mL Serum
Anti-Saccharomyces Cerevisiae Antibody	Blood	GOLD or Red	5 mL	М	25 days	LAB	SEROL	SEROL	Separate and send serum if delay in transit of greater than 2 hours. 2-8°C if sending same day or Freeze at -70°C.Referred. Indicate specimen order in comments.

Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Anti-Thrombin III	Blood	Blue (Sodium Citrate) X 2	2.7 mL x 2 Exactly	Н	Stat 1 hr Routine 21 days	LAB	AT3	ATIII	<ul> <li>Deliver to the lab within 2 hours of collection. If transported, platelet poor plasma (count &lt; 10) must be achieved with the following procedure: <ul> <li>a. 1<sup>st</sup> spin: Spin specimens in the centrifuge, after 1<sup>st</sup> spin is complete, remove blue tubes from centrifuge and transfer 1<sup>st</sup> spin plasma to a separate labeled 12x75 plastic tube.</li> <li>2<sup>nd</sup> spin: Cap the 12x75 tubes and re-spin plasma, after 2<sup>nd</sup> spin is complete, carefully remove tubes from centrifuge, without disrupting platelets at bottom of tube.</li> </ul> </li> <li>10. Carefully remove platelet poor plasma, leaving sediment (containing platelets) in bottom of tube. Transfer directly to labeled 12x75 plastic tube for the platelet count. Perform and record plt count on label if applicable.</li> <li>11. Send frozen in 1 aliquot of 2 mL.</li> </ul>
Anti-Thyroglobulin Antibody	Blood	Gold	7 mL	С	8 Days	LAB	ANTI-TG	ANTI-TG	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection. Referred – 1.5 mL Serum-frozen. (ANTI-TG testing will be performed as part of the Thyroglobulin panel.)
Anti Thyroperoxidase	Blood	Gold	7 mL	С	20 Days	LAB	ANTI-TPO	ANTI-TPO	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection. Referred – 1.5 mL Serum-frozen.
Anti-Yo, Anti-Hu, Anti-Ri (Paraneoplastic Autoantibody Evaluation	Blood	GOLD	5 mL	С	20 Days	LAB	PARANEOP	PARANEOP	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Referred - 2 mL Serum frozen
Apolipoprotein A1	Blood	Red / GOLD	7 mL	С	15 Days	LAB	APOA	АРОА	Collect after a 14 hr fast. Specimen must be delivered to the lab within 2 hours; otherwise, serum must be separated from the cells within 2 hours of collection and stored at 4°C. If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection. Referred - 1 mL Serum

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Apolipoprotein B	Blood	GOLD	5mL	С	15 Days	LAB	APOB	APOB	Specimen must be delivered to the lab within 2 hrs; otherwise, centrifuge within 2 hr of collection, store upright at 4°C. If transported, serum must be frozen if not received at DECRH within 72 hours of collection If a red tube is used, remove serum immediately. Please see <u>Utilization</u> rules Referred – 1 mL Serum
APT Test	Fresh Meconium	Screw-cap jar		Н	Stat 4 hr Routine 24 hr	LAB	APT	APT	Deliver to Haematology immediately.
Arbovirus Serology	Blood	Red or GOLD	5 mL	М	25 days	LAB	ARBOVIRUS	ARBOVIRUS	MUST have travel history. Deliver to the laboratory immediately. If transported, separate serum from clot and store. 2-8°C if sending same day or Freeze at -70°C. Referred.
Arsenic	a) Urine b) Hair	Heavy metal free large plastic bottle	Complet e 24 hour output	С	15 Days		ARS	AS	a) Refer to <u>Diet/Drug Restriction form HHN-0840</u> for patient restrictions. If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot. Remember to measure 24 hour urine using an acid washed cylinder and transfer 10 mL aliquot to a metal-free polypropylene vial. Referred
	c) Nail	Screw-cap jar	0.05 g	С	20 Days		ARSN	AS-NAIL	b) Test no longer available. c) Submit clippings from all 10 fingers or toes. Referred – 0.05 g nail clippings
Arylsulphatase A	Blood	Dark Green x 2	6mL x 2	С	45 Days	LAB	ASULA	ASULA	Chemistry must be informed 24 hours before collection. Collect specimen weekdays between 1000 and 1300 AM at DECRH only. Deliver to Chemistry immediately. Referred - special preparation.
ASA (Salicylate)	Blood	Red	1 mL	С	< 24 Hours	LAB	SAL	SAL	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Avoid Hemolysis. If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection. This test is also part of a Drug Toxic Panel (DRUG-TOX).

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
ASO (Anti-Streptolysin O Screen)	Blood	Red or GOLD	5 mL	М	7 days STAT 24 hrs			ASO	Avoid haemolysis. Deliver to the laboratory immediately. If transported, separate serum from clot and send serum. Store at 2-8 $\degree$ for up to 48 hours after collection. Send on ice pack or -70 $\degree$ for extended storage.
Aspergillus IgE	Blood	GOLD	5 mL	М	14 days	LAB	SEROL	SEROL	Deliver to the laboratory immediately. If transported, separate serum from clot and store at 2-8°C if sending same day or Freeze at -70°C. Referred.
Aspergillus Serology	Blood	Red or GOLD	5 mL	М	14 days	LAB	ASPAB	ASPAB	Includes: Aspergillus fumigatus only. Deliver to the laboratory immediately. If transported, separate serum from clot and store at 2-8°C if sending same day or Freeze at -70°C. Referred For Farmers Lung see Farmers Lung
AST, Aspartate Aminotransferase (SGOT)	Blood	Light Green	1 mL	С	< 24 Hours	LAB	AST	AST	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Please see Utilization rules
Ativan (Lorazepam)	Blood	Red	6 mL	С	15 Days	LAB	LOR	LOR	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Draw trough prior to next dose. Referred - 3 mL Serum
Aventyl (Nortriptyline)	Blood	Red	6 mL	С	10 Days	LAB	NORT	NORT	Collect within 1 hour prior to next dose or 12 hours after last dose. Deliver to the lab immediately. Separate serum from clot ASAP, store and send at 4°C. Referred – 3 mL Serum
Azathioprine Metabolites									Refer to Thiopurine Metabolites
B12 (Vitamin B12)	Blood	Light Green	1 mL	С	< 24 Hours	LAB	B12	B12	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection. Please see <u>Utilization</u> rules
BABESIA Parasites Smear and PCR testing	Whole Blood	Lavender x 2	3 mL x 2	H/M	Stat Smear preliminary 4 hr Routine Smear 48 hr	LAB	BABESIA	BABESIA	Indicate endemic area on requisition. Deliver to the laboratory immediately. If transported, specimen must arrive at DECRH laboratory on day of collection. Store at 2-8 °C.
BABESIA Parasites PCR testing only	Whole Blood	Lavender	3 mL	М	17 days			BABESIAPCR	Indicate endemic area on requisition. Deliver to the laboratory immediately. If transported, specimen must arrive at DECRH laboratory on day of collection. Store at 2-8 °C.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Bactrim (Sulfamethoxazole)	Blood	Red	6 mL	С	7 Days	LAB	BACT	SULFAM	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Serum for a peak level should be drawn 30 minutes after completion of infusion of an intravenous dose or 60 minutes after an intramuscular or oral dose. Referred - 1 mL Serum frozen
Barbiturates									Test no longer available.
Bartholin's Abscess	Swab	Routine Swab		М	72 hours	MIC	BART	BART	Specimen kept at room temperature
Bartonella Serology (Cat Scratch Fever)	Blood	Red or GOLD	5 mL	М	25 days	LAB	BART	BART	If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred.
BCR-ABL	Blood	Lavender x 2		CG	25 Days		BCR-ABL	BCR-ABL	Collect blood Monday through Thursday before 1200h. Specimen must arrive at referral site within 24h of collection. Store and ship at room temperature. A completed and signed SJRH Molecular Diagnostics Laboratory requisition must be submitted with the sample. Referred - Whole blood.
Bed Bug	Bed bug	Sterile Screw-cap jar		М	48 hours	MIC	INS	INS	Place a few drops of water in the jar. Store at room temperature.
Benadryl (Diphenhydramine)	Blood	Gold	5 mL	С	8 Days	LAB	BEN	DIPHENHY	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Referred - 1 mL Serum
	a) Blood				7 Days				a) Test no longer available.
	b) Urine	Screw-cap jar	30 mL	С	7 Days		BJP	BJP	b) Random specimen (early morning urine preferred).
Bence Jones Protein	c) Urine	Large plastic bottle	Complete 24 hr output	С	7 Days	LAB	BJP-24H	BJP-24H	c) For M-protein Quantitation. If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 30 mL aliquot.
									Please see Utilization rules

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Benzodiazepines	a) Blood b) Urine	Red Screw-cap jar	1 mL 5 mL	с с	< 24 Hours < 24 Hours	LAB	BENZ URINE-BENZ	BENZO BENZO-U	<ul> <li>a) Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Qualitative result only. This test is also part of a Drug Toxic Panel (DRUG-TOX). If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection.</li> <li>b) Random specimen. This is a semi-quantitative test. If transported, urine must be sent frozen if not received at DECRH within 48 hours of collection.</li> </ul>
Beta 2 Microglobulins	Blood	GOLD	5 mL	С	10 Days	LAB	B2MIC	B2MICRO	Fasting specimen preferred. Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Refer serum to DECRH at 4°C. Referred - 1 mL serum frozen.
Beta Galactosidase	Blood	Dark Green x 2	6 mL x 2	С	20 Days	LAB	BGSE	BGSE	Collect specimens Monday - Wednesday AM at DECRH only. Deliver to Chemistry immediately. Referred – Whole Blood
Beta Glucosidase (Glucocerebrosidase)	Blood	Dark Green x 2	6 mL x 2	С	20 Days	LAB	BGLUCO	BETAGLU	Collect specimens Monday - Wednesday AM at DECRH only. Deliver to Chemistry immediately. Referred – Whole Blood
Beta 2 Glycoprotein 1 Antibody	Blood	Gold or Red	5 mL	Н	14 Days	LAB	B2GP1	B2GP1	<ul> <li>Avoid hemolysis. Separate serum within 2 hours of collection. If specimen cannot be transported to DECRH within 24 hours of collection, centrifuge and separate serum as follows:</li> <li>Red or Gold- If transported, Gold tube only requires one spin. Red tube requires two spins to ensure no red cells are left in the serum. <ul> <li>1st spin: Spin specimens in the centrifuge, after 1st spin is complete, remove tubes from centrifuge and transfer 1st spin serum to a separate labeled 12x75 plastic tube.</li> <li>2nd spin: Cap the labelled 12x75 tubes and re-spin serum, after 2nd spin is complete, carefully remove tubes from centrifuge, without disrupting button at bottom of tube.</li> <li>Remove serum, leaving sediment in bottom of tube. Transfer directly to labeled 12x75 plastic tube. <ul> <li>Send 1 aliquot of 0.5 – 1.0 mL at 4°C</li> </ul> </li></ul></li></ul>

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Beta Hydroxybutyrate	Blood	Light Green	1 mL	С	STAT ≤45 Minutes* Routine <24 Hours	LAB	BETAHY	BHB	Deliver to Chemistry immediately. Separate plasma and refrigerate immediately if not performed at site. Testing is performed at DECRH and URVH only. If referred (send STAT to closest performing site) - 1 mL serum at 4°C. <b>*Turn around time impacted by travel at sites other than DECRH and URVH</b>
Beta (β) 2 Transferrin	Fluid	Sterile Container		С	8 Days	LAB	FLUID	FLUID	Indicate the site from which the fluid is collected. The fluid must be collected in a sterile container and must be allowed to flow freely into the container. If direct collection is not possible a cotton swab or gauze may be used. If gauze is used please circle area on gauze where sample was collected. Cotton swab or gauze must be placed in a sterile container, do not add liquid to swab or gauze. The <b>sample must be delivered to Chemistry immediately</b> . If transported, freeze fluid and send frozen. Referred.
Bethesda Inhibitor Assay	Blood	Blue (Sodium Citrate) x 2	2.7 mL Exactly in each tube X 2	Н	Stat 4 hr Routine 48 hr	LAB	BETH	BETH	<ul> <li>Deliver to the lab within 2 hours of collection. If transported, platlet poor plasma (count &lt; 10) must be achieved with the following procedure: <ol> <li>1. 1<sup>st</sup> spin: Spin specimens in the centrifuge, after 1<sup>st</sup> spin is complete, remove blue tubes from centrifuge and transfer 1<sup>st</sup> spin plasma to a separate labeled 12x75 plastic tube.</li> <li>2. 2<sup>nd</sup> spin: Cap the 12x75 tubes and re-spin plasma, after 2<sup>nd</sup> spin is complete, carefully remove tubes from centrifuge, without disrupting platelets at bottom of tube.</li> <li>3. Carefully remove platelet poor plasma, leaving sediment (containing platelets) in bottom of tube. Transfer directly to labeled 12x75 plastic tube for the platelet count. Perform and record plt count on label if applicable.</li> <li>4. Send frozen in 1 aliquot of 2 mL.</li> </ol> </li> </ul>
Bicarbonate (CO <sub>2</sub> Content)	Blood	Light Green	Full	С	STAT ≤45 minutes Routine < 24 Hours	LAB	CO2	CO2	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. The tube must be allowed to draw to complete vacuum.
Bile	Urine								Test no longer available.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Bile	Bile	Screw-cap jar	2 mL	М	72 hours	MIC	FLU	FLU	Deliver immediately to the laboratory.
Bile Acids	Blood	Light Green	5 mL	С	4 Days	LAB	BILEA	ТВА	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Serum is acceptable. 8-hour fast is preferred, but non-fasting acceptable. Please note on requisition/comment if patient is fasting or not.
Bilirubin Direct (Conjugated)	Blood	Light Green	1 mL	С	< 24 Hours	LAB	BILD	DBIL	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Protect from light.
Bilirubin Pigment	Amniotic fluid	Sterile Tubes x 2 -protected from light	10 mL x 2	С	8 Days	LAB	BIL-P	BILP	Chemistry must be informed before collection. Fluid must be protected from light. Deliver to Chemistry immediately. Specimen collection only done at DECRH. Referred - 10 ml, protected from light
Bilirubin Total	a) Blood	Light Green	1 mL	С	STAT ≤45 minutes Routine	LAB	BIL-T	TBIL	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Protect from light. Protect from light.
	b) Fluid	Screw-cap jar	1 mL	С	<24 hours		BIL-F	TBIL-F	
Bilirubin, Neonatal	Blood	Light Green	0.5 mL	С	STAT ≤45 minutes Routine < 24 Hours	LAB	BIL-T	TBIL	Please order Total Bilirubin.
Bismuth	Blood	Royal Blue EDTA	6 mL	С	7 Days	LAB	BISMUTH	BISMUTH	Do not centrifuge. Store and send cold. Referred - 6 mL whole blood referred
BK Virus PCR	Blood	Lavender	4 mL x 2	Μ	14 days	LAB	BKVPCR	BKVPCR	Deliver <b>immediately to the laboratory</b> . EDTA tubes are centrifuged at 1100 rpm for 20 minutes, within 6 hours of collection. Aliquot spun plasma into 3 viral load tubes and freeze at -70 °C. Contact the Microbiology Lab to obtain viral load tubes.
Blastomycosis Serology	Blood	Red or GOLD	5 mL	М	24 days	LAB	BLAST	BLAST	Deliver <b>immediately to the laboratory</b> If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred.
Bleeding Time									Test no longer available.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Blood Gases - Arterial	Blood	Blood Gas collection kit	1 mL	С	< 15 minutes	LAB	BG	BG	Collect blood in a heparinized syringe. Expel all air. Rotate to mix. Remove needle, cap syringe securely, label & place in crushed ice. To retain specimen label integrity, place specimen in a plastic bag prior to placing on ice. Deliver on ice to Chemistry immediately. The specimen must be analyzed within 1 hour of collection. If patient is on oxygen therapy, note this on the sample label.
Blood Gases - Capillary	Blood			С	< 15 minutes	LAB	BG	BG-CAP	Call Chemistry regarding this order.
Blood Gases - Cord, Arterial	Blood	Blood Gas collection kit	1 mL	С	< 15 minutes	LAB	BG-CORDART	BG-CORD	Collected by Labour and Delivery staff. Collect blood in a heparinized syringe. Expel all air. Rotate to mix. Remove needle, cap syringe securely, label & place in crushed ice. To retain specimen label integrity, place specimen in a plastic bag prior to placing on ice. Deliver on ice to Chemistry immediately. The specimen must be analyzed within <b>1 hour</b> of collection.
Blood Gases - Cord, Venous	Blood	Blood Gas collection kit	1 mL	С	< 15 minutes	LAB	BG-CORDVEN	BG-CORD- VENOUS	Collected by Labour and Delivery staff. Collect blood in a heparinized syringe. Expel all air. Rotate to mix. Remove needle, cap syringe securely, label & place in crushed ice. To retain specimen label integrity, place specimen in a plastic bag prior to placing on ice. Deliver on ice to Chemistry immediately. The specimen must be analyzed within <b>1 hour</b> of collection.
Blood Gases - Venous	Blood	Heparinized syringe	1 mL	С	< 15 minutes	LAB	BGVTPN	VBG	Collect 1-3 ml blood in heparinized syringe. Expel all air. Rotate to mix. Cap syringe securely, label & place in crushed ice. Deliver on ice to Chemistry immediately. To retain specimen label integrity, place specimen in a plastic bag prior to placing on ice. The specimen must be analyzed within 1 hour of collection. If patient is on oxygen therapy, note this on the requisition.
Blood Gases - Venous TPN									Test no longer available.
Blood Group (ABO and Rh)	Blood	Pink	6 mL	ТМ	96 hr	BBK	BLDGRP	BX:BLDGRP	Indicate <b>MEDICAL</b> reason for test order. If transported, <b>DO NOT</b> separate plasma from cells and transport within 24 hours at 2-8°C
Blood Group and Antibody Screen (Prenatal)	Blood	Pink	6 mL	ТМ	96 hr	BBK	PRENAT	PN	If transported, DO NOT separate plasma from cells and transport within 24 hours at 2-8°C
Blood/Bone Marrow: TB	Blood / Bone Marrow	TB Blood Culture Bottle	1-5 mL	М	6 weeks	MIC	TBCBLD	TBCBLD	Special bottle available from Microbiology. Deliver <b>immediately</b> . Keep at Room Temperature. Referred.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Blood: Aerobic / Anaerobic	Blood	Anaerobic (Green) + Anaerobic (Purple) Blood Culture Bottles	10 MI per bottle	М	5 days	MIC	BLD	BLDAN	Deliver <b>immediately</b> . Keep at Room Temperature. It is recommended that one set from two different sites be collected at the same time (4 bottles).
Blood: Paediatric	Blood	Paediatric (Yellow) Blood Culture Bottle	3-5 mL	М	5 days	MIC	BCP	BCP	Deliver <b>immediately</b> . Keep at Room Temperature. It is recommended that one set from two different sites be collected at the same time (2 bottles).
Blood: Yeast	Blood	FAN (Green) Blood Culture Bottle	10 mL	М	5 days	MIC	BLD	BLD	Deliver <b>immediately</b> . Keep at Room Temperature. Include " <b>Yeas</b> t" in specimen comment.
Blood: Systemic Fungus	Blood:	Sodium Heparin	6-10 ml	М	5 weeks	MIC	FUNGAL BC	MFBLD	Deliver <b>immediately</b> . Keep at Room Temperature. Approval by Microbiologist required.
BNP (Pro BNP)	Blood	Light Green	1 mL	С	STAT ≤45 Minutes Routine <24 Hours	LAB	NT-PROBNP	PRO BNP	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If transported, serum must be sent frozen if not received at DECRH within 6 days of collection. Please see Utilization rules
<ul> <li>Body Fluid Cell Count</li> <li>Synovial Fluid</li> <li>Peronteneal Fluid</li> <li>Pleural Fluid</li> <li>Bronchial Wash/Aspirate</li> </ul>	Body Fluid	Lavender Sterile screw- top container (For bronchial wash only)		Н	Stat Preliminary report 4 hr Routine 48 hr	LAB	BF	BF	Deliver to the lab immediately. Please indicate origin of fluid.
Body Fluid: C&S	Body Fluid	Sterile Screw-cap jar or tube	2 mL	М	72 hours	MIC	FLU	FLU	Deliver <b>immediately to the laboratory</b> . Although 2 mL of fluid is desirable, any amount of fluid sent will be processed.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Body Fluid: C&S For transport to DECRH	Body Fluid and Body Fluid in Blood Culture Bottle	Sterile Screw-cap jar or tube + Paediatric (Yellow) or Aerobic FAN (Green) Blood Culture Bottle		Σ	Culture – 72 hours Bottle -5 days		FLB + FLU	FLB + FLU	Aseptically transfer 0.5 mL or half the volume of the fluid to a blood culture bottle. HOLD the bottle at Room Temperature until delivered. Refrigerate the remaining portion of the sample and send on cold pack.
Body Fluid: TB	Body Fluid	Sterile Screw-cap jar	2 mL	М	smear 3 days final 8 weeks	MIC	AFB	TBC	Deliver <b>immediately to the laboratory</b> . Store at 2-8°C. Referred.
Body Fluid: Yeast/Fungus	Body Fluid	Sterile tube	2 mL	М	smear 3 days final 4 weeks	MIC	MYC	MYC	Deliver <b>immediately</b> . Same specimen may be used for C&S, yeast and Fungus
Boil	Swab	Routine Swab		М	72 hours	MIC	SKIN	WOUND	Swab <b>only</b> the infected area. Bacteria from the surrounding area prevent accurate interpretation of the results. Indicate source of swab. Specimen stored at room temperature.
Bone	Bone	Sterile Screw-cap jar		М	72 hours	MIC	BONE	BONE	Deliver <b>immediately to the laboratory</b> . If transported store at 2-8°C.
Bone (Bone Bank)	Bone	Bone Transport Medium		М	9 days	MIC	BONE	BONE BANK	Special transport medium available from Microbiology. Deliver immediately.
Bone Marrow Examination	Bone Marrow			Н	Stat Preliminary 24 hr Routine 7–10 days	LAB	ВМ	BM	An appointment must be booked with the Haematology laboratory. Collect CBC, Differential and Reticulocytes on the day of the scheduled aspiration. Notify Haematology technologist when the physician is ready to perform the aspiration. DO NOT collect marrow in heparin. If transported, DO NOT fix smears. Include peripheral smear with marrow specimen. All bone marrow requests MUST be accompanied by patient's history.
Bone Marrow for Chromosome Studies/ Karyotyping	Bone Marrow	Dark Green (Sodium Heparin)	1 mL minimum	CG	86 Days			CG	Please call Haematology in advance to arrange testing. Draw specimen on Monday to Wednesday, mornings only. Specimen must be kept at Room Temperature. A properly completed requisition MUST arrive with, or in advance of, the specimen. Referred.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Bronchial Wash / Aspirate	Bronch Wash/ Aspirate	Sterile Screw-cap jar		М	72 hours	MIC	BRON	BRON	Deliver <b>immediately to the laboratory</b> . If transported store at 2-8°C.
BUN (Urea)	a) Blood b) Urine c) Urine	Light Green Large plastic bottle Screw-cap jar	1 mL Complete 24 hour output 2 mL	C C C	STAT ≤45 minutes Routine <24 Hours	LAB	BUN UREAEX	BUN UNE UREA-UR	<ul> <li>a) Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C.</li> <li>b) Measured as urea nitrogen excretion. If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot.</li> <li>c) Random specimen</li> <li>Please see <u>Utilization</u> rules</li> </ul>
Burn	Swab	Routine Swab		Μ	72 hours	MIC	BURN	WOUND	Swab <b>only</b> the infected area. Bacteria from the surrounding area prevent accurate interpretation of the results. Indicate source of swab. Specimen stored at room temperature.
C1 Esterase Inhibitor	Blood	GOLD	5 mL	С	15 Days	LAB	C1EST	C1EST	Deliver to Chemistry immediately. Separate ASAP. Referred - 1 mL Serum
C1q Binding	Blood	GOLD	5 mL	С	10 Days	LAB	C1Q	C1Q	Deliver to Chemistry immediately. Separate and freeze serum within 1 hour of clotting. Referred - 1 mL Serum frozen
C₃ Complement	Blood	Light Green	1 mL	С	< 24 Hours	LAB	C3	С3	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If transported, plasma must be t received at DECRH within 8 days of collection.
C <sub>4</sub> Complement	Blood	Light Green	1 mL	С	< 24 Hours	LAB	C4	C4	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If transported, plasma must be received at DECRH within 48 hours of collection.
CA 15-3	Blood	GOLD	5 mL	С	24-48 Hours	LAB	CA15-3	CA15-3	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Referred - 1 mL Serum
CA 19-9	Blood	GOLD	5 mL	С	8 Days	LAB	CA19-9	CA 19-9	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Please see <u>Utilization</u> rules Referred - 1 mL Serum

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Ca-125	Blood	Light Green	1 mL	С	<24 Hours	LAB	CA125	CA125	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If transported, serum must be sent frozen if not received at DECRH within 5 days of collection. Please see <u>Utilization</u> rules
	a) Blood	Royal Blue EDTA	6 mL	С	15 Days		CAD	CAD	a) Do not centrifuge. Store and send cold. Referred - 6 mL Whole Blood
Cadmium	b) Urine	Heavy metal free large plastic bottle	Complete 24 hr output	С	15 Days	LAB	CAD-24H	CAD-24H	b) If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot. Remember to measure 24 hr urine using an acid washed cylinder and transfer aliquot to a metal-free polypropylene vial. Referred
Caffeine	Blood	GOLD	5 mL	С	7 Days	LAB	CAF	CAF	Draw trough specimen 0-4 hours prior to next dose. Specimen must be delivered to the lab immediately. Centrifuge specimen and freeze serum ASAP. Referred - 1 mL serum frozen
Calcitonin (Thyrocalcitonin)	Blood	GOLD on ice	5 mL	С	5 Days	LAB	CALCI	CALCI	Specimen must be immediately placed on ice following collection and delivered on ice to lab within 2 hrs; otherwise, centrifuge specimen in refrigerated centrifuge within 2 hr of collection and immediately transfer to aliqupt tube and freeze. 12-hour fast is recommended. Referred - 1 mL serum frozen.
Calcitonin Provocative Test	Blood	GOLD on ice	5 mL for each specimen	С	5 Days	LAB	CALCI	CALCI for each timed specimen	Timed specimen must be delivered on ice to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection and freeze. 12- hour fast is recommended. Referred - 1 mL serum frozen. See Chemistry Section in this manual for additional information.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
	a) Blood	Light Green	1 mL	С	STAT ≤45 Minutes		CA	CA	a) Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C Collect sample within 1 minute after applying tourniquet. Draw without stasis. Patient should do no forearm exercise (fist clinching) during blood collection. If drawing more than one tube take calcium aliquot from first tube.
Calcium	b) Urine	Large plastic bottle	Complete 24 hr output	С	Routine <24 Hours	LAB	CA-24H	CA-24H	b) If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot.
	c) Urine	Screw-cap jar	2 mL	С			CA-R	CA-R	c) Random specimen
Calcium/Creatinine Ratio	Urine	Screw-cap jar	2 mL	С	< 24 Hours	LAB	CACR	CA/CR-U	Random specimen
	a) Gall stone	Screw-cap jar	Total stone		4 Days		CALC-G	CALC-G	Indicate origin. Referred
Calculus Analysis (Stone Analysis)	stone c) Salivary	Screw-cap jar	stone Total	С	4 Days 4 Days	LAB	STONE-SAL	STONE-SAL	Indicate origin.
	d) Stone of other source	Screw-cap jar	Total stone		4 Days		STONE-O	STONE-O	Indicate origin.
Calprotectin	Feces	Screw cap jar	Pea- sized portion	С	15 Days		CALPRO-FE	CALPRO-FE	Suggest first morning bowel movement. Referred. Please see Utilization rules.
Campylobacter	Stool	Enteric Transport Medium		М	72 hours	MIC	STOOL	STOOL	Collect only one specimen. If it is negative and the symptoms continue, two more may be collected on separate days. Formed stool should be the size of a quarter. Liquid stool should be equal to the amount of the transport medium in the jar. <b>Routine culture includes Salmonella, Shigella, Yersinia, Campylobacter and E. coli</b> . If patient has eaten seafood, also order Vibrio Culture (VIB). See Form <u>HHN-0448</u> for patient collection instructions Specimen stored at room temperature.
Candida auris Screen (CAURIS)	Swab	Routine Swab		М	9 days	MIC	CAURIS	CAURIS	Indicate site from which specimen was collected. Specimen stored at room temperature. Referred.

Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use Laboratory User Manual Version 40.0 Page 131 of 242 Effective Date: January 24, 2022

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Captopril Stimulation Test	Blood			С	7 Days				See Chemistry Section in this manual for additional information.
Carbamazepine (Tegretol)	Blood	Red	1 mL	С	<24 Hours	LAB	CARB	CARB	Specimen must be delivered to the lab within 2 hours; otherwise, centrifuge specimen and remove serum within 2 hours of collection, store at 4°C. Draw trough immediately prior to next dose. If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection. See Chemistry Section in this manual for additional information.
Carbon Monoxide (Carboxyhemoglobin)	Blood	Dark Green	Full	С	< 15 Minutes	LAB	CO BG	CO BG	Tube must be full. Invert tube several times to mix. Do not open tube. <b>DO NOT</b> separate cells from plasma. Blood Gas specimen is acceptable.
Carcinoembryonic Antigen (CEA)	Blood	Light Green	1 mL	С	< 24 Hours	LAB	CEA	CEA	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If transported, plasma must be sent frozen if not received at DECRH within 7 days of collection. Please see <u>Utilization</u> rules
	a) Blood	GOLD	5 mL	С	20 Days		CARN	CARN	a) Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Referred - 1 mL serum frozen.
Carnitine	b) Urine	Screw-cap jar	10 mL	с	20 Days	LAB	CARNS	CARNS	b) Random specimen. Referred - 10 mL Urine aliquot frozen
Carotene	Blood	Red	6 mL	С	12 Days	LAB	CARO	CARO	Patient should fast 12 hours and abatain from alcohol for 24 hours prior to collection. <b>Protect from light.</b> Specimen must be labeled inside and outside the light-protecting wrap. Specimen must be delivered to lab within 2 hours; otherwise centrifuge within 2 hours of collection and freeze (protect aliquot from light). Referred - 1 mL serum -frozen
Cat Scratch Fever (Bartonella Serology)	Blood	Red or GOLD	5 mL	М	24 days	LAB	BART	BART	If transported, separate serum from clot and send serum 2-8°C if sending same day or Freeze at -70°C. Referred.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Catecholamines (Epinephrine, Norepinephrine and Dopamine)	a) Blood b) Urine	Lavender x 2 (pre-chilled) Large plastic bottle with HCI	4 mL x 2 Complete 24 hour output	C	15 Days 15 Days	LAB	CATECH CAT-24H	CATECH CAT-24H	<ul> <li>a) Patient must be supine for at least 30 minutes prior to and during collection. Patient must refrain from eating, using tobacco and drinking caffeinated beverages for at least 4 hours prior to collection. Catechol drugs may interfere, including alpha methyldopa, alpha-methyl-para-tyrosine, isoproteronal, dobutamine and carbidopa. Collect in pre-chilled tube, place on ice and deliver to laboratory immediately. If transported, separate plasma within 60 minutes using a cold centrifuge and freeze. Referred - 2 mL Plasma frozen.</li> <li>b) Refer to <u>Diet/Drug Restriction form HHN-0840</u> for patient restrictions. Collect urine in a container with 25 mL of 6N HCl. The final pH must be maintained from 2-4. If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 25 mL aliquot. Referred – 25 mL aliquot.</li> </ul>
CD4									Please refer to ICP
CD55 + CD59 for Paroxysmal Nocturnal Hemoglobinunia									Please refer to PNH (Paroxysmal Nocturnal Hemoglobinuria)
CEA (Carcinoembryonic Antigen)	Blood	Light Green	1 mL	С	< 24 Hours	LAB	CEA	CEA	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If transported, plasma must be sent frozen if not received at DECRH within 7 days of collection. Please see <u>Utilization</u> rules

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Celiac Profile Includes: - Plasma IgA - Tissue Transglutaminase (TTG)	Blood	1 GOLD or Red 1 Light Green	5 mL	ΗC	21 days	LAB	CELIAC	CELIAC	<ul> <li>Avoid hemolysis. Separate serum/plasma within 2 hours of collection.</li> <li>Red or Gold- labeled for TTG If transported, Gold tube only requires one spin. Red tube requires two spins to ensure no red cells are left in the serum.</li> <li>1st spin: Spin specimens in the centrifuge, after 1st spin is complete, remove tubes from centrifuge and transfer 1st spin serum to a separate labeled 12x75 plastic tube.</li> <li>2nd spin: Cap the labelled 12x75 tubes and re-spin serum, after 2nd spin is complete, carefully remove tubes from centrifuge, without disrupting button at bottom of tube.</li> <li>Remove serum, leaving sediment in bottom of tube. Transfer directly to labeled 12x75 plastic tube.</li> <li>Send 1 aliquot of 0.5 – 1.0 mL at 4°C for TTGA.</li> <li>Light Green-labeled for IgA Separate plasma and store/ship at 4°C.</li> </ul>
Cellcept (Mycophenylic Acid)	Blood	Lavender	4 mL	С	12 Days	LAB	МҮСОР	МҮСОР	Specimen must be delivered to the lab within 2 hours; otherwise, plasma must be separated from the cells within 2 hours of collection and stored at 4°C. Referred – 1 mL Plasma frozen
Celontin (Methsuximide)									Test no longer routinely available
Ceruloplasmin	Blood	GOLD	5 mL	С	24-48 Hours	LAB	CERU	CERU	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Referred - 1 mL Serum
Cervix	Swab	Routine Swab		М	96 hours	MIC	СХ	сх	For Chlamydia and Gonorrhoeae PCR, see Chlamydia Trachomatis/Gonorrhoeae: Cervix/ Urethra. Specimen stored at room temperature.
CH50, Complement	Blood	GOLD	5 mL	С	10 Days	LAB	CH50	CH50	Deliver to Chemistry immediately. If transported, allow blood to clot at 22-37°C for 30 -60 min. Separate and freeze ASAP. Referred - 2 mL Serum frozen
Chicken Pox (Varicella Zoster) (Immune Status)	Blood	Red or GOLD	5 mL	М	1 week	LAB	VZ	VZG	Deliver <b>immediately to the laboratory</b> . If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C.
Chicken Pox (Varicella Zoster) (Recent Infection)	Blood	Red or GOLD	5 mL	М	1 week	LAB	VZM	VZM	Deliver <b>immediately to the laboratory</b> . If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Chlamydophila pneumoniae PCR	BAL/NPA/ Sputum / CSF	Sterile Screw-cap tube		М	2 weeks	MIC	СР	MYCOSPU	.Testing combined with <i>Mycoplasma pneumoniae, Chlamydia pneumoniae</i> and <i>Chlamydia psittaci.</i> Deliver <b>immediately to the laboratory</b> . If transported, store at -70°C. Referred.
Chlamydia Trachomatis / Gonorrhoeae: Cervix / VAG	Cervical Swab Vaginal swab	Cobas PCR Female Swab Sample Packet		Μ	72 hours	LAB	CHLCGEC CHLGCVAG	CHLCGEC CHLGCVAG	Preferred specimen for females. Method is validated for Cervical and Vaginal Specimens. Specimens are stored at room temperature or 2-8 °C. Swabs are to be delivered to the Lab within 2 weeks of collection. Please see <u>Utilization</u> rules
Chlamydia trachomatis / Gonorrhoeae: Urine	Urine	Sterile Screw-cap jar	10 mL	Μ	72 hours	LAB	CHLGCUR	CHLGCUR	To be done on all patients due to shortage of swabs realated to COVID See Form <u>HHN-0822</u> for patient collection instructions. Maximum transportation time from specimen collection: Refrigerated for 1 day. Please see <u>Utilization</u> rules
Chlamydia trachomatis & Gonorrhoeae: Eye	Eye Swab	Chlamydia PCR Kit		М	72 hours	LAB	CHLGCEYE	CHLGCEYE	PCR testing has been found to be reliable. Specimens are stored at room temperature or 2-8 °C. Swabs are to be delivered to the Lab within 2 weeks of collection.
Chlamydia trachomatis Eye (use PCR testing initially see above)	Eye Smear	Chlamydia DFA Slide Kit		М	72 hours	LAB	CHLSMR	CHLSMR	Test discontinued June 1/17. See Chlamydia trachomatis & Gonorrhoeae: Eye
Chlamydia trachomatis/ Neisseria gonorrheae PCR: Rectal	Rectal Swab	Chlamydia PCR Kit or Chlamydia DFA Slide Kit		Μ	72 hours	LAB	CHLGCR	CHLGCR	Specimens are stored at room temperature or 2-8 °C. Swabs are to be delivered to the Lab within 2 weeks of collection.
Chlamydia trachomatis Neisseria gonorrheae PCR: Throat	Throat Swab	Chlamydia PCR Kit or Chlamydia DFA Slide Kit		М	72 hours	LAB	CHLGCT	CHLGCT	Specimens are stored at room temperature or 2-8 °C. Swabs are to be delivered to the Lab within 2 weeks of collection.
Chlordiazepoxide (Librium)	Blood	Red	6 mL	С	12 Days	LAB	LIB	CDZ	Collect trough specimen prior to next dose. Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store and send frozen. Referred - 2 mL serum frozen

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
	a) Blood	Light Green	1 mL	С			CL	CL	a) Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Part of an electrolyte (LYTE or ISE) profile.
Chlorida	b) Sweat			С	STAT ≤45 Minutes		SWEAT	CL-SWEAT	b) The DECRH Chemistry staff collects all sweat specimens. In-patient requests are performed Monday to Friday until 1400 hours. Out-patient appointments should be made for 0900 - 1100 hours Tuesday or Friday.
Chionae	c) Urine	Large plastic bottle	Complete 24 hr output	С	Routine <24 Hours	LAD	CL-24	CL-24H	c) If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot. Part of a 24 hour urine electrolyte (LYTE-24H) profile. If
	d) Urine	Screw-cap jar	5 mL	С			CL-R	CL-R	output per day is not required, a random specimen is acceptable. d) Random specimen. Part of a random urine electrolyte (LYTE-U) profile.
Chlorpromazine (Largactil)	Blood	Red	6 mL	С	13 Days	LAB	CPZ	CPZ	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Draw trough prior to next dose. Referred -1.5 mL Serum
Cholesterol	Blood	Light Green	1 mL	С	< 24 Hours	LAB	CHOL	CHOL	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Patient need not fast if test is ordered without triglycerides or other lipids. This test should not be done within 3 months of myocardial infarction, surgery or similar trauma.
Cholinesterase - ERC (Acetylcholinesterase - ERC)	Blood	Dark Green	6 mL	С	8 Days	LAB	ACETYLERC	ACETYLCHOL- ERC	Draw blood on Monday or Tuesday AM only. Do not centrifuge. Specimen must be sent to referral lab the same day as collected. Referred - 5 mL Whole Blood
Cholinesterase (Pseudocholinesterase)	Blood	GOLD	1 mL	С	7 Days	LAB	PSEUDO	PSEUDO	Specimen must be delivered to lab within 2 hours; otherwise, centrifuge specimen within 2 hours of collection, store at 4°C. Collect blood at least 24 hours following surgery involving the administration of succinylcholine. Referred - 2 mL Serum
Cholinesterase Phenotyping (Pseudocholinesterase Phenotyping)	Blood	GOLD	5 mL	С	15 Days	LAB	PSEUDO PHEN	PSEUDOPHEN	Specimen must be delivered to lab within 2 hours; otherwise, centrifuge specimen within 2 hours of collection, store at 4°C. Collect blood at least 24 hours following surgery involving the administration of succinylcholine. Referred - 2 mL Serum frozen

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Chorionic Villus Sampling	Amniotic Fluid	CVS Transport Media available from Chemistry		CG	14 Days			CVS	Please call Chemistry in advance to arrange testing. Specimen transport media available from Chemistry. Draw specimens on Monday to Wednesday, mornings only. Specimens must be kept at Room Temperature. A properly completed requisition MUST arrive with, or in advance of, the specimen. Requisition available from Chemistry. Referred.
	a) Blood	Royal Blue EDTA	6 mL	С	15 days		CHROMIUM	CHROMIUM	a) Do not centrifuge. Store and send cold. Referred - 6 mL Whole Blood
Chromium	b) Urine	Heavy metal free large plastic bottle	Complet e 24 hour output	С	15 Days	LAB	CHROM-24H	CHROM-24H	b) If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot. Remember to measure 24 hour urine using an acid washed cylinder and transfer aliquot to a metal-free polypropylene vial. Avoid mineral suppliments for 5 days prior to collection. Referred
Chromogranin A	Blood	Red	4 mL	С	5 Days	LAB	CHRA	CHRA	Patient must abstain from proton pump inhibitor medication for two weeks prior to collection. Specimen must be delivered to lab within 2 hours; otherwise, serum must be separated from the cells within 2 hours of collection and stored at 4°C. Please note: aliquot must be frozen if not delivered to DECRH within 24 hours of collection. Referred –0.5 mL aliquot serum – Frozen.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
	a) Blood	Dark Green (Sodium Heparin)	6 mL or full pediatric tube	CG	86 Days		CHROMANALS	CHRBLD	a) Draw blood Monday to Wednesday, mornings preferable. A properly completed requisition MUST arrive with, or in advance of, the specimen. Requisition available from Chemistry. Send to Chemistry as soon as possible, specimen must arrive at referral site within 72h of collection. Store and ship at room temperature. Referred - Whole blood.
Chromosome Analysis	b) Bone Marrow	Dark Green (Sodium Heparin)	1 mL minimum	CG				CG	<ul> <li>b) Please call Haematology in advance to arrange testing. Draw specimen on Monday to Wednesday, mornings only. Specimen must be kept at Room Temperature.</li> <li>A properly completed requisition MUST arrive with, or in advance of, the specimen. Referred.</li> </ul>
(Karyotyping)	c)Amniotic Fluid	Sterile Screw-cap tube x 2	10 mL x 2	CG		LAB		AMNIO	c) Draw specimen on Monday to Wednesday, mornings only. Specimens must be kept at Room Temperature. A properly completed requisition MUST arrive with, or in advance of, the specimen. Referred
	d) Tissue	Sterile 100 mL Screw- cap		CG					d) Please call the Anatomical Pathology Department in advance to arrange testing. Collect specimen on Monday to Wednesday, mornings only. Specimens must be kept at Room Temperature. A properly completed requisition MUST arrive with, or in advance of, the specimen. Referred.
Chylomicrons (Standing serum for appearance)	Blood	Light Green	1 mL	С	48 hours	LAB	CHYLO	CHYLO	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C.
Circulating Anticoagulants									No longer orderable. Please order mixing studies.
Citrate	Urine	Large plastic bottle	Complete 24 hr output	С	15 Days	LAB	CIT-24H	CIT-24H	24 hour collection over 20 mL of 6N HCl <b>or</b> acidify within 24h of collection. Final pH must be between 1 and 3. If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot.
CK (Creatine Kinase)	Blood	Light Green	1 mL	С	< 24 Hours	LAB	СК	СК	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Clobazam (Frisium)	Blood	Red	6 mL	С	15 Days	LAB	CLO	CLO	Specimen must be delivered to the lab within 2 hours; otherwise, centrifuge specimen and remove serum within 2 hours of collection, store at 4°C. Draw trough immediately prior to next dose. If transported, serum must be sent frozen if not received at DECRH within 24 hours of collection. Referred -1 mL Serum frozen
Clomipramine (Anafranil)	Blood	Red	6 mL	С	12 Days	LAB	СМР	CMP	Draw 1 hour prior to next dose or at least 12 hours after last dose. Deliver to the lab immediately. Separate serum from clot ASAP. Referred - 3 mL Serum
Clonazepam (Rivotril)	Blood	Red x 2	6 mL	С	12 Days	LAB	CLON	CLON	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Draw trough prior to next dose. DO NOT confuse this drug with Clobazam. Referred – 3 mL Serum frozen
Clostridium difficile Cytotoxin	Stool	Sterile Screw-cap jar		М	24 hours	MIC	CDIF	CDT	Only liquid or unformed stool specimens are suitable. See Form <u>HHN-0448</u> for patient collection instructions Specimen should be delivered within 2 hours or stored at 4°C.Collect only one specimen per day. Please see <u>Utilization</u> rules
Clozapine (Clozaril)	Blood	Lavender	4 mL	С	12 days	LAB	CLOZAPINE	CLOZ	Specimen must be delivered to the lab within 2 hours; otherwise, plasma must be separated from the cells within 2 hours of collection and stored at 4°C. Referred - 1 mL Plasma frozen
CMV (Cytomegalovirus)	SEE Cytomeg	alovirus							
CO <sub>2</sub> Content (Bicarbonate)	Blood	Light Green	Full	С	< 24 Hours	LAB	CO2	CO2	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. The tube must be allowed to draw to complete vacuum.
Cobalt	Blood	Royal Blue EDTA	6 mL	С	15 Days	LAB	СВ	СВ	Do not centrifuge. Store and send cold. Referred - 6 mL Whole Blood
Cocaine	Urine	Screw-cap jar	5 mL	С	< 24 Hours	LAB	URINE-COCA	COCA-U	Random specimen. This is a semi-quantitative test. If transported, urine must be sent frozen if not received at DECRH within 48 hours of collection.
Coccidiomycosis Antibody	Blood	Red or GOLD	5 mL	М	25 days	LAB	SEROL	SEROL	Add comment: Coccidiomycosis. Deliver to the lab immediately. If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred.
Codeine	Urine	Screw-cap jar	5 mL	С	< 24 Hours	LAB	URINE-OPIA	OPIATE-U	Random specimen. This is a semi-quantitative test. If transported, urine must be sent frozen if not received at DECRH within 48 hours of collection.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Cold Agglutinins	Blood	Pink	6 mL	ΤM	96 hr	LAB	COLD	COLD	If delivered within 24 hours, DO NOT separate. Upon receipt in lab, incubate at 37°C for 15 minutes with repeated mixing, separate, and send both plasma and cells.
Complement, C3	Blood	Light Green	1 mL	С	< 24 Hours	LAB	C3	C3	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If transported, plasma must be t received at DECRH within 8 days of collection.
Complement, C4	Blood	Light Green	1 mL	С	< 24 Hours	LAB	C4	C4	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If transported, plasma must be received at DECRH within 48 hours of collection.
Complement, CH50	Blood	GOLD	5 mL	С	15 Days	LAB	CH50	CH50	Deliver to Chemistry immediately. If transported, allow blood to clot at 22-37°C for 30 -60 min. Separate and freeze ASAP. Referred - 2 mL Serum frozen
Complete Blood Count (CBC) Includes: - Leukocyte Count (LKC) - Erythrocyte Count (ERC) - Hemoglobin (HGB) - Hematocrit (HCT) - ERC Indices (MCV, MCH, MCHC) - ERC Distribution Width (EDW) - Platelet Count - Mean Platelet Volume (MPV) - Differential	Blood	Lavender	4 mL	Н	Stat 0.5 hr Routine 24 hr Electronic Differential Stat 0.5 hr Routine 24 hr Manual Differential Stat Preliminary Report 4 hr Routine 24 hr	LAB	CBC	CBC	<b>Mix by inverting gently 8-10 times.</b> Deliver to the lab within 4 hours of collection. If transported, the specimen must be received at DECRH the same day as collected.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Complete Blood Count ACD (CBCACD) Includes: - Leukocyte Count (LKC) - Erythrocyte Count (ERC) - Hemoglobin (HGB) - Hematocrit (HCT) - ERC Indices (MCV, MCH, MCHC) - ERC Distribution Width (EDW) - Platelet Count - Mean Platelet Volume (MPV) - Differential	Blood	Light Yellow	6 mL	Н	Stat 0.5 hr Routine 24 hr Electronic Differential Stat 0.5 hr Routine 24 hr Manual Differential Stat Preliminary Report 4 hr Routine 24 hr	LAB	CBCACD	CBCACD	<b>Mix by inverting gently 8-10 times.</b> Deliver to the lab within 4 hours of collection. If transported, the specimen must be received at DECRH the same day as collected. (Ordered only when EDTA specimen results in platelet clumps)
Compound S (11 Deoxycortisol)	Blood	GOLD	5 mL	С	12 Days	LAB	DEOXYC	DEOXYC	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Referred - 1 mL Serum
Copeptin proAVP	Blood	Lavender	4 mL	С	5 Days	LAB	CPAVP	CPAVP	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, remove plasma, store at 4°C. Referred – 1 mL plasma frozen
Copper	a) Blood b) Urine c) Tissue	Royal Blue EDTA Heavy metal free large plastic bottle Sterile, orange-top specimen container	6 mL Complete 24 hour output	C C C	15 Days 15 Days 15 Days	LAB	CU CU-24H CU-T	CU COPPER-24H CU-T	<ul> <li>a) ) Do not centrifuge. Store and send cold. Referred - 6 mL whole blood referred.</li> <li>b) Refer to <u>Diet/Drug Restriction form HHN-0840</u> for patient restrictions. If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot. Reember to measure 24 hour urine using an acid washed cylinder and transfer aliquot to a metal-free polypropylene vial. Referred</li> <li>c) 0.5 mm x 5 mm from a needle biopsy; a larger section is needed from a wedge biopsy. Place in sterile, orange-top (metal-free) specimen container. Note on the requisition the type of tissue, suspected diagnosis and clinical information. Referred</li> </ul>

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Coproporphyrins (included with quantitative	a) Blood b) Urine	Lavender x2 Large plastic bottle with Anhydrous	4 mL x 2 Complete 24 hour output	C C	16 Days 13 Days	LAB	PP-QUAN-B PP-24H	PP-QUAN-B PP-24H	<ul> <li>a) Protect from light. Do not centrifuge. Hematocrit result must be provided. Referred - 7 mL Whole Blood</li> <li>b) Protect from light. Collect over 5g of Anhydrous Sodium Carbonate. Referred - 100 mL Urine aliquot frozen</li> </ul>
тырнушы	c) Feces	Sodium Carbonate Screw-cap jar	50 g	С	13 Days		PP-QUAN-FE	PP-QUAN-FE	c) Random specimen. Protect from light. Referred - 50 g Feces frozen
Cord Blood Workup	Blood	Red	7 mL	ΤM	Stat 1 hr Asap 2 hr Routine 24 hr		CORD	CORD	Workup includes Blood Group and Direct Antiglobulin Test (if required).
Cordarone (Amiodarone)	Blood	Red	6 mL	С	12 Days	LAB	AMIO	AMIO	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Draw trough prior to next dose. Referred – 1.5 mL Serum
Cornea	Swab	Routine Swab		М	72 hours	MIC	EYE	EYE	Specimen stored at room temperature.

	c	<u>ب</u>		ıt	р	_	0	0	Collection/ Referral Instructions
Test	Specimer	Containe	Amount	Departme	Turnarour Time	OE Category	OE Mnemoni	Lab Mnemonia	Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
	a) Blood	Light Green	1 mL	С	< 24 Hours		CORT	CORT	a) Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. This request includes AM and PM Cortisols drawn, preferably, at approximately 0800 hours and 1600 hours on the same day. It is acceptable, however, to collect AM levels up to 1000 hours and PM levels as close to 1600 while remaining inside of regular shift schedules. If transported, plasma must be sent frozen if not received at DECRH within 48 hours of collection. See Chemistry Section in this manual for additional information.
	b) Blood	Light green	1 mL	С	< 24 Hours		CORT-R	CORT-R	<ul> <li>b) Random collection. If transported, plasma must be sent frozen if not received at DECRH within 48 hours of collection.</li> </ul>
Cortisol	c) Urine	Large plastic bottle	Complete 24 hr output	С	15 Days	LAB	CORT-U24H	CORT-24H	c) See Chemistry Section in this manual for additional information. If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 5 mL aliquot. Referred – 5 mL aliquot.
	d) Saliva	Salivette®		С	15 Days		CORT-SAL	CORT-SAL	d) Special Salivette® collection container and instructions must be obtained from lab. Avoid collecting if patient has bleeding gums. Patient must wait at least 30 minutes after consuming any food, liquids or medication by mouth before collecting sample. Specimens not delivered to DECRH same day must be kept refrigerated. Referred – complete collection frozen
COVID-19 PCR	<ul> <li>(a) NPS</li> <li>(b) Throat/ nose</li> <li>(c) BAL TRACHASP</li> </ul>	(a/b) UTM (Viral Transport Media) (c) dry sterile container		М	24-48 hours	MIC	CORVIR	CORVIR	Specimens are stable @ 2-8°C for 48 hours. Ship on an ice pack If unable to ship with 48 hours, freeze @ -80°C and ship on dry ice
COVID-19 Rapid screen	NPS	UTM (Viral Transport Media)		Μ	2 hours			CORVIRSCR	This test can only be order by the laboratory. <b>Patient must meet current criteria</b> or be approved by the Microbiologist. Microbiology must be called to request testing.
COVID-19 Serology	Blood	GOLD	2 ml	М	14 days	LAB	COVIDSER	COVIDSER	Must be approved by the George Dumont Hospital's Microbiologist at 506- 862-4140.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Coxsackie Virus Serology				Μ					No longer available. For Respiratory specimens see Enterovirus-Respiratory For stool samples see Stool: Coxsackie/Enterovirus
C-Peptide	Blood	Red/SST	6 mL	С	12 Days	LAB	CPEP	CPEP	Overnight fast (at least 10 hrs) is recommended but not required, especially if part of a glucagon challenge test. Store original sample upright at 4°C and deliver to Chemistry within 48 hours. If sample not delivered within 48 hours centirifuge, aliquot, and freeze serum. Referred - 1 mL Serum frozen.
Creatine	Blood	Red only	5 mL	С	24 Days	LAB		CRT	<b>DO NOT</b> confuse this test with Creatinine. Separate serum from clot and freeze if not delivered to DECRH within 24 hours. Referred - 2 mL Serum frozen
Creatine Kinase (CK)	Blood	Light Green	1 mL	С	< 24 Hours	LAB	СК	СК	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C.
Creatine Kinase Isoenzymes (CK-MB)									Test no longer available.
	a) Blood	Light green	1 mL	С			CREAT	CREAT	a) Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C.
Creatinine	b) Urine	Large plastic bottle	Complete 24 hr output	С	STAT ≤45 minutes	LAB	CREATU-24H	CREAT-24H	b) If If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot.
	c) Urine	Screw-cap jar	2 mL	С	Routine <24 Hours		CREATR	CREAT-R	
	d) Body Fluid	Dark Green	2 mL	С			CREAT-FLUD	CREAT-F	c) Random specimen
									d) Indicate origin of fluid.
Creatinine Clearance	Blood and Urine	Light Green and Large plastic bottle	1 mL and Timed output or 24 hr output	С	< 24 Hours	LAB	CREATCL	CRCL	A blood sample is collected at a convenient time immediately before, during or immediately following the 24 hour urine collection. Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. For DECRH out-patients, the blood collection should be booked through CIU. The patient's height and weight are noted on the requisition. At least 24 hours must have elapsed after injection of IVP before urine collection is started. If transported, send Plasma (for Creatinine) and if sent from Health Centre or other outside collection site, please refer entire urine collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot.

Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use Laboratory User Manual Version 40.0 Page 144 of 242 Effective Date: January 24, 2022
Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Creutzfeldt-Jakob Disease 14 – 3 - 3	Spinal fluid	Sterile Screw-cap tube	2 mL	М	14 days	MIC	CSFPROTEIN	CSF14-3-3	<b>ONLY collected at DECRH.</b> Refer to <u>Creutzfeldt</u> -Jacob special instructions before ordering and collecting specimens. Microbiolgoy lab <b>must</b> be contacted before testing is ordered. Referred
Creutzfeldt-Jakob Disease Gene Sequence	Blood	Lavender x 5	3 mL x 5	М	32 days	LAB	CJDGENE	CJDGENE	Microbiolgoy lab <b>must</b> be contacted before testing is ordered. Draw blood on Monday to Wednesday only. Deliver to Microbiology immediately. Referred.
Crossmatch, Routine (Red Blood Cells)	Blood	Pink x 2	6 mL x 2	ТМ	Stat 1 hr Asap 2 hr Routine 5 hr		GRPBLD	RCC	*PROPER PATIENT IDENTIFICATION IS CRITICAL * Specimens collected, and requisition must be signed immediately after collection while in the vicinity of the patient (i.e. bedside) If transported, <b>DO NOT</b> separate plasma from cells and transport within 24 hours at 2-8°C. Indicate on the order form/requisition product required (i.e. Red Blood Cells) and date and time required. <b>The individual who collects the specimen MUST:</b> sign the requisition with <b>full signature</b> and initials with date and time of collection. Specimen label must have date and time with collector's initials.
CRP (C-Reactive Protein)	Blood	Light Green	1 mL	С	< 24 Hours	LAB	CRP	CRP	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C.
Cryofibrinogen	Blood	Blue x 4 (pre-warmed)	2.7 mL x 4	С	15 Days	LAB	CRYOFIB	CRYOFIB	Place a hot wet towel on the arm over the vein from which the blood is to be drawn. Collect blood in pre-warmed (37°C) tubes, label and place tubes in 37°C water. Deliver to Chemistry immediately. If transported, separate plasma from cells at 37°C and store at 4°C, 4 mL of plasma required. Label the specimen as "Plasma" and transport at 4°C or Room Temperature. A Cryoglobulin specimen MUST be submitted as well. 12-14 hour fast required.
Cryoglobulin	Blood	Red x 4 (pre-warmed)	6 mL x 4	С	7 Days	LAB	CRYO	CRYO	Place a hot wet towel on the arm over the vein from which the blood is to be drawn. Collect blood in pre-warmed (37°C) tubes, label and place tubes in 37°C water. Deliver to Chemistry immediately. Blood must be kept at 37°C for 2 hours to clot before centrifugation. If transported, separate serum from cells at 37°C and store at 4°C. 6 mL serum required. Transport at 4 °C or Room Temperature. 12-14 hour fast required.
Cryptococcal antigen	CSF	Sterile container		м	72 hours	MIC	CRYPTOCSF	CRYPTO CSF	Deliver immediately to laboratory. If transporting, separate serum. Store at 4°C for
	BLOOD	Red x1				LAB	SEROL	SEROL	
Crystal Identification	Fluid	Dark Green	1 mL	С	<24 Hours	LAB	CRYS-F	CRYS-F	Invert tube several times to mix. Indicate origin of fluid.

Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use

Laboratory User Manual Version 40.0

Page 145 of 242

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
CSF				М					See Spinal Fluid
Cyanide	Blood	Gray	4 mL	С	7 Days	LAB	CY	CY	Store and ship specimen at 4°C. If specimen will not arriveat DECRH within 24 hrs, mix and transfer whole blood sample to screw-cap vial and freeze. Referred - whole blood frozen
Cyclic AMP (AMP)									Testing no longer available
Cyclosporin	Blood	Lavender	4 mL	С	4 Days	LAB	CYCLO	CYCLO	Draw blood prior to next dose. Do not centrifuge. If transported, send as whole blood at 4°C. See Chemistry Section in this manual for additional information.
Cyclosporin - 2 Hour	Blood	Lavender	4 mL	С	4 Days	LAB	CYCLO2HR	CYCL2	Draw 2 hours $\pm$ 10 minutes post dose. Do not centrifuge. If transported, send as whole blood at 4°C. See Chemistry Section in this manual for additional information.
Cystinuria Monitoring	Urine	Screw-cap jar	20 mL	С	20 Days	LAB	CYSMON	CYSMON	Indicate if patient is a known cystinuric. Referred - 10 mL Urine aliquot frozen Test is intended for monitoring known cystinuric patients. <b>To diagnose cystinuria</b> <b>please refer to amino acid quantitation (AA-QT)</b>
Cytokeratin Antibodies (Soluble Liver Antigen Antibodies)	Blood	GOLD	5 mL	С	15 Days	LAB	SOLIVERAB	S-LIVER AB	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, store and send at 4°C. Referred - 1 mL Serum frozen
Cytology - Gynecological	Pap Test	Glass slide		CY	Priority 2-3 days Routine 4 weeks		Cannot be ordered through Meditech OE		Collect material using a cervical brush/broom device or plastic spatula from the cervical, endocervical and/or vaginal area of the genital tract. Smear or brush cellular material evenly on a glass slide and <b>fix immediately with Cytospray</b> . Date of last menstrual period (LMP) or menstrual status must be provided in all cases. Label slide (s), in pencil, with patient's full name and healthcare number or other unique number ( <b>Not DOB</b> ). To ensure optimal specimen collection, a Pap test should be performed before other cervical procedures including STI testing and IUD insertion, so as not to remove diagnostic cells required for Pap test. The optimal time to schedule a Pap test is at least 5 days after the end of the menstrual period to avoid excess blood on slide which obscures cells.
Cytology - Gynecological	Endometrial	Glass slide		CY	Priority 2-3 days Routine 4 weeks		Cannot be ordered through Meditech OE		Using an endometrial sampler, i.e. Endopap endometrial sampler, collect sample. Smear on glass slide(s) and <b>fix immediately with Cytospray</b> . Label slide (s), in pencil, with patient's name and healthcare number.

Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use

Laboratory User Manual Version 40.0

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Cytology – HPV DNA	Cervical (females)	ThinPrep Pap Test collection kit: PreservCyt vial, spatula and cytobrush	3.0 ml	CY	2 weeks		Cannot be ordered through Meditech OE		Ordering privileges for this test are through Colposcopy Clinics and OBS/GYN Practitioners. Cervical samples are collected using the ThinPrep Pap test collection kit according to package instructions. Send samples to the DECRH Cytology Lab along with a completed HPV test requisition for packaging and shipping to the referral lab, Saint John Regional Hospital. Testing is performed weekly. Specimen collection kits and test requisitions can be ordered by calling the Cytology department.
Cytology – HPV DNA	Rectal/Anal Swab (Males)	N/A							Test not available.
Cytology - Non- Gynecological	Body cavity fluids & abdominal washings	Pink topped "Cytology Only" container with CytoLyt	Max. vol.90 ml (including 30 ml CytoLyt)	CY	80% within 3- 5 days		Cannot be ordered through Meditech OE		Place the fluid in 30 mL of CytoLyt IMMEDIATELY after collection to prevent settling of diagnostic cellular material. These fluids are not satisfactory when clotted. Containers are available from SPD. Joint, pericardial, peritoneal, and pleural fluids are all collected in this fashion. Please differentiate between peritoneal fluids that are obtained by paracentesis technique and abdominal washes that are taken at the time of surgery.Only one 90 ml Cytology sample container is required for testing. Imperative - clearly indicate the source of the specimen on the request form.
Cytology - Non- Gynecological	Bronchial brushing	Pink topped "Cytology Only" container with CytoLyt		CY	80% within 3- 5 days		Cannot be ordered through Meditech OE		Collect these specimens at the time of the surgical procedure. Break off the brush and drop into a container of CytoLyt.
Cytology - Non- Gynecological	Bronchial washings	Pink topped "Cytology Only" container with CytoLyt		CY	80% within 3- 5 days		Cannot be ordered through Meditech OE		After collecting bronchial washings, add 30 mL of CytoLyt. Deliver immediately.
Cytology - Non- Gynecological	Cyst aspirations	Pink topped "Cytology Only" container with CytoLyt		CY	80% within 3- 5 days		Cannot be ordered through Meditech OE		Collect the specimen in 30 mL of CytoLyt. Containers are available from SPD.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Cytology - Non- Gynecological	Esophageal	Pink topped "Cytology Only" container with CytoLyt		СҮ	80% within 3- 5 days		Cannot be ordered through Meditech OE		The specimen is collected by washing or by brushing. If washings are collected, they must be placed immediately in 30 mL of CytoLyt. Washings should be collected before biopsy. If brushings are collected, break off the brush and drop into a container of CytoLyt.
Cytology - Non- Gynecological	Common bile duct (CBD) brushings	Pink topped "Cytology Only" container with CytoLyt		CY	80% within 3- 5 days		Cannot be ordered through Meditech OE		Collect cellular fluid at time of surgical procedure into a container of CytoLyt preservative. Brush or stent may be sent in Cytology container for processing.
Cytology - Non- Gynecological	Gastric washing	Pink topped "Cytology Only" container with CytoLyt		CY	80% within 3- 5 days		Cannot be ordered through Meditech OE		Specimen must be obtained from clean surface area to ensure the presence of epithelial cells. Place washings immediately into 30 mL of CytoLyt.
Cytology - Non- Gynecological	Fine needle aspirations	Pink topped "Cytology Only" container with CytoLyt		CY	80% within 3- 5 days		Cannot be ordered through Meditech OE		Expel contents of needle barrel and syringe into a container of CytoLyt and deliver immediately to Cytology Lab. Refer to Clinical & Laboratory Standards Institute approved guidelines for detailed FNA collection instructions including patient preparation and positioning, equipment and technique for site-specific sampling: CLSI: GP20 – A2, section 4.
Cytology - Non- Gynecological	Nipple discharge	Glass slide		CY	80% within 3- 5 days		Cannot be ordered through Meditech OE		Collect nipple secretions on glass slides. <b>Fix immediately with Cytospray.</b> If enough secretion is available, make several slides, fixing each one as it is smeared. Even partial drying can cause distortion of these cells. Label slide (s), in pencil, with patient's name and Medicare number.
Cytology - Non- Gynecological	Spinal fluid	Sterile tube	1.0 ml	CY	80% within 3- 5 days		Cannot be ordered through Meditech OE		Deliver Spinal fluid immediately to the laboratory with no fixative added. One mL of specimen is sufficient for cytological analysis. If there is to be a delay in delivery, add an equal amount of CytoLyt to the specimen and refrigerate.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Cytology - Non- Gynecological	Sputum	Pink topped "Cytology Only" container with CytoLyt		CY	80% within 3- 5 days		Cannot be ordered through Meditech OE		To ensure against contamination of cells from the oral cavity, the patient must rinse his or her mouth with clear water and discard before collection. <b>Sputum must be an early morning deep cough specimen collected before the patient has breakfast</b> and expectorated directly into a container with 30 mL of CytoLyt. Only one specimen per day, for 3 days is preferred for most effective sampling. Please collect sputa <b>Monday through Friday only</b> . Specimens must be delivered to the laboratory on the day of collection.
Cytology - Non- Gynecological	Urine – voided, cystoscopic, catheterized, renal pelvic washings	Pink topped "Cytology Only" container with CytoLyt		CY	80% within 3- 5 days		Cannot be ordered through Meditech OE		Collect mid-morning voided urine samples in CytoLyt at approximately 1100 hours. An early morning specimen is not satisfactory for voided specimens. One specimen per day is sufficient, Monday to Friday. Cystoscopic and catheterized samples as well as renal pelvic washings should be collected directly into CytoLyt and sent to the lab.
Cytomegalovirus serology: IgG Avidity	Blood	Red or GOLD	5 mL	М	2 weeks			CMVGAV	Deliver to laboratory immediately. If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred.
Cytomegalovirus (CMV) serology	Blood	Red or GOLD	5 mL	М	1 week	LAB	CMV	CMV	Includes both CMV IgG (immune <b>status) and</b> CMV IgM (Acute or recent infection). If transported, separate serum from clot and send serum 2-8°C if sending within 72 hours or Freeze at -20°C.
Cytomegalovirus (CMV) PCR: Urine	Urine	Sterile Screw-cap jar	15 mL	М	1 week	MIC	CMVC	CMVC	Call Microbiology before collection. Must be delivered to laboratory immediately after voiding. Referred.
Cytomegalovirus-CMV (Viral Load/PCR)	Blood	Lavender x 3	3 mL x 3	М	4 days	LAB	CMVPCR	CMVPCR	Specimen must be delivered to the lab within 6 hours; otherwise specimen must be centrifuged at 1100 g for 20 minutes, separate plasma from cells immediately and store at -70 °C. If transported send plasma frozen on dry ice. Test referred.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Cytoplasmic Antibodies Includes: - Anti-Mitochondrial Ab (AMA) - Anti-Parietal Cell Ab (APCA) - Anti-Smooth Muscle Ab (ASMA)	Blood	GOLD or Red	5 mL	Н	14 days	LAB	CYTOPLASAB	CYTOPLASAB	<ul> <li>Avoid hemolysis. Separate serum within 2 hours of collection. If specimen cannot be transported to DECRH within 24 hours of collection, centrifuge and separate serum as follows:</li> <li>Red or Gold- If transported, Gold tube only requires one spin. Red tube requires two spins to ensure no red cells are left in the serum. <ul> <li>1st spin: Spin specimens in the centrifuge, after 1st spin is complete, remove tubes from centrifuge and transfer 1st spin serum to a separate labeled 12x75 plastic tube.</li> <li>2nd spin: Cap the labelled 12x75 tubes and re-spin serum, after 2nd spin is complete, carefully remove tubes from centrifuge, without disrupting button at bottom of tube.</li> <li>Remove serum, leaving sediment in bottom of tube. Transfer directly to labeled 12x75 plastic tube.</li> <li>Send 1 aliquot of 0.5 – 1.0 mL at 4°C</li> </ul> </li> </ul>
Cytotoxic Antibodies (HLA Antibody Testing) (Transplant Antibodies)	Blood	Red	7 mL	С	5 Days	LAB	TRANSBBK	TR	A Nova Scotia Health Authority Histocompatibility Laboratory requisition must be completed by the ordering site and it must be signed by the phlebotomist. These requisitions are available from the website of the reference laboratory ( <u>www.cdha.nshealth.ca/programsandservices/</u> ). Serum must be separated from the cells within 2 hours of collection and stored at 4°C. Referred.
Date Rape Drugs (Rape Drugs)	Urine	Screw-cap jar	10 mL	С	7 Days			DATE RAPE DRUGS	This profile includes Rohypnol (Flunitrazepam) and GHB (Gamma Hydroxybutyrate). Referred - 10 mL urine aliquot

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
D-Dimer Quantitative	Blood	Blue (Sodium Citrate)	2.7 mL Exactly	Н	Stat 1 hr Routine 24 hr			DDIMQT	<ul> <li>Deliver to the lab immediately. If transported, platlet poor plasma (count &lt; 10) must be achieved with the following procedure:</li> <li>5. 1<sup>st</sup> spin: Spin specimens in the centrifuge, after 1<sup>st</sup> spin is complete, remove blue tubes from centrifuge and transfer 1<sup>st</sup> spin plasma to a separate labeled 12x75 plastic tube.</li> <li>6. 2<sup>nd</sup> spin: Cap the 12x75 tubes and re-spin plasma, after 2<sup>nd</sup> spin is complete, carefully remove tubes from centrifuge, without disrupting platelets at bottom of tube.</li> <li>7. Carefully remove platelet poor plasma, leaving sediment (containing platelets) in bottom of tube. Transfer directly to labeled 12x75 plastic tube for the platelet count. Perform and record plt count on label if applicable.</li> <li>Send frozen in 1 aliquot of 2 mL.</li> </ul>
D-Dimer Screen									Test no longer performed
Decubitus Ulcer	Swab	Routine Swab		М	72 hours	MIC	WOUND	ULC	Requires saline irrigation followed by a deep swab collection. Biopsy collection is preferred over swabs. Specimen stored at room temperature.
Delta Aminolevulinic Acid (DALA)	Urine	Large plastic bottle	Complet e 24 hour output	С	15 Days	LAB	ALA	ALA	Protect specimen from light. Specimen must be labeled inside and outside the light- protecting wrap. If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 20 mL aliquot frozen (protect from light). Referred - 20 mL Urine aliquot frozen.
Demerol (Meperidine)	a) Blood b) Urine	Red Screw-cap jar	6 mL 10 mL	C C	11 Days 11 Days	LAB	MEP-B MEP-U	MEP-B MEP-U	<ul> <li>a) Specimen must be delivered to the lab within 2 hours; otherwise, centrifuge specimen, remove serum within 2 hours of collection and store at 4°C. Referred – 1.5 mL Serum</li> <li>b) Referred - 10 mL Urine aliquot</li> </ul>
Depakene (Valproic Acid) (Epival)	Blood	Red	1 mL	С	< 24 Hours	LAB	VALP	VALP	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Trough levels are generally measured. Draw trough immediately prior to next dose. If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection. See Chemistry Section in this manual for additional information.

Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Desipramine (Pertofrane)	Blood	Red	6 mL	С	10 Days	LAB	DESIP	DESIP	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Collect within 1 hour prior to next dose or at least 12 hours after last dose. Referred – 3 mL serum.
Desyrel (Trazodone)	Blood	Red	6 mL	С	13 Days	LAB	TRAZ	TRAZ	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Collect trough specimen prior to next dose after steady state (2 days or more after commencement of therapy) Referred – 1.5 mL serum.
Dexamethasone Suppression Tests	Blood			С	72 Hours	LAB	DST	DST	See Chemistry Section in this manual for additional information.
DHEA-Sulfate (DHEAS)	Blood	Light Green	1 mL	С	< 24 Hours	LAB	DHEAS	DHEAS	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If transported, plasma must be sent frozen if not received at DECRH within 48 hours of collection. See Chemistry Section in this manual for additional information.
Dialysis Fluid	Fluid	Aerobic and Anaerobic Blood Culture Bottles	20 mL	М	5 days	MIC	DIAL	DIAL	Aseptically transfer 10 mL to each aerobic and anaerobic blood culture bottle. Send remaining fluid and bottles to the laboratory at Room Temperature.
Diazepam (Valium)	Blood	Red	6 mL	С	15 Days	LAB	DIAZ	DIAZ	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Referred -1 mL Serum

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
DIC Screen Includes: - Prothrombin Time (PT/INR) - Activated Partial Thromboplastin Time (APTT) - Fibrinogen (Fib) - D-Dimer Quantitative (DDIMQT)	Blood	Blue (Sodium Citrate)	2.7 mL 1.8 mL	Н	Stat 1 hr Routine 24 hr			DICSC	<ul> <li>Deliver to the lab immediately. If transported, separate plasma immediately then centrifuge plasma a second time. If transported, platelet poor plasma (count &lt; 10) must be achieved with the following procedure: <ul> <li>8. 1<sup>st</sup> spin: Spin specimens in the centrifuge, after 1<sup>st</sup> spin is complete, remove blue tubes from centrifuge and transfer 1<sup>st</sup> spin plasma to a separate labeled 12x75 plastic tube.</li> <li>9. 2<sup>nd</sup> spin: Cap the 12x75 tubes and re-spin plasma, after 2<sup>nd</sup> spin is complete, carefully remove tubes from centrifuge, without disrupting platelets at bottom of tube.</li> </ul> </li> <li>10. Carefully remove platelet poor plasma, leaving sediment (containing platelets) in bottom of tube. Transfer directly to labeled 12x75 plastic tube for the platelet count. Perform and record plt count on label if applicable.</li> </ul> <li>Send frozen in 1 aliquot of 2 mL.</li>
Differential (Manual)									Order CBC
Digoxin	Blood	Red	1 mL	С	< 24 Hours	LAB	DIG	DIG	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Draw immediately prior to AM dose or 6-24 hours after last dose. If transported, serum must be sent frozen if not received at DECRH within 72 hours of collection. See Chemistry Section in this manual for drug interaction information.
Dihydrotestosterone	Blood	GOLD	5 mL	С	15 Days	LAB	DHTEST	DHTEST	Specimen must be delivered to lab within 2 hrs; otherwise, serum must be separated from the cells within 2 hrs of collection. Store and send frozen. Referred – 1 mL Serum frozen
Dilantin (Phenytoin)	Blood	Red	1 mL	С	< 24 Hours	LAB	DIL	PTN	Specimen must be delivered to the lab within 2 hours; otherwise, specimen must be centrifuged and serum removed within 2 hours of collection and stored at 4°C. Draw immediately prior to next dose. If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection. See Chemistry Section in this manual for additional information.
Dilaudid (Hydromorphone)	a) Urine b) Blood	Screw-cap jar Lavender x 2	1 mL 4 mL x 2	С	20 Days 20 Days	LAB	URINE-DILA DILAUDID	DILA-U DILA	a) Random specimen. Referred. b) Deliver to Chemistry immediately. Separate plasma ASAP. Referred - 2 mL plasma

This is a CONTROLLED document. LAB-3-ADM-LUM-00001 Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Dimenhydrinate (Gravol) (Dramamine)									Test no longer routinely available
Diphenhydramine (Benadryl)	Blood	GOLD	5 mL	С	8 Days	LAB	DIPHENHY	DIPHENHY	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Referred - 1 mL Serum
Direct Antiglobulin Test (Direct Coombs)	Blood	Pink	6 mL	ΤM	Stat 1 hr Asap 2 hr Routine 96 hr	DAT	DAT	BBDAT	<b>DO NOT</b> separate plasma from cells. If transported send within 24 hours at 2-8°C Only performed at the DECRH
Disopyramide (Rythmodan) (Norpace)	Blood	Dark Green	6 mL	С	12 Days	LAB	DISO	DISO	Specimen must be delivered to the lab within 2 hours; otherwise, plasma must be separated from the cells within 2 hours of collection and stored at 4°C. Referred - 1 mL Plasma
DNA Analysis, Molecular	Blood	Lavender x 2	4 mL x2	CG	86 Days	LAB	DNABLD	DNABLD	Draw blood on Monday to Thursday, mornings preferable. Friday may be acceptable in special circumstances call DECRH Laboratory prior to Friday collections. A properly completed requisition and a consent form signed by the patient MUST arrive with, or in advance of, the specimen. Requisition available from Chemistry. Store and ship at Room Temperature. Referred - Whole Blood
Donath-Landsteiner Test for Paroxysmal Cold Hemoglobinuria									Test no longer performed
Dopamine (included with Catecholamines)	Bloood	Lavender x 2	4mL x 2	С	15 Days	LAB	CATECH	CATECH	Patient must be supine for at least 30 minutes prior to and during collection. Patient must refrain from eating, using tobacco and drinking caffeinated beverages for at least 4 hours prior to collection. Catechol drugs may interfere, including alpha methyldopa, alpha-methyl-para-tyrosine, isoproteronal, dobutamine and carbidopa. Collect in pre-chilled tube, place on ice and deliver to laboratory immediately. If transported, separate plasma within 60 minutes using a cold centrifuge and freeze. Referred - 2 mL Plasma frozen.
Dopamine 24H	Urine	Large plastic bottle with HCL	Complete 24-hour output	С	15 Days	LAB		DOP-24H	Collect urine in a container with 25 mL of 6N HCL. The final pH must be less than 3.0. Restrict caffeine, nicotine, and alcohol 24 hours prior to collection. Discontinue Methyldopa (Aldomet) at least 5 days prior to collection. Other drugs do not interfere with this assay. If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 20 mL aliquot. Referred – 20 mL aliquot.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Doxepin (Sinequan)	a) Blood b) Urine	Red Screw-cap jar	6 mL 10 mL	C C	10 Days 7 Days	LAB	DOX DRUGSC1	DOX DRUGSC1	<ul> <li>a) Draw trough specimen 1 hour prior to next dose, or at least 12 hours post dose. Deliver to Chemistry immediately. Separate serum from clot ASAP. Referred – 3 mL Serum</li> <li>b) Part of Drug Screen, General (DRUGSC1). Specify screening for Sinequan. Referred - 10 mL Urine</li> </ul>
Dramamine (Dimenhydrinate)(Gravol)									Test no longer routinely available
Drug Screen, General (Referred)	Urine	Screw-cap jar	12 mL	С	7 Days	LAB	DRUGSC1	DRUGSC1	Random urine only. This drug screen detects a variety of drugs, prescription and non-prescription. Relevant history should be noted on the requisition. Referred - 12 mL Urine
Drug Screen, Addiction Clinic	Urine	Screw-cap jar	5 mL	С	< 24 Hours	LAB	URINE-RAP	DRUG-ADD	Screen includes: Creatinine, Amphetamines, Benzodiazopines, Cocaine, Opiates, Oxycodone and THC. Each test may be ordered individually. If transported, urine must be sent frozen if not received at DECRH within 48 hours of collection.
Drug Screen, ER (Street Drugs)	Urine	Screw-cap jar	5 mL	С	< 24 Hours	LAB	URINE-ER	DRUG-ER	Screen includes: Creatinine, Amphetamines, Benzodiazopines, Cocaine, Opiates, Oxycodone, PCP and THC. Each test may be ordered individually. If transported, urine must be sent frozen if not received at DECRH within 48 hours of collection.
Drug Screen, Methadone Clinic	Urine	Screw-cap jar	5 mL	С	< 24 Hours	LAB	URINE-METH	DRUG-METH	Screen includes: Creatinine, Amphetamines, Benzodiazopines, Cocaine, Methadone, Opiates and Oxycodone. Each test may be ordered individually. If transported, urine must be sent frozen if not received at DECRH within 48 hours of collection.
Drug Screen, Psychiatry	Urine	Screw-cap jar	5 mL	С	< 24 Hours	LAB	URINE-PSYC	DRUG-PSYC	Screen includes: Creatinine, Amphetamines, Benzodiazopines, Cocaine, Opiates, Oxycodone, PCP and THC. Each test may be ordered individually. If transported, urine must be sent frozen if not received at DECRH within 48 hours of collection.
Drug Screen, Abuse (available at all sites except DECRH)	Urine	Screw-cap jar	5 mL	С	< 24 Hours	LAB	DRUGSC2	DRUGSC2	Not available at DECRH. Available only at OPH, URV, TVH and HDP facilities. Screen includes: Amphetamines, Barbiturates Benzodiazepines, Cocaine, Ecstacy, Methadone, Methamphetamines, Opiates, Oxycodone, THC, and Tricyclics.

					1				
Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Drug Toxic Panel (Toxic Panel, Drug)	Blood	Red and Gray	6 mL and 4 mL	С	< 24 Hours	LAB	DRUGTOX	DRUG-TOX	Red tube must be delivered to the lab within 2 hours; otherwise, centrifuge specimen, remove serum within 2 hours of collection and store at 4°C. If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection. Panel includes: quantitative tests for Acetaminophen, Ethyl Alcohol, Salicylate, and Osmolality. <b>Gray tube for Ethyl Alcohol:</b> Do not use any type of alcohol to disinfect skin. The tube must be allowed to draw to complete vacuum. Invert tube several times to mix. <b>Keep tube sealed until analysis</b> . Medicolegal specimens should be delivered directly to a police officer, not to the laboratory. If transported, do not centrifuge. See Chemistry Section in this manual for additional information.
Duodenal Aspirate	Aspirate	Sterile Screw-cap jar		М	72 hours	MIC	DUO	DUO	Deliver <b>immediately</b> .
Ear	Swab	Routine Swab		М	72 hours	MIC	EAR	EAR	Specimen stored at room temperature.
EBV Panel (Immune Status, Past Exposure)	Blood	GOLD	5 mL	М	10 Days	LAB	EBV PANEL	EBV PANEL	Includes EBNA and EBV IgG ( <b>based on results IgM may be reflexed</b> ). Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, store at 4°C. Referred - 1 to 2 mL Serum frozen
EBV VCA IGM (Acute Infection)	Blood	Red/GOLD	7 mL	М	10 days	LAB	EBV IGM	EBV IGM	See EBV PANEL This test is usually only ordered by the Laboratory department on patients less than 17 years old with a negative Mononucleosis test Serum stored for 2-8° C for 7 days or - 20° C for longer periods.
EBV PCR	Blood	Lavender	4 mL	М	7 days	LAB	EBVPCR	EBVPCR	DO NOT spin. Deliver ASAP or freeze at -70 within 6 hours of collection if unable to deliver to DECRH ASAP. Referred.
Echo Virus Serology				М					Test no longer available

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Ecoli 0157	Stool	Enteric Transport Medium		М	72 hours	MIC	STOOL	STOOL	Collect only one specimen. If it is negative and the symptoms continue, two more may be collected on separate days. Formed stool should be the size of a quarter. Liquid stool should be equal to the amount of the transport medium in the jar. <b>Routine culture includes Salmonella, Shigella, Yersinia, Campylobacter and E. coli</b> . If patient has eaten seafood, also order Vibrio Culture (VIB). See <u>HHN-0448</u> for collection instructions. Specimen stored at room temperature.
Ecstasy	Urine	Screw-cap jar	5 mL	С	< 24 Hours	LAB	URINE-ECST	ECS-U	Random specimen. This is a qualitative result.
Elavil (Amitriptyline)	Blood	Red	6 mL	С	10 Days	LAB	AMIT	AMIT	Draw 1 hour prior to next dose or at least12 hours after last dose. Specimen must be delivered to the lab within 2 hrs; otherwise, serum must be separated from the cells within 2 hrs of collection. Store at 4°C. See Chemistry Section in this manual for additional information. Referred - 2 mL Serum
Electrolyte Profile	a) Blood b) Urine c) Urine	Light Green Large plastic bottle Screw-cap jar	1 mL Complete 24 hr output 5 mL	C C C	STAT ≤45 Minutes Routine <24 Hours	LAB	LYTE LYTE-24H LYTE-R	LYTE LYTE-24H LYTE-U	<ul> <li>a) Specimen must be delivered to the lab within 2 hours; otherwise, specimen must be centrifuged within 2 hours of collection, store upright at 4°C. Profile includes: Sodium, Potassium, and Chloride.</li> <li>b) Profile includes: Sodium, Potassium, and Chloride. If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot. If output per day is not required, a random specimen is acceptable.</li> </ul>
	, 								c) Random urine specimen. Profile includes: Sodium, Potassium and Chloride
Enterovirus- Respiratory	Nose/throat nasopharyn geal	UTM (viral transport media)		М	1 week	MIC	ENTERORESP	ENTERORESP	For stool samples see Stool: Coxsackie/Enterovirus Specimen refrigerated. If transporting, 2-8°C if sending same day or Freeze at - 70°C.
Environmental Culture				М				ENV	No longer available.
Eosin-5-maleimide (EMA) for Hereditary Spherocytosis	Blood	Lavender	3 mL x 2	Н	5 Days	LAB	OF	EMA	Collect Monday to Wednesday AM only. Deliver to the lab IMMEDIATELY- send one lavender tube at RT and the other at 4°C. Contact DECRH Haematology @ 452-5451 if you have questions. Referred

Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use Laboratory User Manual Version 40.0 Page 157 of 242 Effective Date: January 24, 2022

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Eosinophil - Respiratory	a) Nasal secretion b) Sputum	Nasal Swab Screw-cap jar		Н	24 hr	LAB	EOSRESP	EOSRESP	
Epidermal Antibodies (Skin Antibodies)	Blood	GOLD X 2	5 mL x 2	С	12 Days	LAB	ANTIEP	ANTIEPID	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Assay includes Epidermal or Skin Antibodies. Referred - 3 mL Serum
Epiglottis	Swab	Routine Swab		М	72 hours	MIC	EPIG	EPIGL	Specimen stored at room temperature.
Epinephrine (included with Catecholamines)	a) Blood b) Urine	Lavender x 2 (pre-chilled) Large plastic bottle with HCI	4 mL x 2 Complete 24 hour output	С	15 Days	LAB	CATECH CAT-24H	CATECH CAT-24H	<ul> <li>a) Patient must be supine for at least 30 minutes prior to and during collection. Patient must refrain from eating, using tobacco and drinking caffeinated beverages for at least 4 hours prior to collection. Catechol drugs may interfere, including alpha methyldopa, alpha-methyl-para-tyrosine, isoproteronal, dobutamine and carbidopa. Collect in pre-chilled tube, place on ice and deliver to laboratory immediately. If transported, separate plasma within 60 minutes using a cold centrifuge and freeze. Referred - 2 mL Plasma frozen.</li> <li>b) See patient <u>Diet/Drug Restriction form HHN-0840</u></li> <li>Collect urine in a container with 25 mL of 6N HCI. The final pH must be maintained from 2-4. Restrict caffeine, nicotine and alcohol 24 h prior to collection. Discontinue Methyldopa (Aldomet) at least 5 days prior to collection. Other drugs usually do not interfere with this assay. If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 25 mL aliquot. Referred – 25 mL Urine</li> </ul>
Epival (Depakene) (Valproic Acid)	Blood	Red	1 mL	С	< 24 Hours	LAB	VALP	VALP	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Trough levels are generally measured. Draw trough immediately prior to next dose. If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection. See Chemistry Section in this manual for additional information.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Equanil (Meprobamate)	a) Blood b) Urine	Red Screw-cap jar	6 mL 50 mL	с с	8 Days	LAB	MEPRO-B MEPRO-U	MEPRO-B MEPRO-U	<ul> <li>a) Specimen must be delivered to lab within 2 hours; otherwise, centrifuge specimen, remove serum within 2 hours of collection and store at 4°C. Referred – 3 mL Serum.</li> <li>b) Referred - 50 mL Urine aliquot</li> </ul>
Erythrocyte Morphology	Blood	Lavender	3 mL	Н	Stat Preliminary Report 4 hr Routine 24 hr	LAB	SMEAR	SMEAR	<b>Mix by inverting gently 8-10 times.</b> Deliver to the lab within 4 hours of collection. If transported, the specimen must be received at DECRH the same day as collected.
Erythropoietin	Blood	GOLD	5 mL	С	5 Days	LAB	ERYS	ERYS	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If transported, plasma must be sent frozen if not received at DECRH within 24 hours of collection Referred - 1 mL Serum frozen.
Esophagus	Swab	Routine Swab		М	72 hours	MIC	ESOPH	ESOPH	Specimen stored at room temperature.
Estradiol (17-Beta Estradiol)	Blood	Light Green	1 mL	С	< 24 Hours	LAB	ESTRADIOL	ESTRA	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If transported, plasma must be sent frozen if not received at DECRH within 48 hours of collection.
Estrone	Blood	Red (gold tube not acceptable)	6 mL	С	6 Days	LAB	ESTRONE	ESTRONE	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Referred - 1 mL Serum frozen
Ethosuximide (Zarontin)	Blood	Red	6 mL	С	10 days	LAB	ETHO	ETHO	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Draw trough within 1 hour prior to next dose or at least 12 hours after last dose. Referred - 0.5 mL Serum
Ethyl Alcohol (Ethanol) (Alcohol, Ethyl)	Blood	Gray	Full	С	< 24 Hours	LAB	ALC	ALC	Do not use any type of alcohol to disinfect skin. The tube must be allowed to draw to complete full vacuum. Invert tube several times to mix. <b>Keep tube sealed until analysis</b> . Medicolegal specimens should be delivered directly to a police officer, not to the laboratory. If transported, do not centrifuge. This test is also part of a Drug Toxic Panel (DRUG-TOX). See Chemistry Section in this manual for additional information.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Ethylene Glycol	Blood	Light Green	Full	С	< 24 Hours	LAB	ALCEG	ALCEG	Note yellow, red, grey, lavender, and Barricor tubes are also acceptable. The tube must be allowed to draw to complete vacuum. Invert tube several times to mix. Keep tube sealed until analysis. If transported, do not centrifuge. Serum osmolality, Glucose, Urea and Sodium (2 mL blood in a yellow or Red tube is required) should also be requested.
E-tube	E-Tube	Sterile Screw-cap jar		М	72 hours	MIC	ET	ET	Deliver to laboratory immediately. Refrigerate specimen.
Extractable Nuclear Antibody Screen Screens for presence of: - Anti-SSA/RO - Anti-SSB/LA - Anti-SM - Anti-SM/RNP - Anti-SCL-70 - Anti-JO	Blood	GOLD or Red	5 mL	Н	21 days	LAB	ENA	ENA	<ul> <li>Avoid hemolysis. Separate serum within 2 hours of collection. If specimen cannot be transported to DECRH within 24 hours of collection, centrifuge and separate serum as follows:</li> <li>Red or Gold- If transported, Gold tube only requires one spin. Red tube requires two spins to ensure no red cells are left in the serum. <ul> <li>1st spin: Spin specimens in the centrifuge, after 1st spin is complete, remove tubes from centrifuge and transfer 1st spin serum to a separate labeled 12x75 plastic tube.</li> <li>2nd spin: Cap the labelled 12x75 tubes and re-spin serum, after 2nd spin is complete, carefully remove tubes from centrifuge, without disrupting button at bottom of tube.</li> <li>Remove serum, leaving sediment in bottom of tube. Transfer directly to labeled 12x75 plastic tube. </li> <li>Send 1 aliquot of 0.5 – 1.0 mL at 4°C</li> </ul></li></ul>
Eye	Swab	Routine Swab		М	72 hours	MIC	EYE	EYE	Specimen stored at room temperature.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Factor Assays: -Factor II -Factor V -Factor VII -Factor VIII -Factor IX -Factor X -Factor XI -Factor XII -Factor XIII	Blood	Blue (Sodium Citrate) X 2	2.7 mL x 2 Exactly for each assay ordered	Н	Stat (FVIII) 1 hr Stat all other factors 12 hours Routine 21 days	LAB	F2 F5 F7 F8 F9 F10 F11 F12 F13SC	FII FV FVII FVIII FVIX FX FXI FXII F13SC	<ul> <li>Deliver to the lab within 2 hours of collection. If transported, platelet poor plasma (count &lt; 10) must be achieved with the following procedure:</li> <li>11. 1<sup>st</sup> spin: Spin specimens in the centrifuge, after 1<sup>st</sup> spin is complete, remove blue tubes from centrifuge and transfer 1<sup>st</sup> spin plasma to a separate labeled 12x75 plastic tube.</li> <li>12. 2<sup>nd</sup> spin: Cap the 12x75 tubes and re-spin plasma, after 2<sup>nd</sup> spin is complete, carefully remove tubes from centrifuge, without disrupting platelets at bottom of tube.</li> <li>13. Carefully remove platelet poor plasma, leaving sediment (containing platelets) in bottom of tube. Transfer directly to labeled 12x75 plastic tube for the platelet count. Perform and record plt count on label if applicable.</li> <li>Send frozen in 1 aliquot of 2 mL.</li> </ul>
Factor V Leiden (Factor V Mutation)	Blood	Lavender	3 mL	Н	2 – 3 weeks	LAB	Factor V F5Leiden	FVMUT	Collect Monday to Wednesday only: <b>*HDSJ collect before 0900 on Wednesdays</b> <b>*TVCHC Wednesday collection not available</b> . Deliver to the lab within 2 hours of collection. Lavender Tube - If transported, DO NOT centrifuge. Store and transport at 4°C. Must arrive at DECRH same day as collection. Referred.
Farmer's Lung	Blood	Red or GOLD	5 mL x 2	М	14 days	LAB	ASPAB	ASPAB	Must indicate request for Farmer's lung in comments or on requisition. If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred.
	a) Feces	Screw-cap jar	1 g	С	48 Hours		FAT-FE	FAT-FE	a) Fresh specimen. Refrigerate immediately. Referred.
Fat Globules	b) Body Fluid	Screw-cap jar	1 mL	С	<24 Hours	LAB	FAT-FL	FAT-FL	b) Indicate origin of fluid.
Fat Total	Feces	Special plastic containers	Timed specimens	С	5 Days	LAB	FAT-72H	FAT-72H	Patient's diet should contain 100-150 g of fat per day and no laxatives for 3 days prior to and during collection. Begin timing with first sample collected. When 72 hours have elapsed, terminate collection. All stool specimens passed in a 72 hour period are collected in special containers obtained from SPD or stores. Each specimen must be labeled with the date and time of collection and sent to Chemistry. Referred

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Fatty Acid Profile	Blood	Dark Green	4 mL	С	7 Days	LAB		FATTY	14 hour fast is required. No alcohol for 24 hours. Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection and store at 4°C. If transported, plasma must be sent frozen if not received at DECRH within 72 hours of collection otherwise transport at 4°C. Referred – 0.5 mL plasma frozen.
Fentanyl-Urine	Urine	Screw-cap jar	1 mL	С	<24 Hours	LAB	FEN-U	FEN-U	Specimen must be delivered to lab within 2 hrs; otherwise, sample can be stored at 2-8°C for up to 48 hours. Store and transport at 2-8°C.
Ferritin	Blood	Light Green	1 mL	С	< 24 Hours	LAB	FER	FER	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection and store at 4°C. If transported, plasma must be sent frozen if not received at DECRH within 3 days of collection.
Fertility Serology	Blood	Red or GOLD	5 mL x 2	М	2 weeks	LAB	FERTILITY	FERTILITY	Includes the following tests: RPR titer, HBsAg, anti-HBc, anti-HCV, Rubella, HIV, HTLV I/II and TPPA If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. HTLVI/II and TPPA Referred.
Fetal Fibronectin (FFN)	Swab	Specimen collection kit		С	< 24 Hours			FFN	Specimen collection kits are supplied by Chemistry. This test is not available through O/E. A completed requisition must accompany the specimen.
Fetal Lung Maturity									Test no longer available.
Fibrinogen	Blood	Blue	2.7 mL Exactly	Н	Stat 1 hr Routine 24 hr	LAB	FIB	FIB	<ul> <li>Deliver to the lab within 2 hours of collection. If transported, platelet poor plasma (count &lt; 10) must be achieved with the following procedure:</li> <li>14. 1<sup>st</sup> spin: Spin specimens in the centrifuge, after 1<sup>st</sup> spin is complete, remove blue tubes from centrifuge and transfer 1<sup>st</sup> spin plasma to a separate labeled 12x75 plastic tube.</li> <li>15. 2<sup>nd</sup> spin: Cap the 12x75 tubes and re-spin plasma, after 2<sup>nd</sup> spin is complete, carefully remove tubes from centrifuge, without disrupting platelets at bottom of tube.</li> <li>16. Carefully remove platelet poor plasma, leaving sediment (containing platelets) in bottom of tube. Transfer directly to labeled 12x75 plastic tube for the platelet count. Perform and record plt count on label if applicable.</li> <li>Send frozen in 1 aliquot of 2 mL.</li> </ul>
FISH (Fluorescent InSitu Hybridization)	Blood	Green (Sodium Heparin)	10 mL or full pediatric tube	CG	176 Hours	LAB	FISHANAL	FISH	Draw blood on Monday to Wednesday, mornings only. Send to Chemistry the same day as collected. Store and ship at Room Temperature. A properly completed requisition MUST arrive with, or in advance of, the specimen. Requisition available from Chemistry. Referred - Whole Blood

Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use

Laboratory User Manual Version 40.0

Page 162 of 242

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
FK 506 (Tacrolimus)	Blood	Lavender	4 mL	С	3 Days	LAB	FK506	FK506	Draw blood prior to next dose. Do not centrifuge. If transported, send as whole blood at 4°C.
Fletcher Factor (Prekallkrein)	Blood	Blue (Sodium Citrate)	2.7 mL	С	25 Days	LAB	FF	FF	<ul> <li>Deliver to the lab within 2 hours of collection. If transported, platelet poor plasma (count &lt; 10) must be achieved with the following procedure: <ol> <li>1st spin: Spin specimens in the centrifuge, after 1st spin is complete, remove blue tubes from centrifuge and transfer 1st spin plasma to a separate labeled 12x75 plastic tube.</li> <li>2nd spin: Cap the 12x75 tubes and re-spin plasma, after 2nd spin is complete, carefully remove tubes from centrifuge, without disrupting platelets at bottom of tube.</li> </ol> </li> <li>3. Carefully remove platelet poor plasma, leaving sediment (containing platelets) in bottom of tube. Transfer directly to labeled 12x75 plastic tube for the platelet count. Perform and record plt count on label if applicable.</li> <li>4. Send frozen in 2 aliquots of 1 mL each. Referred</li> </ul>
Fluid				М					See Body Fluid
Fluid Identification (CSF Query)	Fluid	Sterile Container		С	8 Days	LAB	FLUID	FLUID	Refer to Beta ( $\beta$ ) 2 Transferrin
Flunitrazepam (Rohypnol)	Urine	Screw-cap jar	5 mL	С	7 Days	LAB		FLUNIT-U	Please note this is part of the "Date Rape Drugs" profile. This test is referred as a Benzodiazepine ID profile. Presence or absence of Flunitrazepam will be reported alomg with other detectable benzodiazepines. Referred - 5 mL Urine
Fluoride	Blood	Royal Blue EDTA	6 mL	С	25 Days	LAB	FLUORIDE	FL	Deliver to Chemistry immediately. Transfer 2 mL plasma ASAP to a metal-free polypropylene vial. Referred
Fluoxetine (Prozac)	Blood	Red	6 mL	С	8 Days	LAB	FLUOX	FLUOX	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Draw trough prior to next dose. Referred - 1 mL Serum

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Folic Acid - Serum (Folate)	Blood	Light Green	1 mL	С	< 24 Hours	LAB	FOL	FOL	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C for up to 2 hours. 8 hour fast is required. <b>There must be no hemolysis.</b> If transported, plasma must be refrigerated within 2 hours and must be sent frozen if not received at DECRH within 48 hours of collection. Please see <u>Utilization</u> rules
Fragile-X	Blood	Lavender x 3	3 mL x 2	CG	187 Days	LAB	FRAGANAL	FXBLD & FRAGX	Draw blood on Monday to Wednesday, mornings only. Specimens must be kept at Room Temperature. Send to Chemistry the same day as collected. <b>A properly</b> <b>completed requisition MUST arrive with, or in advance of, the specimen.</b> Requisition available from Chemistry. Referred Whole Blood
Free Fatty Acids	Blood	GOLD	5 mL	С	19 Days	LAB	FFA	FFA	12 hour fast is required. Specimens containing heparin or samples collected from patients receiving heparin therapy are unsuitable for analysis. Deliver to Chemistry immediately. Separate serum from clot and freeze ASAP. Referred -1 mL Serum frozen
Free Kappa-Lambda Ratio (Free Light Chains)	Blood	GOLD	1 ml	С	7 Days	LAB	LIGHTCHAIN	FREE K-L RATIO	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Referred at 4°C - 1 mL Serum
Free PSA (Prostate Specific Antigen - Free)	Blood	Light Green	1 mL	С	24-48 Hours	LAB	FPSA	FPSA	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If a red tube is used, remove serum immediately. If transported, serum must be sent frozen if not received at DECRH within 5 days of collection. Free PSA will only be done if the total PSA is greater than 4.0 but less than $10\mu g/L$ . Referred – 1.0 mL serum. Please see <u>Utilization</u> rules
Free T3	Blood	Light green	1 mL	С	< 24 Hours	LAB	FT3	FT3	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If transported, plasma must be sent frozen if not received at DECRH within 48 hours of collection. <b>Please note</b> : TSH is the preferred screening test. If TSH result is outside reference range, a Free T4 is performed. If TSH is < 0.1 mU/L and Free T4 is normal, a Free T3 is performed. Please see <u>Utilization</u> rules.
Free Thyroxine (Free T4)	Blood	Light Green	1 mL	С	< 24 Hours	LAB	FT4	FT4	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If transported, plasma must be sent frozen if not received at DECRH within 48 hours of collection. <b>Please note:</b> TSH is the preferred screening test. If TSH result is outside reference range, a Free T4 is performed. If TSH is < 0.1 mU/L and Free T4 is normal, a Free T3 is performed. Please see <u>Utilization</u> rules

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Frisium (Clobazam)	Blood	Red	6 mL	С	12 Days	LAB	CLO	CLO	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Draw trough prior to next dose. Referred - 1 mL Serum
Fructosamine	Blood	GOLD	5 mL	С	10 Days	LAB	FRU	FRU	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Referred – 1.0 mL Serum
FSH (Follicle Stimulating Hormone)	Blood	Light Green	1 mL	С	< 24 Hours	LAB	FSH	FSH	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If transported, plasma must be sent frozen if not received at DECRH within 48 hours of collection.
FTA-ABS: Spinal fluid (Fluorescent Treponemal Antibody)	Spinal fluid	Sterile Screw-cap tube	1 mL	Μ	2 weeks	MIC	CSFPCR	CSFPCR	Deliver to the laboratory immediately. If transported, freeze at -70°C.Referred.
Fungus				М					See Specimen type + Fungus
Gabapentin (Neurontin)	Blood	Red	6 mL	С	11 Days	LAB	GABAP	GABAP	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Draw trough specimen prior to next dose. Referred – 1 mL Serum frozen
Galactomannan	Blood	Gold separator	5 mL	М	72 hours	LAB	GALSEROL	GALSEROL	Deliver to the laboratory immediately. Specimen should be centrifuged upon receipt. Do not remove serum. Do not remove cap. Specimen referred. Store at 4°C.
Galactose 1 Phosphate Uridyl Transferase	Blood	Dark Green	6 mL	С	15 Days	LAB	GPUT	GPUT	Do not centrifuge. Do not freeze. A blood transfusion within the past 3 months invalidates results. Must provide patient's date of birth. Positive screen results are confirmed by quantitation. If patient is more than 1 year old, testing is only available on consultation with referral laboratory. Referred - 1 mL Whole Blood
Galactose Screening	Urine	Screw-cap jar	5 mL	С	12 Days	LAB	GAL	GAL	Random specimen. Deliver to Chemistry as soon as possible either at room temperature or refrigerated. Referred – 1 mL frozen urine (0.5 mL minimum)
Gamma Hydroxybutyrate (GHB)	Urine	Screw-cap jar	5 mL	С	8 Days			GHB-U	Please note this is a "date rape" drug. Referred - 5 mL Urine aliquot
Gastric Analysis	Gastric	Screw-cap jar	5 mL	С	<24 Hours			GAS	Gastric Sample. Includes Volume, pH and Total Acidity

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Gastric Fluid				М					See Body Fluid
Gastrin	Blood	GOLD (place on ice)	5 mL	С	5 Days	LAB	GASTRIN	GASTRIN	12-hour fast is required. Place sample on ice and deliver to Chemistry immediately. Separate serum from clot within 2 hours in refrigerated centrifuge. Referred - 1.0 mL Serum frozen
Gastrin Challenge Test				С	18 Days			GASCT	See Chemistry Section in this manual for additional information.
General Surgery Profile (GSP)	Blood	Light Green	1 mL	С	STAT ≤45 Minutes Routine <24 Hours	LAB	GSP	GSP	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. <b>Fasting is not required.</b> This is a <b>pre-surgery screen</b> and includes Random Glucose, Creatinine, Albumin, Alkaline Phosphatase, Bilirubin, ALT, Sodium, Potassium, and Chloride.
Gentamicin	Blood	Red	1 mL	С	< 24 Hours	LAB	GENTA	GENTA	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Order includes trough and peak specimens. Draw trough 30 minutes prior to next dose. Draw peak: 2 hours after IM dose or 1 hour after completion of a traditional IV infusion. For an extended interval infusion and once daily dosing regimen consult pharmacy. If transported, serum must be must be sent frozen if not received at DECRH within 48 hours of collection. See Chemistry Section in this manual for additional information. Referred.
Gentamicin - Random	Blood	Red	1 mL	С	< 24 Hours	LAB	GENTA-R	GENTA-R	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection. See Chemistry Section in this manual for additional information. Referred.
Gentamicin - Trough	Blood	Red	1 mL	С	< 24 Hours	LAB	GENTA-T	GENTA-T	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Draw trough30 minutes prior to next dose. If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection. See Chemistry Section in this manual for additional information. Referred.
GGT (Gamma Glutamyl Transferase)	Blood	Light Green	1 mL	С	< 24 Hours	LAB	GGT	GGT	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
GHB (Gamma Hydroxybutyrate)	Urine	Screw-cap jar	5 mL	С	8 Days	LAB		GHB-U	Please note this is a "date rape" drug. The sample is valid only if collected within 8 hours of suspected ingestion. Note ingestion time on requisition. Referred - 5 mL Urine aliquot
Glomerular Basement Membrane Antibody (Anti-Glomerular Basement Membrane Antibody)	Blood	GOLD	5 mL	С	8 Days	LAB	ANTIGLO	ANTIGLO	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C Referred - 1 mL Serum
Glucagon	Blood	Lavender, (Pre-chilled)	2 mL	С	8 Days	LAB	GLUCA	GLUCA	Collect after an overnight fast. Draw into a pre-chilled lavender tube. Place full tube in wet ice for 10 minutes. Centrifuge in special refrigerated centrifuge or use pre-chilled carriers. Separate plasma and freeze immediately. Referred frozen.
Glucocerebrosidase (Beta Glucosidase)	Blood	Dark Green x 2	6 mL x 2	С	20 Days	LAB	BGLUCO	BETAGLU	Collect specimens Monday - Wednesday AM at DECRH only. Deliver to Chemistry immediately. Referred – Whole Blood
Glucose Random	Blood	Light Green or Gray	1 mL	С	STAT ≤45 Minutes Routine <24 Hours	LAB	GLU	GLU-R	Light Green tube must be delivered to the lab within 2 hours; otherwise, specimen must be centrifuged within 2 hours of collection and stored upright at 4°C.
Glucose	Body Fluid	Gray	4 mL	С	STAT ≤45 Minutes Routine <24 Hours	LAB	GLU-F	GLU-F	Indicate origin of fluid.
Glucose	Spinal Fluid	Sterile Screw-cap tube	0.5 mL	С	STAT ≤45 Minutes Routine <24 Hours	LAB	GLU-CSF	GLU-CSF	Deliver tube # 1 of the three tubes collected to Chemistry immediately. Testing must be completed as soon as possible within 1 hour. A concurrent blood sugar determination is recommended.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Glucose	Urine	Screw-cap jar	15 mL	С	STAT ≤45 Minutes Routine <24 Hours	LAB	U/A	U/A	Fresh random specimen for semi-quantitative testing. Included with routine urinalysis.
Glucose - Fasting	Blood	Light Green	1 mL	С	STAT ≤45 Minutes Routine <24 Hours	LAB	GLU-FAST	FGLU	Green tube must be delivered to the lab within 2 hours; otherwise, specimen must be centrifuged within 2 hours of collection and stored upright at 4°C. 8 hour fast is required. Out-patients on insulin should be advised to postpone the morning medication until after specimen is drawn.
Glucose - AC	Blood	Gray	4 mL	С	STAT ≤45 Minutes Routine <24 Hours	LAB	GLUAC	AC	8 hour fast is required. Out-patients on insulin should be advised to postpone the morning medication until after AC specimen is drawn.
Glucose - Gestational Diabetes Screen (GDS)	Blood	Gray	4 mL	С	< 24 Hours	LAB	GLUGDS	GDS	The patient does not have to fast prior to the glucose load. A drink containing 50 g glucose is given and the patient is not allowed anything further to eat or drink except water until a blood sample is drawn 1 hour later. See Chemistry Section in this manual for additional information.
Glucose 6 Phosphate Dehydrogenase (G-6 PD)	Blood	Lavender	3 mL	Н	Stat 48 hr Routine 7 days	LAB	G6PD	G6PD	<b>Mix by inverting gently 8-10 times.</b> Deliver to the lab within 4 hours of collection. If transported, the specimen must be received at DECRH the same day as collected.
Glucose Tolerance Test - 2 Hour	Blood	Gray	4 mL for each specimen	С	< 24 Hours	LAB	GTT2	GTT2	This order includes 0 and 2 hour specimens. See Chemistry Section in this manual for additional information.
Glucose Tolerance Test - Prenatal	Blood	Gray	4 mL for each specimen	С	< 24 Hours	LAB	GTTP	GTTP	This order includes 0, 1 and 2 hour specimens. See Chemistry Section in this manual for additional information.
Glycosaminoglycans (GAGS)	Urine		10 mL	С	15 Days	LAB	MUCOPOLY	MUCOPOLY	See Mucopolysaccharides Screen
Glycosylated Hemoglobin (HbA1C) (Hemoglobin A1C)	Blood	Lavender	3 mL	С	3 Days	LAB	HA1C	HA1C	If transported, do not centrifuge, send Whole Blood. For capillary sample collect blood in 1 Lavender microvette. Please see <u>Utilization</u> rules

Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use Laboratory User Manual Version 40.0 Page 168 of 242

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
GM1 Ganglioside Antibody (Anti-GM1)	Blood	Red	6 mL	С	12 Days	LAB	ANTIGM	ANTIGM	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Referred 1 mL frozen on ice packs.
Gonorrhoeae culture: Female (see Chlamydia Trachomatis / Gonorrhoeae PCR: Cervix / VAG as it is the preferred method of testing)	See collection / referral column	Routine Swab		Μ	72 hours	MIC	сх	сх	Required for SENSITIVITY TESTING ONLY <b>Specimen</b> < 12 yrs old -Vaginal swab, >12 yrs old –Cervix swab & Post-hysterectomy- Urethral swab Specimen stored at room temperature.
Gonorrhoeae culture: Male (see Chlamydia Trachomatis / Gonorrhoeae PCR: Urine as it is the preferred method of testing.	Swab	Routine Swab		М	72 hours	MIC	URETH	URETH	Required for SENSITIVITY TESTING ONLY Specimen stored at room temperature.
GQ1b Auto Antibody	Blood	Red	6 mL	С	15 Days	LAB	G1Q	GQ1b AB	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Referred - 3 mL Serum. If transported, serum should be sent frozen if not received at DECRH within 72 hrs of collection.
Gravol (Dramamine) (Dimenhydrinate)									Test no longer routinely available

Test	pecimen	container	Amount	epartment	ırnaround Time	OE Category	OE Anemonic	Lab Anemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor)
	0 0	0		ă	Τι	0	2	2	or 15 minutes (fixed angle rotor)
Group and Screen	Blood	Pink x 2	6 mL x 2	ТМ	Stat 1 hr Asap 2 hr Routine 5 hr		GRP	GS	*PROPER PATIENT IDENTIFICATION IS CRITICAL* Specimens collected, and requisition must be signed immediately after collection while in the vicinity of the patient (i.e. bedside) If transported, <b>DO NOT</b> separate plasma from cells and transport within 24 hours at 2-8°C. Indicate on the order form/requisition Group and Screen requested and product required if applicable (i.e. Platelets and Plasma) A crossmatch is not performed with this order. Blood group and antibody screen testing is performed, and the specimen is held in case blood (crossmatch) is required while the specimen is still current (Call Transfusion Medicine Lab) <b>The individual who collects the specimen MUST:</b> sign the requisition with <b>full signature</b> and initials with date and time of collection. Specimen label must have date and time with collector's initials.
Group and Screen HOLD	Blood	Pink x 2	6 mL x 2	ТМ	Stat 1 hr Asap 2 hr Routine 5 hr		BBHOLD	BBHOLD	*PROPER PATIENT IDENTIFICATION IS CRITICAL* Specimens collected, and requisition must be signed immediately after collection while in the vicinity of the patient (i.e. bedside) If transported, <b>DO NOT</b> separate plasma from cells and transport within 24 hours at 2-8°C. No testing is performed with this order. The specimen is held in case blood (crossmatch) is required while the specimen is still current. Call the Transfusion Medicine Lab if order is changed from a HOLD to a Group & Screen or Crossmatch <b>The individual who collects the specimen MUST:</b> sign the requisition with <b>full signature</b> and initials with date and time of collection. Specimen label must have date and time with collector's initials.
Group B Streptococcus	Swab	Routine Swab		М	48 hours	MIC	VAGRCTLGRB	GBS	Prenatal screen for group B Streptococcus. Swab the vagina and then, using the same swab, swab the rectum. Specimen stored at room temperature.
Growth Hormone	Blood	Red	6 mL	С	15 Days	LAB	GH	GH	Patient should be at complete rest for 30 minutes prior to blood draw. Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. 8 - 12 hour fast is required. Referred - 500 $\mu$ L frozen. See Chemistry Section in this manual for additional information.
Growth Hormone - Glucose Suppression Test	Blood			С	15 Days				See Chemistry Section in this manual for additional information. Referred
Growth Hormone Challenge Test – Clonidine Stimulation				С	15 Days				Call Medical Day Care at DECRH for testing information. Referred.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Growth Hormone Challenge Test – Glucagon Stimulation				С	15 Days				Call Medical Day Care at DECRH for testing information. Referred.
Growth Hormone ChallengeTest - Arginine Stimulation				С	15 Days	LAB	GHCT	GHCT	See Chemistry Section in this manual for additional information. Referred.
GSP (General Surgery Profile)	Blood	Light Green	1 mL	С	< 24 Hours	LAB	GSP	GSP	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. <b>Fasting is not required.</b> This is a <b>pre-surgery screen</b> and includes Random Glucose, Creatinine, Albumin, Alkaline Phosphatase, Bilirubin, ALT, Sodium, Potassium, and Chloride.
Hair for Fungus	Hair	Sterile screw- cap jar		М	smear 3 days final 4 weeks	MIC	MYC	MYC	Hair should be stubs removed with tweezers from infected area. Specimen stored at room temperature.
Haloperidol (Haldol)	Blood	Dark Green	6 mL	С	12 Days	LAB	HAL	HAL	Draw trough prior to next dose. Deliver to Chemistry immediately. Separate plasma from cells ASAP. Referred - 1 mL Plasma frozen
Haptoglobin	Blood	GOLD	5 mL	С	96 Hours	LAB	НАРТО	HAPTO	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Avoid hemolysis. Referred - 1 mL Serum
HCG Screen (Qualitative Urine Pregnancy Test)	Urine	Screw-cap jar	7 mL	С	Stat 1 hr Asap 2 hours Routine 24 hr	LAB	PREGUR	PREGUR	This pregnancy test is sufficiently sensitive for conditions (such as suspected ectopic implantation) where low levels of HCG must be detected quickly. Results are reported as positive or negative. The sensitivity of the test is 25 IU/L. Urines can be refrigerated for up to 24 hours.
HCG, Beta (Quantitative)	Blood	Light Green	1 mL	С	STAT ≤45 minutes Routine < 24 Hours	LAB	BHCGQT	BHCG	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If transported, plasma must be sent frozen if not received at DECRH within 72 hrs of collection.
HDL Cholesterol	Blood	Light Green	1 mL	С	< 24 Hours	LAB	HDL	HDL	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. This test should not be done within 3 months following myocardial infarction, surgery or similar trauma. The patient need not fast unless other lipid tests are requested.
Heat Shock Protein (68 kD Antibodies)	Blood	GOLD x 2	5 mL x 2	С	20 Days			HSP-70	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Consult Clinical Chemist before drawing specimen. Referred - 2-3 mL Serum

Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use Page 171 of 242 Effective Date: January 24, 2022

Laboratory User Manual Version 40.0

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Heavy Metals Screen (Arsenic, Cadmium, Chromium, Lead, Mercury)	Urine	Heavy metal free large plastic bottle	Complete 24 hr output	С	15 Days	LAB	METALS	HEAVY	If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot. Remember to measure 24 hour urine using an acid washed cylinder and transfer aliquot to a metal-free polypropylene vial. Referred.
Heinz Body Test									Test no longer available
Helicobacter pylori antigen: Stool	Stool	Sterile Screw-cap jar		М	1 week	MIC	HPYLORI	HPYLAG	Preferred test. Test for successful treatment of H. pylori infection (test $\ge$ 4 weeks post treatment). Test affected by bleeding ulcers, antibiotics, bismuth & PPIs (discontinue these drugs for at least 4 weeks). Histamine 2 blockers may be used in the intervening time. See Form <u>HHN-0448</u> for patient collection instructions Specimen stored at 2-8°C.
Helicobacter pylori Culture	Gastric biopsy	Amies media or Sterile saline		Μ	2 weeks				Call Microbiology before collection. Collect Monday-Thursday only. <b>Deliver to Laboratory ASAP.</b>
Helicobacter pylori Serology				М					Testing no longer available. Please order H. pylori stool antigen.
Hemochromatosis Gene	Blood	Lavender	3 mL	CG	25 Days	LAB	HEMOCHRO	HEMOCHR	Do not separate. Store and ship specimens in original container at Room Temperature. Sample stable for 7 days. Referred - Whole Blood
Hemoglobin A1C (Glycosylated Hemoglobin) (HbA1C)	Blood	Lavender	3 mL	С	3 Days	LAB	HA1C	HA1C	If transported, do not centrifuge, send Whole Blood. For capillary sample collect blood in 1 Lavender microvette. Please see <u>Utilization</u> rules
Hemoglobin Electrophoresis (Profile includes Ferritin)	Blood	Lavender x 2 Light Green	3 mL x 2 1 mL	H C	2 weeks	LAB	HGBEP	HGBEP	<ul> <li>Collect Monday to Wednesday Only. Referring laboratories are to run CBC at originating facility. Samples should be stored at 2-8 °C if not shipped on the same day.</li> <li>Light green specimen for ferritin must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, aliquot off plasma and transport at 4°C.</li> <li>Some tests in this profile are referred.</li> </ul>

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Llomosidarin	a) Sputum	Sterile Screw-cap jar	1 mL	Н	Douting 24 hr		HS	HS	a) Deliver to the lab immediately.
Hemosidenin	b) Urine	Screw-cap jar	15 mL	Н	Rouune 24 m		HU	HU	b) Collect Monday to Friday before 1400. Deliver to the lab immediately. First morning specimen. Catheter specimens are preferred on females.
Heparin Assay (Anti-Xa)	Blood	Blue x 2	2.7 mL x 2	С	24-48 Hours	LAB	HEPARINASY	HEPASSY	<ul> <li>Request must specify "Low Molecular Weight" ("LMW") or specify the Heparin preparation (brand name) administered. Deliver to lab immediately. If transported, the specimen must be spun twice &amp; the plasma removed &amp; frozen ASAP. If transported, platelet poor plasma (count &lt; 10) must be achieved with the following procedure:</li> <li>17. 1<sup>st</sup> spin: Spin specimens in the centrifuge, after 1<sup>st</sup> spin is complete, remove blue tubes from centrifuge and transfer 1<sup>st</sup> spin plasma to a separate labeled 12x75 plastic tube.</li> <li>18. 2<sup>nd</sup> spin: Cap the 12x75 tubes and re-spin plasma, after 2<sup>nd</sup> spin is complete, carefully remove tubes from centrifuge, without disrupting platelets at bottom of tube.</li> <li>19. Carefully remove platelet poor plasma, leaving sediment (containing platelets) in bottom of tube. Transfer directly to labeled 12x75 plastic tube for the platelet count. Perform and record plt count on label if applicable.</li> </ul>
Heparin Induced Thrombocytopenia (Anti-Heparin Antibody)	Blood	Red Blue	2 X 6 mL 3X 2.7mL	Н	5 Days	LAB	HEPARININ	AHEP	Refer to Anti Heparin Antibody
Hepatitis A Total Antibody	Blood	Red or GOLD	2 mL	М	48 hours	LAB	HAVT	HAVT	Combined IgG/IgM test. If transported, separate serum from clot and send serum. 2-8°C if sending within 72 hours or Freeze at -20°C.
Hepatitis A IgM Antibody	Blood	Red or GOLD	2 mL	М	48 hours	LAB	HAVM	HAVM	Recent or acute infection. If transported, separate serum from clot and send serum. 2-8°C if sending within 72 hours or Freeze at -20°C.
Hepatitis Acute Screen (Hepatitis B & C)	Blood	Red or GOLD	5 mL	М	48 hours	LAB	HEPINF	HEPINF	Includes: HBS, HBC, HCV If transported, separate serum from clot and send serum. 2-8°C if sending within 72 hours or Freeze at -20°C.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Hepatitis B Immunity/Post Vaccine	Blood	Red or GOLD	2 mL	М	48 hours	LAB	HEPIMM	HEPIMM	Includes: HBAB If transported, separate serum from clot and send serum. 2-8°C if sending within 72 hours or Freeze at -20°C.
Hepatitis B Core Antibody (IgG & IgM-Total)	Blood	Red or GOLD	2 mL	М	48 hours	LAB	HBC	НВС	Past or present hepatitis B infection. If transported, separate serum from clot and send serum. 2-8°C if sending within 72 hours or Freeze at -20°C.
Hepatitis B Core Antibody (anti-HBc IgM)	Blood	Red or GOLD	2 mL	М	2 weeks	LAB	НВСМ	НВСМ	Active viral replication and high infectivity. If transported, separate serum from clot and send serum. 2-8°C if sending within 72 hours or Freeze at -20°C.
Hepatitis B e Antibody (anti-Hbe)	Blood	Red or GOLD	2 mL	М	2 weeks	LAB	HBEAB	HBEAB	Reduced viral replication and infectivity. If transported, separate serum from clot and send serum. 2-8°C if sending within 72 hours or Freeze at -20°C.
Hepatitis B e Antigen (Hbe antigen)	Blood	Red or GOLD	2 mL	М	2 weeks	LAB	HBE	HBE	Active viral replication and high infectivity. If transported, separate serum from clot and send serum. 2-8°C if sending within 72 hours or Freeze at -20°C.
Hepatitis B Genotype	Blood	Lavender	4 mL x 2	М	4 weeks			HBVTYPE	Deliver immediately. Plasma must be removed from cells within 6 hours of collection and frozen at -70°C. If transported, send plasma frozen <b>on dry ice</b> . Referred.
Hepatitis B PCR	Blood	Lavender	4 mL x 2	М	4 weeks	LAB	HEPBPCR	PCRHBV	Deliver immediately. Plasma must be removed from cells within 6 hours of collection and frozen at -70°C. If transported, send plasma frozen <b>on dry ice</b> . Referred.
Hepatitis B Surface Antibody (anti-HBS)	Blood	Red or GOLD	2 mL	М	48 hours	LAB	HBAB	НВАВ	Recovery from hepatitis B infection, or immunization. If transported, separate serum from clot and send serum. 2-8°C if sending within 72 hours or Freeze at -20°C.
Hepatitis B Surface Antigen (HBsAg)	Blood	Red or GOLD	2 mL	М	48 hours	LAB	HBS	HBS	Current or acute infection. Specimen must be delivered to lab within 6 hrs; If transported, separate serum from clot and send serum. 2-8°C if sending within 72 hours or Freeze at -20°C.
Hepatitis B Viral Load	Blood	Lavender	4 mL x 2	М	2 weeks	LAB	HBVLOAD	HBVLOAD	Deliver immediately. Plasma must be removed from cells within 6 hours of collection and frozen at -70°C. If transported, send plasma frozen <b>on dry ice</b> . Referred.
Hepatitis C (anti-HCV)	Blood	Red or GOLD	2 mL	М	48 hours	LAB	HCV	HCV	Past or present infection with hepatitis C. If transported, separate serum from clot and send serum. 2-8°C if sending within 72 hours or Freeze at -20°C.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Hepatitis C Genotype	Blood	Lavender x 3	3 mL x 3	М	3 weeks	LAB	HCVTYPE	HCVTYPE	Deliver immediately. Specimen must be delivered to the lab within 6 hours; otherwise specimen must be centrifuged at 1100 g for 20 minutes, separate plasma from cells immediately and store at -70 °C. Can use same specimen as Viral Load. If transported, send plasma frozen <b>on dry ice</b> . Referred.
Hepatitis C PCR									Test no longer available. Order Hepatitis C Viral Load.
Hepatitis C Viral Load	Blood	Lavender x 3	3 mL x 3	М	10 days	LAB	HCVLOAD	HCVLOAD	Deliver immediately. Specimen must be delivered to the lab within 6 hours; otherwise specimen must be centrifuged at 1100 g for 20 minutes, separate plasma from cells immediately and store at -70 °C. If transported, send plasma frozen <b>on dry ice</b> . Referred.
Hepatitis C NS3 Q80K	Blood	Lavender x 2	3 mL x 2	Μ	2 weeks			PCRMISC	Deliver immediately. Specimen must be delivered to the lab within 6 hours; otherwise specimen must be centrifuged at 1100 g for 20 minutes, separate plasma from cells immediately into 2 aliquots (minimum 1.2 mLs plasma) and store at -70 °C. If transported, send plasma frozen <b>on dry ice</b> . Referred
Hepatitis D (Delta Antibody) (anti-HD)	Blood	Red or GOLD	5 mL	М	4 weeks	LAB	HD	HD	Infection with hepatitis D. Only occurs in the presence of HBsAg. If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred.
Hepatitis: Health Care Worker Post-Exposure	Blood	Red or GOLD Light Green	5 mL x 2 5mL	M&C	48 hours	LAB	NEEDLE EXP	NEEDLE EXP	Includes: HBAB, HBS, HBC, HCV, HIV and Chemistry: ALT. Specimens must be delivered to lab within 2 hrs; otherwise centrifuge specimen within 2 hours of collection. Remove serum immediately and store at 4°C.
Hepatitis: Health Care Worker Post-Exposure (High Risk Source)	Blood	Red or GOLD Lavender Light Green	5 mL x 2 3mL 5mL	M & H &C	48 hours	LAB	NEEDLE PEP	NEEDLE PEP	Includes: HBAB, HBS, HBC, HCV, HIV and Chemistry: ALT, ALP,CBC,UREA,Creatinine,Electrolytes, Total Bilirubin. Specimens must be delivered to lab within 2 hrs; otherwise centrifuge specimen within 2 hours of collection. Remove serum immediately and store at 4°C.
Hepatitis : Post-Exposure Patient/Inoculum	Blood	Red or GOLD	5 mL	М	48 hours	LAB	NEEDLE SC	NEEDLE SC	Includes: HBS, HCV and HIV If transported, separate serum from clot and send serum. 2-8°C if sending within 72 hours or Freeze at -20°C.
Hepatitis: Post-Exposure 6 weeks, Not immune to Hepatitis B	Blood	Red or GOLD Light Green	5 mL x 2 5mL	M & C	48 hours 10 days (PCR)			NEEDLEPOST6 W <b>NI</b>	Includes: HBS, HBC, HBAB, HCV PCR and Chemistry: ALT Specimen must be delivered to lab within 2 hrs; otherwise centrifuge specimen within 2 hours of collection, remove serum immediately and store at 4°C.
Hepatitis: Post-Exposure 6 weeks, Immune to Hepatitis B	Blood	Red or GOLD Light Green	5 mL x 2 5mL	M & C	48 hours 10 days (PCR)			NEEDLEPOST6 WI	Includes: HIV, HCV PCR and Chemistry: ALT Specimen must be delivered to lab within 2 hrs; otherwise centrifuge within 2 hours of collection, remove serum immediately and store at 4°C.

	len	ler	ŧ	lent	pun	٥IJ	nic	nic	Collection/ Referral Instructions
Test	Specim	Contair	Amoui	Departm	Turnaro	OE Catego	OE Mnemoi	Lab Mnemoi	Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Hepatitis: Post-Exposure 3and 6 months, Immune to Hepatitis B	Blood	Red or GOLD Light Green	5 mL x 2 5mL	M & C	48 hours			NEEDLEPOS3& 6MI	Includes: HCV, HIV and Chemistry: ALT Specimen must be delivered to lab within 2 hrs; otherwise centrifuge within 2 hours of collection, remove serum immediately and store at 4°C.
Hepatitis: Post-Exposure 3 and 6 months, Not Immune to Hepatitis B	Blood	Red or GOLD Light Green	5 mL x 2 5mL	M & C	48 hours			NEEDLEPOS3& 6M <b>NI</b>	Includes: HBS, HBAB, HCV, HIV and Chemistry: ALT. Specimen must be delivered to lab within 2 hrs; otherwise centrifuge within 2 hours of collection, remove serum immediately and store at 4°C.
Herpes IgG- type 1 & 2	Blood	Red or Gold	5mL	М	10 days	LAB	HERPAB	HERPAB	Specimen will be tested for HSV IgG type 1 and type 2 as of June 14, 2019 If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred.
Herpes IgM	Blood	Red or GOLD	5 mL	М	10 days	LAB	HERPM	HERPM	No longer available as of June 14, 2019.
Herpes Simplex PCR	Swab	Viral Transport Swab		М	72 hours	MIC	HERPPCR	HERPCR	Swab vesicle fluid. Referred. UTM transport media available from Microbiology. Specimen stored at 2-8°C. If transported, store at 2-8°C if sending same day or Freeze at -70°C
Herpes Zoster IgG (Varciella)	Blood	Red or GOLD	5 mL	М	7 days	LAB	VZ	VZG	Previous infection/immune status. If transported, separate serum from clot and serum. 2-8°C if sending same day or Freeze at -70°C. Referred.
Herpes Zoster IgM (Varciella)	Blood	Red or GOLD	5 mL	М	10 days	LAB	VZM	VZM	Recent infection If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred.
Histamine	Blood	Lavender, on ice after draw	4 mL	С	15 Days	LAB	HIST	HIST	Collect sample and place on ice, deliver to Chemistry immediately. If transported, separate at 4°C within 20 minutes of collection and freeze immediately. Referred – 1.0 mL frozen.
Histoplasmosis Serology	Blood	Red or GOLD	5 mL	М	2 weeks	LAB	HISTAB	HISTAB	If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred.
HIT (Heparin Induced Thrombocytopenia	Blood	Red and Blue	2X6 mL and 3X2.7 mL	Н	5 Days	LAB	AHEP	AHEP	Refer to Anti-Heparin Antibody (AHEP)
Hitachi 12 Profile	Blood	Light Green	1 mL	С	< 24 Hours	LAB	ніт	HIT	Specimen must be delivered to the lab within 2 hours; otherwise, centrifuge specimen within 2 hours of collection, store upright at 4°C. 8 hour fast preferred. When this is not possible, it should be noted on requisition. Avoid hemolysis. This is a <b>health screening profile</b> and includes: Glucose, Creatinine, Urate, Calcium, Alkaline Phosphatase, LDH, Cholesterol, Total Protein, ALT, Sodium, Potassium and Chloride.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
HIV =>18 months old	Blood	Red or GOLD	5 mL	М	48 hours	LAB	HIV	HIV	Screening test for HIV p24 Antigen and Antibody Type 1 and 2 infection. If transported, separate serum from clot and send serum. 2-8°C if sending within 72 hours or Freeze at -20°C. <18 months old order HIVPCR
HIV Genotype	Blood	Lavender x 2	3 mL x 2	М	4 weeks	LAB	HIVGENE	HIVGENE	If transported, separate plasma and send frozen on dry ice. Referred.
HIV PCR (Neonates only) <18 months old	Blood	Lavender x 1	3 mL x 1	М	2 weeks	LAB	HIVPCR	PCRHIV	Draw blood on Monday to Wednesday only. Deliver immediately. If transported, draw blood just before shipping and send Whole Blood. Do not freeze. Referred.
HIV Viral Load	Blood	Lavender x 2	3 mL x 2	М	10 days	LAB	HIVVLOAD	HIVLOAD	Deliver immediately. Specimen must be delivered to the lab within 6 hours; otherwise specimen must be centrifuged at 1100 g for 20 minutes, separate plasma from cells immediately and store at -70 °C. If transported, send plasma frozen <b>on dry ice</b> . Referred.
HLA Antibody Testing (Cytotoxic Antibodies) (Transplant Antibodies)	Blood	Red	7 mL	С	5 days	LAB	TRANSBBK	TR	A Nova Scotia Health Authority Histocompatibility Laboratory requisition must be completed by the ordering site and it must be signed by the phlebotomist. These requisitions are available from the website of the reference laboratory ( <u>www.cdha.nshealth.ca/programsandservices/</u> ). Serum must be separated from the cells within 2 hours of collection and stored at 4°C. Referred.
HLA B27	Blood	Lavender	4 mL	I	8 Days	LAB	HLAB27	HLAB27	Draw Monday-Thursday before 1200 hrs. Maintain at Room Temperature: the blood MUST NOT be chilled. Specimens must be delivered to the DECRH Haematology lab before 1300 hrs on the day of collection. Mark box "STAT LAB-FLOW CYTOMETRY". If specimens cannot be transported for receipt @ DECRH before 1300 hrs, they can be sent directly to SJRH by Maritime Bus or Purolator. Please notify DECRH Haematology-Flow Cytometry when referring samples directly to SJRH.
HLA B5701	Blood	Lavender x 1		М	3 weeks	LAB	HLAB5701	HLAB5701	If transported store at 2-8°C if sending same day or Freeze at -70°C. Referred.
HLA Crossmatch*	Blood	4 Yellow (ACD) and 1 Red	6 mL x 4 and 6 mL x 1	С	45 Days	LAB	LYMXM	LYMPH-XM or HLA-XM	Draw Monday – Wednesday morning only. Must arrive at DECRH lab on same day of collection. DO NOT centrifuge tubes. Store and send at room temperature. A Nova Scotia Health Authority Histocompatibility Laboratory requisition must be completed by the ordering site and it must be signed by the phlebotomist. These requisitions are available from the website of the reference laboratory (www.cdha.nshealth.ca/programsandservices/). Referred. * Transplant coordinator at SJRH arranges appointments.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
HLA Typing	Blood	Lavender x 2	4 mL x 2	С	14 Days	LAB	HLA-DR or HLACOMP	HLA-DR or HLACOMP	Specimens may be collected Monday – Friday. Store and send at room temperature. A Nova Scotia Health Authority Histocompatibility Laboratory requisition must be completed by the ordering site and it must be signed by the phlebotomist. These requisitions are available from the website of the reference laboratory (www.cdha.nshealth.ca/programsandservices/). Referred – Whole blood.
Homocysteine	Blood	Lavender (pre-chilled)	4 mL	С	8 Days	LAB	HOMOCYSTE	HOMOCYSTE	Collection following 8 hour fast is preferred but not mandatory. Collect in chilled tube and place on ice. Deliver on ice to Lab immediately. If transported, separate plasma within 60 minutes of collection. Store and transport at 4 °C. (Plasma stability - Frozen (preferred): 10 months; refrigerated (Acceptable): 4 weeks. If not received at DECRH within 48 hours of collection plasma should be frozen.
Homocystine	Urine								Test no longer available
Homogentisic Acid									Test no longer available.
Homovanillic Acid	Urine	Large plastic bottle with HCL	Complete 24 hr output	С	15 Days	LAB	HVA	HVA	Collect over 25 mL of 6N HCL. The final pH must be maintained from 2-4. If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot after adjusting pH to <3 with HCl if needed. Referred - 10 mL urine aliquot
HTLV I/II	Blood	Red or GOLD	5 mL	М	10 days	LAB	HTLV	HTLV I	If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred.
HTLV I/II PCR	Blood	Lavender x 2	3 mL x 2	М	3 weeks	LAB	HTLVPCR	PCRHTLV	Draw blood on Monday to Wednesday only. Deliver immediately. If transported, draw blood just before shipping and send Whole Blood. Do not freeze. Referred.
Humira™ (adalimumab)	Blood	Red	6 mL	С	20 Days	LAB	ADAL	ADAL	Refer to Adalimumab
	a)	Screw-cap jar	1 mL	С	20 Days		URINE-DILA	DILA-U	a) Random specimen. Referred.
Hydromorphone (Dilaudid)	b) Blood	Lavender x 2	4 mL x 2	С	20 Days	LAB	DILAUDID	DILA	b) Deliver to Chemistry immediately. Separate plasma ASAP. Referred - 2 mL plasma
lbuprofen (Motrin)	Blood	Red	6 mL	С	5 Days	LAB	IBU	IBU	Specimen must be delivered to the lab within 2 hours; otherwise, serum must be separated from the cells within 2 hours of collection and stored at 4°C. Referred - 1 mL serum frozen
IgA	Blood	Light Green	1 mL	С	< 24 Hours	LAB	IGA	IGA	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C.

Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
lgD	Blood	GOLD	5 mL	С	20 Days	LAB	IGD	IGD	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Indicate date of birth. Referred - 1 mL Serum frozen
IgE	Blood	GOLD	5 mL	С	24-48 Hours	LAB	IGE	IGE	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Referred – 1 mL serum.
lgG	Blood	Light Green	1 mL	С	< 24 Hours	LAB	IGG	IGG	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. This is not the order for viral investigation. See specific virus.
lgG-CSF	Spinal Fluid	Sterile Container		С	24-48 Hours	LAB		IGG-CSF	Specimen must be delivered to lab immediately. If transported centrifuge specimen; separate, store and ship supernatant at 4°C. Freeze supernatant if it will not reach DECRH within 48 hours. Please note if oligoclonal banding is requested IgG-CSF is included.
IgG Subclasses	Blood	GOLD	5 mL	С	10 Days	LAB	IGGSUB	IGGSUB	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Please ensure request is not being confused with immunoglobulins. Referred - 1 mL Serum
lgM	Blood	Light Green	1 mL	С	< 24 Hours	LAB	IGM	IGM	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. This is not the order for viral investigation. See specific virus.
IGRA	See Interferor	n Gamma Release	e Assay for La	atent TB					
Imipramine (Tofranil)	Blood	Red X 2	6 mL X 2	С	10 Days	LAB	IMIP	IMIP	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Collect within 1 hour prior to next dose or at least 12 hours after last dose. Referred – 3 mL serum.
Immune Complexes									Refer to C1Q Binding Assay
Immuno Protein C	Blood	Blue x 2 (Sodium Citrate)	2.7 mL x 2	С	9 Days	LAB	IPC	IPC	Deliver to Chemistry immediately. Separate plasma ASAP and centrifuge plasma a second time. Freeze in 2 aliquots at -70°C ASAP. Referred - 2 aliquots Plasma frozen

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Immunocompetence Profile	Blood	Lavender x 2	3 mL x 2	I	Stat 24 hr Routine 48 hr	LAB	ICP	ICP	Draw Monday-Thursday before 1200 hrs. Maintain at Room Temperature – specimen must not be chilled. Specimens must be delivered to the DECRH Haematology lab before 1300 hrs on the day of collection. Mark box "STAT LAB-FLOW CYTOMETRY". If specimens cannot be transported for receipt @ DECRH before 1300 hrs, they can be sent directly to TMH by Maritime Bus or Purolator. Please notify DECRH Haematology-Flow Cytometry when referring samples directly to The Moncton Hospital
Immunoelectrophoresis (Immunofixation)	a) Blood b) Urine c) Urine	GOLD Screw-cap jar Large plastic bottle	2 mL 30 mL Complete 24 hr output	C C C	7 Days 7 Days 7 Days	LAB	IEP-U IFE-U	IFE-U IFE-U IFE-U	<ul> <li>a) Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C.</li> <li>b) Random collection</li> <li>c) If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 30 mL aliquot.</li> <li>Please see <u>Utilization</u> rules</li> </ul>
Immunofluorescent Antibody Screen (IFA Screen)									Test has been renamed. Please refer to cytoplasmic antibodies
Immunoglobulins (IgG, IgA, IgM)	Blood	Light Green	1 mL	С	< 24 Hours	LAB	IGGMA	IGGMA	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. This Profile includes: IgG, IgM and IgA. These tests may be ordered separately.
Immunophenotype-flow cytometry									Please refer to Leukemia / Lymphoma Profile
Incision Swab	Swab	Routine Swab		М	72 hours	MIC	INC	SUR	Swab <b>only</b> the infected area. Bacteria from the surrounding area prevent accurate interpretation of the results. Indicate source of swab. Specimen store at room temperature.
Influenza A+ B & Respiratory syncytial virus PCR	Naso- pharynx, Throat/Nose	Must be collected in UTM (Viral Transport Media)		Μ	48 hours (seasonal)	MIC	INFLU	INFA	Contact the Microbiology Department for UTM collection containers. Referred. Specimen stored at 2-8°C.
Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
---	----------	---	--------	------------	--------------------	----------------	----------------	-----------------	---
Insect	Insect	Screw-cap jar		М	48 hours	MIC	INS	INS	Place a few drops of water in the jar. Specimen stored at room temperature.
Insulin	Blood	GOLD	5 mL	С	24-48 Hours	LAB	IN	INS	8 hour fast required. Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection and store at 4°C. If the specimen will not arrive at DECH the same day as collected, separate and freeze. <b>There must be no hemolysis</b> . Samples should not be taken from patients receiving therapy with high biotin doses until at least 8 hrs following the last biotin administration. Referred - 1 mL Serum frozen
Insulin Antibodies	Blood	GOLD	5 mL	С	10 Days	LAB	INSAB	INSAB	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Fasting not required. Insulin does not need to be withheld. Referred - 1 mL serum frozen
Insulin like Growth Factor1 (Somatomedin C)	Blood	GOLD	5 mL	С	12 Days	LAB	IGF-1	SOMAT	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum and store 4°C. Referred – 1 mL Serum frozen
Insulin Tolerance Test				С					Call Medical Day Care at DECRH for testing information.
Insulin-like Growth Factor Binding Protein 3	Blood	GOLD	6 mL	С	20 Days	LAB	IGF-BP3	IGFBP3	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store, and send frozen. Referred – 1 mL Serum frozen
Interferon Gamma Release Assay for Latent TB (IGRA)	Blood	* Special 4 tube set in CIU		М	2 weeks		QUANTIFER	IGRA	Contact CIU for Monday –Thursday bookings. Referred. Patient information form no longer required.
Intra-uterine device (IUD)	IUD	IUD in sterile screw cap jar		М	14 days	MIC	IUD	IUD	Refrigerate until delivered to laboratory.
Intrinsic Factor Antibodies (Anti-Intrinsic Factor)	Blood	GOLD	5 mL	С	35 Days	LAB	AIFA	AIFA	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. <b>Sample must be frozen if it will not reach DECRH within 48 hours.</b> Referred – 1.5 mL frozen Serum.
lonized Calcium	Blood	GOLD only (may be done on a blood gas specimen)	Full	С	< 24 Hours	LAB	ICA	ICA	Collect sample within 1 minute after applying tourniquet. Draw without stasis. Patient should do no forearm exercise (fist clinching) during blood collection. A small tube is sufficient volume, but the tube must be allowed to draw to complete vacuum. <b>Keep tube sealed until analysis</b> . Send to Chemistry ASAP and centrifuge specimen within 1 hour of collection. DO NOT remove stopper. Store at 4 °C. Send centrifuged, unopened tube on cold pack within 72 hours.

Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Iron	a) Blood b) Tissue	Light Green Sterile, orange-top screw cap jar	1 mL	C C	< 24 Hours 20 Days	LAB	IRON IRON-T	IRON IRON-T	<ul> <li>a) Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. 8-hour fast is preferable, non-fasting specimens will be accepted. Includes iron, iron binding capacity, transferrin, and transferrin saturation.</li> <li>b) 0.5 mm x 5 mm size from a needle biopsy. A larger section is needed from a wedge biopsy. Place in orange top screw cap jar. Note the type of tissue, suspected diagnosis and clinical information. Referred - tissue</li> </ul>
Iron Binding Capacity, Total (TIBC)	Blood	Light Green	1 mL	С	< 24 Hours	LAB	TIBC	IRON	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Includes Iron, iron binding capacity, transferrin, and transferrin saturation. 8 hour fast is preferable, non-fasting specimens will be accepted.
Islet Cell Antibody (Anti-Pancreatic Islet)	Blood	GOLD	5 mL	С	12 Days	LAB	ICAB	ICAB	Specimen must be delivered to lab within 2 hrs.; otherwise, centrifuge specimen within 2 hrs. of collection. Store upright at 2-8°C. Referred - 1 mL Serum
Isopropyl Alcohol (Isopropanol) (Alcohol, Isopropyl)	Blood	Light Green	Full	с	< 24 Hours	LAB	ALCEG	ALCEG	Note yellow, red, grey, lavender, and Barricor tubes are also acceptable. Do not use any type of alcohol to disinfect skin. Collection tube must be allowed to draw to complete vacuum. Invert tube several times to mix. Keep tube sealed until analysis. Medico legal specimens should be delivered directly to a police officer, not to the laboratory. If transported, do not centrifuge. Serum osmolality, Glucose, Urea and Sodium (2 mL blood in a Gold tube is required) should also be requested.
IV Catheter tip	Тір	Tip in Sterile Screw-cap jar		М	72 hours	MIC	IV	IV	Deliver immediately to laboratory. If transported, send at. 2-8°C. Refrigerate.
Karyotyping (Chromosome Analysis)									Refer to Chromosome Analysis
Keppra™	Blood	Red	6mL	С	10 Days	LAB	KEPPRA	KEPPRA	Refer to Levetiracetam
Ketamine (Ketalar)	Urine	Screw-cap jar	5 mL	С	12 Days			KETA-U	Please note this is a "date rape" drug. Referred - 5 mL Urine aliquot
Ketones (see Beta- hydroxybutyrate)									Ketones no longer performed, refer to Beta-hydroxybutyrate
Kleihauer Betke	Blood	Lavender	3 mL	ТМ	Stat 1.5 hr Asap 2 hr Routine 24 hr		КВ	BBKB PROFILE	<b>DO NOT</b> separate plasma from cells. If transported send within 24 hours at 2-8°C Only performed at the DECRH

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Lactic Acid (Lactate)	a) Blood b) Spinal Fluid c) Ice-Hep Sy	Gray (Pre-chilled) Sterile Screw-cap tube (Pre- chilled) Blood Gas collection kit	4 mL 0.5 mL 3 mL (minimu m 1 mL)	C C	STAT ≤45 Minutes Routine <24 Hours	LAB	LA LA-CSF LAC BG	LACTATE LA-CSF LAC BG	<ul> <li>Contact laboratory before drawing specimen except if collecting during the day shift Monday to Friday.</li> <li>a) Collection tube must be at least ½ full to avoid inhibition by excess fluoride. Avoid the use of a tourniquet. Place on ice and deliver to Chemistry within 10 minutes. The plasma must be removed within 15 minutes of collection. If transported, send Plasma frozen.</li> <li>b) Deliver tube # 1 of the three tubes collected immediately to Chemistry. If transported, send Spinal Fluid frozen.</li> <li>c) Collect blood in a heparinized syringe. Expel all air. Rotate to mix. Remove needle, cap syringe securely, label &amp; place in crushed ice. To retain specimen label integrity, place specimen in a plastic bag prior to placing on ice. Deliver on ice to Chemistry immediately. The specimen must be analyzed within 30 minutes of collection.</li> </ul>
Lactose Tolerance	Blood	Gray	4 mL for each specimen	С	< 24 Hours	LAB	LTT	LACTOSE	The patient must fast for 8 hour prior to and during the test. This order includes 0, 30, 45, 60 and 90 minute specimens. See Chemistry Section in this manual for additional information.
LAL Endotoxin	Water	Sterile Screw-cap jar	20 mL	М	24 hours	MIC	WATERLAL	LAL	Deliver <b>immediately to the laboratory</b> . If transported, send 2-8°C.
Lamictal (Lamotrigine)	Blood	Red	6 mL	С	8 Days	LAB	LAMI	LAMI	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Draw trough prior to next dose. Referred – 1.5 mL Serum
Largactil (Chlorpromazine)	Blood	Red	6 mL	С	13 Days	LAB	LARG	CPZ	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Draw trough prior to next dose. Referred – 1.5 mL Serum

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
	a) Blood	Light Green	1 mL	С	< 24 Hours		LDH	LDH	a) Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C.
LDH (Lactate Debydrogenase)	b) Body Fluid	Dark Green	2 mL	С	< 24 Hours	LAB	LDH-F	LDH-F	b) Invert tube several times to mix. Indicate origin of fluid.
	c) Spinal Fluid	Sterile Screw-cap tube	0.5 mL	С	< 24 Hours		LDH-CSF	LDH-CSF	c) Deliver tube # 1 of the three tubes collected to Chemistry immediately.
LDL Cholesterol - Direct	Blood	Light Green	1 mL	С	< 24 Hours	LAB	LDL-D	LDL-D	Specimen must be delivered to lab within 2 hours; otherwise, centrifuge specimen within 2 hours of collection, store upright at 4°C. Do not confuse this test with LDL Cholesterol (calculated) that is part of a Lipid Profile.
	a) Blood	Royal Blue EDTA	6 mL	С	15 Days		LEAD	LEAD	a) Do not centrifuge. Store and send cold. Referred - 6 mL Whole Blood
Lead	b) Urine	Heavy metal free large plastic bottle	Complete 24 hr output	С	15 Days	LAB	LEAD-24H	LEAD-24H	b) If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot. Remember to measure 24 hr urine using an acid washed cylinder and transfer aliquot to a metal-free polypropylene vial. Referred
Legionella Culture: - Refer	Sputum or ET, bronchial wash or lavage, Pleural Fluid	Sterile Screw-cap jar		М	10 days	MIC	LEGR	LEGR	Deliver <b>immediately to the laboratory</b> . If transported, send 2-8°C. Referred.
Legionella: Urine antigen	Urine	Sterile Screw-cap jar	5 mL	М	7 days	MIC	LEGAG	LEGAG	Specimen refrigerated. Referred.
Leptospira PCR	Urine or	Sterile Screw-cap jar or	50 mL or	М	3 weeks	LAB	PCRMISC	PCRMISC	Contact the Microbiology Laboratory before collection. Collect only on Monday-Wednesday.
	Whole Blood	EDTA	5 mL						See below for serology.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Leptospira Serology	Blood	Red	2 mL	М	3-4 weeks	LAB	SEROL	SEROL	If transported, separate serum from clot and send serum. 2-8°c up to 3 days or >3 days freeze at -70°C . Detection of IgM antibodies
Leukemia/Lymphoma Profile	Blood	Lavender	4 mL	I	Stat 24 hr Routine 48 hr	LAB	LPRO	FLOW-BLD	Draw Monday-Thursday before 1200 hrs. Maintain at Room Temperature: the blood MUST NOT be chilled. Specimens must be delivered to the DECRH Haematology lab before 1300 hrs on the day of collection. Mark box "STAT LAB-FLOW CYTOMETRY".
									can be sent directly to SJRH by Maritime Bus or Purolator. Please notify DECRH Haematology-Flow Cytometry when referring samples directly to SJRH.
Leukocyte Acid Phosphatase									Test no longer available
Leukocyte Alkaline Phosphatase									Test no longer available
Levetiracetam	Blood	Red	6 mL	С	10 Days	LAB	KEPPRA	KEPPRA	Draw trough specimen prior to next dose. Specimen must be delivered to the lab within 2 hours; otherwise, serum must be separated from the cells within 2 hours of collection and stored at 4 °C. Referred - 1 mL serum at 4°C.
LHRH Stimulation Test				С	24-48 hours				Call Medical Day Care at DECRH for testing information.
Librium (Chlordiazepoxide)	Blood	Red	6 mL	С	12 Days	LAB	LIB	CDZ	Collect trough specimen prior to next dose. Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store and send frozen. Referred - 2 mL serum frozen
Lice	Lice	Sterile Screw-cap jar		М	48 hours	MIC	INS	INS	Place a few drops of water in the jar. Specimen stored at room temperature.
Lipid Emulsion Test	Testing no lo	onger performed	as of June 2	0, 2019					
Lipid Profile	Blood	Light Green	1 mL	С	< 24 Hours	LAB	LIPIDP	LIPIDP	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. 12-14 hour fast required. This profile includes: Cholesterol, Triglyceride, HDL Cholesterol, Chol/HDL ratio and LDL Cholesterol (calculated). Please see <u>Utilization</u> rules

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Lithium	Blood	Red	1 mL	С	< 24 Hours	LAB	LI	LI	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Avoid Hemolysis. Draw 12 hours after last dose. Do not collect in tubes containing Lithium Heparin. See Chemistry Section in this manual for additional information.
Liver Kidney Microsomal Antibody	Blood	GOLD	5 mL	С	15 Days	LAB	LIVERKIDNY	LKM AB	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Referred – 1.5 mL Serum
Long Chain Fatty Acids	Blood	GOLD	5 mL	С	20 Days	LAB	LCFA	LCFA	8 hour fast required. Deliver to Chemistry immediately. Separate serum from clot and freeze ASAP. Referred – 1.5 mL Serum frozen
Lorazepam (Ativan)	Blood	Red	6 mL	С	12 Days	LAB	LOR	LOR	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Draw trough prior to next dose. Referred – 1.5 mL Serum
Ludiomil (Maprotiline)	Blood	Red	6 mL	С	10 Days	LAB	MAP	MAP	Draw prior to AM dose or 10-12 hours after last dose. Deliver to Chemistry immediately. Separate serum from clot ASAP. Referred – 1.5 mL Serum

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Lupus Inhibitor Profile Includes: - Anti-Cardiolipin Antibody (ACA) - Prothrombin Time (PT/INR) - Activated Partial Thromboplastin time (APTT) - 50:50 Mix - Lupus Inhibitor Screen (DVVT) - Platelet Neutralization Procedure (PNP)	Blood	Gold or Red and Blue (Sodium Citrate) x 3	5 mL and 2.7 mL Exactly in each tube	H	21 days	LAB	LUP	LUP	<ul> <li>Avoid hemolysis. Separate serum within 2 hours of collection. If specimen cannot be transported to DECRH within 24 hours of collection, centrifuge and separate serum as follows:</li> <li>Red or Gold- If transported, Gold tube only requires one spin. Red tube requires two spins to ensure no red cells are left in the serum. <ul> <li>1st spin: Spin specimens in the centrifuge, after 1st spin is complete, remove tubes from centrifuge and transfer 1st spin serum to a separate labeled 12x75 plastic tube.</li> <li>2nd spin: Cap the labelled 12x75 tubes and re-spin serum, after 2nd spin is complete, carefully remove tubes from centrifuge, without disrupting button at bottom of tube.</li> <li>Remove serum, leaving sediment in bottom of tube. Transfer directly to labeled 12x75 plastic tube. </li> <li>Send 1 aliquot of 0.5 – 1.0 mL at 4°C</li> </ul> Blue x 3 - Deliver to the lab within 2 hours of collection. If transported, platelet poor plasma (count &lt; 10) must be achieved with the following procedure: <ol> <li>1<sup>st</sup> spin: Spin specimens in the centrifuge, after 1<sup>st</sup> spin is complete, remove blue tubes from centrifuge and transfer 1<sup>st</sup> spin is complete, remove blue tubes from centrifuge, without disrupting platelets at bottom of tube. 2nd spin: Cap the 12x75 tubes and re-spin plasma, after 2<sup>nd</sup> spin is complete, remove blue tubes from centrifuge, without disrupting platelets at bottom of tube. 3. Carefully remove platelet poor plasma, leaving sediment (containing platelets) in bottom of tube. 3. Carefully remove platelet poor plasma, leaving sediment (containing platelets) in bottom of tube. 4. Send frozen in 3 aliquots of 1.5-2 mL each. Referred</li></ol></li></ul>
Luteinizing Hormone (LH)	Blood	Light Green	1 mL	С	<24 Hours	LAB	LH	LH	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Lyme Serology (IgG/IgM)	Blood	Red or GOLD	5 mL	М	7 days	LAB	LYME	LYME	Deliver <b>immediately to the laboratory</b> . If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C.
Lysozyme (Muramidase)	Blood	Lavender x 2	4 mL x 2	С	10 Days	LAB	LYS	LYS	Specimen must be delivered to the lab within 2 hours; otherwise, plasma must be separated from the cells within 2 hours of collection. Store and send frozen. Referred - 2 mL Plasma frozen
Macroprolactin	Blood	Gold	7 mL	С	15 Days	LAB	MACROPROL	MACROPROL	Specimen must be delivered to the lab within 2 hours; otherwise, serum must be separated from the cells within 2 hours of collection into 2 separate aliquots. Store and send frozen. Referred - 2 mL serum frozen in 2 aliquots
Magnesium	a) Blood b) Urine	Light Green Large plastic bottle	1 mL Complete 24 hr output	C C	< 24 Hours < 24 Hours	LAB	MG MG-24H	MG MG-24h	<ul> <li>a) Specimen must be delivered to lab within 2 hours; otherwise, centrifuge specimen within 2 hours of collection, store upright at 4°C.</li> <li>b) If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot.</li> </ul>
Malarial Parasites	Blood	Lavender	3 mL	Н	Stat Rapid Test 1 hr Routine Rapid Test 24 hr Smears 48 hr	LAB	MAL	MAL	Preferred sample collection - during fever. Indicate endemic site on requisition. Deliver to the lab immediately. If transported, the specimen must be received at DECRH the same day as collected. Send Whole Blood with unfixed thick and thin smears made within one hour of collection. Contact Haematology for transport instructions.
Manganese	Blood	Royal Blue EDTA	6 mL	С	15 Days	LAB	MANG	MANG	Do not centrifuge. Store and send cold. Referred - 6 mL whole blood referred. There must be <b>no hemolysis</b>
Maprotiline (Ludiomil)	Blood	Red	6 mL	С	10 Days	LAB	MAP	MAP	Draw prior to AM dose or 10-12 hours after last dose. Deliver to Chemistry immediately. Separate serum from clot ASAP. Referred – 1.5 mL Serum
Maternal Serum Screen (Alpha Fetoprotein, Maternal)	Blood	Gold or red	7 mL	CG	14 Days	LAB	MATERNLAFP	MSAFP	Specimen must be delivered to the lab within 2 hours; otherwise, serum must be separated from the cells within 2 hours of collection and stored at 4°C. If transported, serum must be frozen if not received at DECRH within 48 hours of collection. For early screening pregnancy should be at least 9 weeks and no more than 13 weeks gestation for interpretation of results. For second trimester screening pregnancy should be 15 weeks to 20 6/7 weeks for interpretation of results. A properly completed requisition MUST arrive with, or in advance of, the specimen. Referred

Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use Laboratory User Manual Version 40.0 Page 188 of 242 Effective Date: January 24, 2022

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Measles PCR Urine	Urine	Sterile container	50 ml minimum urine	Μ	7 days	MIC	MEASPCRUR	MEASPCRUR	Urine must be received in the lab within 24 hours. If delayed, centrifuge at 500G for 15 minutes and resuspend the sediment in 2 ml of Viral Transport Media (UTM). Freeze at -70°C and send on dry ice. Referred.
Measles PCR swabs	Throat, NPA	Viral Transport Media (UTM)		М	7 days	MIC	MEASPCRSW	MEASPCRSW	Stored refrigerated. If transported, 2-8°C if sending same day or Freeze at -70°C. Referred.
Measles Screen (Red Rash Screen)	Blood	Red or GOLD	5 mL	Μ	7 days			MEAS	Includes serology for IgM antibodies to Measles, Rubella, and Parvovirus. Collect on or after 3 <sup>rd</sup> day after onset of rash. Include dates of onset of fever and rash on requisition. If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred - Measles IgM and Parvovirus.
Measles Serology IgG	Blood	Red or GOLD	5 mL	М	7 days	LAB	MEASG	MEASG	(Previous infection / Immune Status) If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred.
Measles Serology IgM	Blood	Red or GOLD	5 mL	М	7 days	LAB	MEASM	MEASM	(Recent Infection) If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred.
Mellaril (Thioradzine)	Blood	Red	6 mL	С	7 Days			THIOR	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Referred – 1.5 mL Serum
Meperidine (Demerol)	a) Blood b) Urine	Red Screw-cap jar	6 mL 10 mL	с с	11 Days	LAB	MEP-B MEP-U	MEP-B MEP-U	<ul> <li>a) Specimen must be delivered to the lab within 2 hours; otherwise, centrifuge specimen, remove serum within 2 hours of collection and store at 4°C. Referred – 1.5 mL Serum</li> <li>b) Referred - 10 mL Urine aliquot</li> </ul>
Meprobamate (Equanil)	a) Blood b) Urine	Red Screw-cap jar	6 mL 5 mL	C C	8 Days	LAB	MEPRO-B MEPRO-U	MEPRO-B MEPRO-U	<ul> <li>a) Specimen must be delivered to lab within 2 hours; otherwise, centrifuge specimen, remove serum within 2 hours of collection and store at 4°C. Referred – 3 mL Serum.</li> <li>b) Referred - 5 mL Urine aliquot</li> </ul>

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
	a) Blood	Royal Blue EDTA Heavy metal	6 mL Complete	C C	/		MER MER-24H	MER MER-24H	<ul> <li>a) Do not centrifuge. Store and send cold. Referred - 6 mL Whole Blood</li> <li>b) Refer to Diet/Drug Restriction form HHN-0840 for patient restrictions.</li> </ul>
Mercury		free large plastic bottle	24 hr output	0	15 Days	LAB			If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot. Measure 24 hour urine using an acid washed cylinder and transfer aliquot to a metal-free polypropylene vial. Referred
Metabolic Newborn Screen	Blood	Blood Blotter		С	14 Days	LAB	MNS	MNS	Draw blood by heel stick and thoroughly saturate the 4 areas on the blood blotter. Fill out attached Newborn Screening Card. Referred - allow blotter to dry for 3 hours and send at Room Temperature.
Metabolic Screen	Urine	Screw-cap jar	5 mL	С	14 Days	LAB	METAB	AA-S	Early morning specimen. Deliver to Chemistry immediately. For interpretation, provide date of birth, special diet and clinical indicators. Referred - 5 mL Urine aliquot frozen
Metanephrines	a) Blood b) Urine	Lavender Large plastic bottle with HCI	4 mL Complete 24-hour output	C	15 Days 15 Days	LAB	META META-24H	META META-24H	<ul> <li>a) 8-hour fast required. Patient must abstain from smoking tobacco for at least 4 hours prior to collection. Patient should be at rest in supine position during collection. Specimen must be delivered to lab within 2 hours; otherwise centrifuge within 2 hours of collection, remove plasma and freeze. Referred – 1 mL plasma frozen.</li> <li>b) Refer to <u>Diet/Drug Restriction form HHN-0840</u> for patient restrictions. Collect urine in a container with 25 mL of 6N HCI. The final pH must be maintained from 2-4. If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot. Referred – 10 mL aliquot.</li> </ul>
Methadone Quantitative Profile									Test no longer available
Methadone	Urine	Screw-cap jar	5 mL	С	< 24 Hours	LAB	URINE-MET1	MTD-U	Random specimen. This is a semi-quantitative test. If transported, urine must be sent frozen if not received at DECRH within 48 hours of collection.
Methamphetamine	Urine	Screw-cap jar	5 mL	С	< 24 Hours	LAB	URINE-MAMP	METAMP	Random specimen. This is a qualitative result.
Methemalbumin									Test no longer routinely available
Methemoglobin	Blood	Dark Green or Blood Gas syringe	2 mL or 1 mL	С	< 24 Hours	LAB	METHB BG	METHB	Dark Green tube - Do not centrifuge. Blood Gas syringe - Deliver on ice to Chemistry immediately. Capillary - call Chemistry regarding this order

Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Methotrexate	Blood	Red	6 mL	С	5 Days	LAB	METHX	METHX	Protect from light. Deliver to Chemistry immediately. Indicate date and time of last medication. Separate serum from clot and freeze ASAP. Referred - 2 mL Serum (pediatric min 0.5 ml)
Methsuximide (Celontin)									Test no longer routinely available
Methyl Alcohol (Methanol) Alcohol, Methyl)	Blood	Light Green	Full	С	< 24 Hours	LAB	ALCEG	ALCEG	Note yellow, red, grey, lavender, and Barricor tubes are also acceptable. Do not use any type of alcohol to disinfect skin. Collection tube must be allowed to draw to complete vacuum. Invert tube several times to mix. Keep tube sealed until analysis. Medico legal specimens should be delivered directly to a police officer, not to the laboratory. If transported, do not centrifuge. Serum osmolality, Glucose, Urea and Sodium (2 mL blood in a Gold tube is required) should also be requested.
Methylmalonic Acid	a) Blood b) Urine	Dark Green Screw-cap jar	4 mL x 1 10 mL	C C	7 Days 7 Days	LAB	METHYLMA	METHYLMA METHYLMA-U	<ul> <li>a) Specimen must be delivered to lab within 2 hours; otherwise, centrifuge specimen within 2 hours of collection, remove plasma immediately and store 4°C. Referred – 1.5 mL Plasma frozen.</li> <li>b) Instruct patient to collect second void following overnight fast. Deliver to Chemistry immediately. Freeze urine ASAP. Referred - 4 mL Urine aliquot frozen.</li> </ul>
Methylphenidate (Ritalin)	a) Blood b) Urine	Red Screw-cap jar	6 mL 10 mL	C C	15 Days 15 Days	LAB	METHY METHY-U	METHY METHY-U	<ul> <li>a) Specimen must be delivered to the lab immediately. Centrifuge specimen and freeze serum ASAP.</li> <li>Referred - 2 mL serum frozen</li> <li>b) Random urine specimen. Referred - 10 mL aliquot</li> </ul>
	a) Urine	Screw-cap jar	10 mL	С	< 24 Hours		MICROALB-R	MICROALB-R	a) Random specimen. If transported, send a 10 mL Urine aliquot.
Microalbumin	b) Urine	Large plastic bottle	Complete 24 hr output	С	< 24 Hours	LAB	MICROALB24	MICROALB-24H	b) If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot.
Microfilariae	Blood	Lavender	3 mL	Н	Stat Preliminary Report 4 hr Routine 48 hr	LAB	MICROF	MICROF	Deliver to the lab immediately.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Microscopic Examination	a) Body Fluid b) Urine	Dark Green Screw-cap jar	2 mL 15 mL	C C	<24 Hours	LAB	CRYS-F U/A	CRYS-F U/A	<ul> <li>a) Invert tube several times to mix. Indicate origin of fluid.</li> <li>b) Random specimen. Included with routine urinalysis on special request. If transported, the laboratory must receive the specimen within 4 hours of collection.</li> </ul>
Microscopic, Feces	Testing no lo	nger performed	as of June 2	0, 2019,	microscopic exa	m for pres	sence of fecal fat av	ailable only	
Miscellaneous Culture	Swab	Routine Swab		М			MISC	MISC	For use if the correct test cannot be found. Sufficient information must be supplied to enable the laboratory to re-order the specimen correctly. Specimen stored at room temperature.
Mixing Studies	Blood	Blue (Sodium Citrate) X 2	2.7 mL exactly X 2	Н	21days	LAB	MIX	MIXING STUDIES	<ul> <li>Deliver to the lab within 2 hours of collection. If transported, platelet poor plasma (count &lt; 10) must be achieved with the following procedure: <ol> <li>1<sup>st</sup> spin: Spin specimens in the centrifuge, after 1<sup>st</sup> spin is complete, remove blue tubes from centrifuge and transfer 1<sup>st</sup> spin plasma to a separate labeled 12x75 plastic tube.</li> <li>2<sup>nd</sup> spin: Cap the 12x75 tubes and re-spin plasma, after 2<sup>nd</sup> spin is complete, carefully remove tubes from centrifuge, without disrupting platelets at bottom of tube.</li> <li>Carefully remove platelet poor plasma, leaving sediment (containing platelets) in bottom of tube. Transfer directly to labeled 12x75 plastic tube for the platelet count. Perform and record plt count on label if applicable.</li> <li>Send frozen in 2 aliquots of 2 mL each.</li> </ol> </li> </ul>
MMR testing on Cytology samples	Body fluid or fine needle aspiration	1-CytoLyt container 1-Tissu-Fix container	See collection -pg. 101	CY	Variable, complexity dependent	Nil	Cannot be ordered through Meditech OE	Nil	See collection instructions, page 101

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Mogadon (Nitrazepam)	Blood	Red X 2	6 mL	С	12 Days	LAB	NITRAZ	NITRAZ	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum and freeze immediately. Store and send frozen. Draw trough prior to next dose. Referred – 3 mL Serum frozen
Mononucleosis Test	Blood	Red	6 mL	Н	Stat 4 hr Routine 24 hr	LAB	MONO	MONOTEST	Avoid hemolysis. Separate serum within 2 hours of collection. If specimen cannot be transported to DECRH within 24 hours, centrifuge serum a second time and send serum frozen in 2 aliquots.
Morphine	Urine	Screw-cap jar	5 mL	С	< 24 Hours	LAB	URINE-OPIA	OPIATE-U	Random specimen. This is a semi-quantitative test. If transported, urine must be sent frozen if not received at DECRH within 48 hours of collection.
Motrin (Ibuprofen)	Blood	Red	6 mL	С	5 Days	LAB	МОТ	IBU	Specimen must be delivered to the lab within 2 hours; otherwise, serum must be separated from the cells within 2 hours of collection and stored at 4°C. Referred - 1 mL serum
Mouth & Gum	Swab	Routine Swab		М	24 hours	MIC	MG	MG	Specimen stored at room temperature.
MRSA	Swab	Routine Swab		М	48 hours	MIC	MRSA	MRSA	Indicate site from which specimen was collected. Specimen stored at room temperature.
Mucin	Synovial fluid	Red	2 mL	С	24 Hours	LAB	MUCIN	MUCIN	
Mucopolysaccharides Quantitative	Urine	Screw-cap jar	2 mL	С	12 Days	LAB	MUCOPOLY	MUCOPOLY	Random urine. Early morning preferred. Do not administer low-molecular weight heparin before collection. Store and send refrigerated. Referred - 2 mL aliquot

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Mumps PCR + Genotyping	Saliva Urine Buccal/Thro at Swab CSF	Viral Transport Swab Sterile Screw-cap jar Viral Transport Swab Sterile Tube	1 mL 50 mL 0.5 mL	M M M	8 days	MIC	MUMPCR	MUMPCR	Collect 9 days pre-onset to 14 days post onset. Mix with equal parts of viral transport medium. Refrigerate and deliver to Microbiology within 24 hours. If transported, send at 2-8°C if sending same day or Freeze at -70°C. Referred. Collect within 14 days post onset. Refrigerate and deliver to Microbiology within 24 hours. If specimen cannot be delivered to Microbiology within 24 hours, it must be processed by centrifuging at 2500 x g for 15 minutes, resuspending the sediment in 2 mL of viral transport medium and freezing. Referred. If specimen cannot be delivered to Microbiology within 24 hours, specimen must be frozen at -70°C
Mumps Serology (IgG)	Blood	Red or GOLD	5 mL	М	10 days	LAB	MUMPSIGG	MUMPSIGG	Test is for immune status only. If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred.
Mumps Serology (IgM)	Blood	Red or GOLD	5 mL	М	10 days	LAB	MUMPSIGM	MUMPSIGM	Test is for acute infection only. If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred.
Muramidase (Lysozyme)	Blood	Lavender x 2	4 mL x 2	С	10 Days	LAB	LYS	LYS	Specimen must be delivered to the lab within 2 hours; otherwise, plasma must be separated from the cells within 2 hours of collection. Store and send frozen. Referred - 2 mL Plasma frozen
MuSK Antibody	Blood	Red	6 mL	С	12 Days	LAB	MUSK AB	MUSK AB	Specimen must be delivered to the lab within 2 hours; otherwise, centrifuge specimen within 2 hrs of collection, remove serum immediately. Store and send serum at 4°C. Referred - 1.5 mL Serum.
Mycophenylic Acid (Cellcept)	Blood	Lavender	4 mL	С	12 Days	LAB	МҮСОР	МҮСОР	Specimen must be delivered to the lab within 2 hours; otherwise, plasma must be separated from the cells within 2 hours of collection and stored at 4°C. Referred – 1 mL Plasma frozen
Mycoplasma pneumoniae	Sputum								Test no longer available. See Mycoplasma PCR.
Mycoplasma Serology (IgM)									Testing is no longer available. See Mycoplasma PCR

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Mycoplasma PCR	Throat, NPA or Throat	Viral Transport media (UTM)		М	8 days	MIC	MYCOPCR	MYCOPCR	Specimen may be refrigerated for 48 hours if not delivered immediately. If transported, 2-8°C if sending same day or Freeze at -70°C. Referred.
Mycoplasma/Ureaplasma PCR	Cervical/ Urethral Swab/urine/ tissue Neonate- NPA, BAL, swab	Swabs- Viral transport medium Others-sterile container		М	2 weeks	MIC	MYCOGU	MYCOSW	Viral transport medium available from Microbiology. Freeze at -70°C after collection. If transported, send <b>on dry ice</b> . Referred.
Myelin Associated Glycoptotein IgM Antibody (Anti-MAG)	Blood	Red	6 mL	С	14 Days	LAB	MYEGLYCO	ANTIMAG	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen, separate and store at 4°C. Sample is stable for 7 days at 4°C. Referred - 2 mL serum frozen
Myelin Basic Protein	Spinal Fluid	Sterile Screw-cap tube	2 mL	С	33 Days	LAB	MYELIN	MYELIN	Deliver tube # 1 of the three tubes collected to Chemistry immediately. Referred - 2 ml Spinal Fluid
Myoglobin	Urine	Screw-cap jar	10 mL	с	< 24 Hours	LAB	MYOG-U	MYOG-U	Fresh random specimen. If transported, adjust sample pH to 8.0 - 8.5 with 1N NaOH within 2 hours of collection. If sample cannot be tested within 2 hours of collection alkalized sample needs to be frozen.
Mysoline (Primidone)	Blood	GOLD	6 mL	С	10 Days	LAB	PRIM	PRIM	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Referred – 1.0 mL Serum
N-Acetylprocainamide (Procainamide) (Pronestyl)	Blood	Red	6 mL	С	12 Days	LAB	PROCAM	PROCAM	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum and store at 4°C. Referred - 0.5 mL Serum frozen
Nails: Fungus	Nail Scrapings	Sterile Screw-cap jar		М	smear 3 days final 4 weeks	MIC	MYC	MYC	Specimen stored at room temperature.
Neonatal: Ear	Swab	Routine Swab		М	72 hours	MIC	EARN	EARNEO	Specimen stored at room temperature.
Neonatal: Rectal	Swab	Routine Swab		М	72 hours	MIC	RECN	RECNEO	Specimen stored at room temperature.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Neonatal: Throat	Swab	Routine Swab		М	72 hours	MIC	TSN	TSNEO	Specimen stored at room temperature.
Neonatal: Umbilical	Swab	Routine Swab		М	72 hours	MIC	UMBNEOTSN	UMBNEO	Specimen stored at room temperature.
Neonate: Endotracheal secretions	Secretions	Sterile Screw-cap jar		М	72 hours	MIC	ETT	ETT	Deliver immediately to the laboratory. Specimen refrigerated.
Neuromyelitis Optica Spectrum Disorder profile	Blood	Gold	6 mL	С	14 Days	LAB	NMO AB	NMO AB	This profile includes anti-aquaporin 4 (anti-AQU4) and anti-myelin oligodendrocyte glycoproteins (anti-MOG) and is intended to be ordered by speccialists. Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. If sample will not reach DECRH within 48 hrs serum must be aliquoted and frozen. Referred - 1 mL serum frozen
Neurontin (Gabapentin)	Blood	Red	6 mL	С	11 Days	LAB	GABAP	GABAP	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Draw trough specimen prior to next dose. Referred – 1 mL Serum frozen
Newborn Screen, Metabolic	Blood	Blood Blotter		С	14 Days	LAB	MNS	MNS	Draw blood by heel stick and thouroughly saturate the 4 areas on the blood blotter. Fill out attrached Newborn Screening Card. Referred - allow blotter to dry for 3 hours and send at Room Temperature.
NGS panel on Cytology samples	Body fluid or fine needle aspiration	1-CytoLyt container 1-Tissu-Fix container	See collection -pg. 101	CY	Variable, complexity dependant	Nil	Cannot be ordered through Meditech OE	Nil	This is a referred-out test.
Nitrazepam (Mogadon)	Blood	Red X 2	6 mL	С	11 Days	LAB	NITRAZ	NITRAZ	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum and freeze immediately. Store and send frozen. Draw trough prior to next dose. Referred – 3 mL Serum frozen
Non- Fasting LIPID Profile	Blood	Light Green	1 mL	С	< 24 Hours	LAB	NONLIP	NONLIP	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Fasting not required. This profile includes: Cholesterol, TRIG(non fasting), HDL Cholesterol, Chol/HDL ratio, and Non HDL Cholesterol (calculated). Please see <u>Utilization</u> rules

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Norepinephrine (included with Catecholamines)	a) Blood b) Urine	Lavender x 2 (pre-chilled) Large plastic bottle with HCL	4 mL x 2 Complete 24 hour output	C	15 Days 15 Days	LAB	CATECH CAT-24H	CATECH CAT-24H	<ul> <li>a) Patient must be supine for at least 30 minutes prior to and during collection. Patient must refrain from eating, using tobacco and drinking caffeinated beverages for at least 4 hours prior to collection. Catechol drugs may interfere, including alpha methyldopa, alpha-methyl-para-tyrosine, isoproteronal, dobutamine and carbidopa. Collect in pre-chilled tube, place on ice and deliver to laboratory immediately. If transported, separate plasma within 60 minutes using a cold centrifuge and freeze. Referred - 2 mL Plasma frozen.</li> <li>b) See patient <u>Diet/Drug Restriction form HHN-0840</u></li> <li>Collect urine in a container with 25 mL of 6N HCI. The final pH must be maintained from 2-4. Restrict caffeine, nicotine and alcohol 24 h prior to collection. Discontinue Methyldopa (Aldomet) at least 5 days prior to collection. Other drugs usually do not interfere with this assay. If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 25 mL aliquot.</li> </ul>
Norpace (Rythmodan) (Disopyramide)	Blood	Dark Green	6 mL	С	12 Days	LAB	DISO	DISO	Specimen must be delivered to the lab within 2 hours; otherwise, plasma must be separated from the cells within 2 hours of collection and stored at 4°C. Referred - 1 mL Plasma
Nortriptyline (Aventyl)	Blood	Red	6 mL	С	10 Days	LAB	NORT	NORT	Collect within 1 hour prior to next dose or at least 12 hours after last dose. Deliver to the lab immediately. Separate serum from clot ASAP, store and send at 4°C. Referred – 3 mL Serum
Nose	Swab	Routine Swab		М	72 hours	MIC	NOSE	NOSE	Specimen stored at room temperature.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Novel Influenza	<ul> <li>a) Blood</li> <li>b) NPA x 3</li> <li>c) Nasal Swab x 3</li> <li>d) Nasal Washings x 3</li> <li>e) Throat x 3</li> <li>f) Sputum x 3</li> <li>g) Stool x 3</li> <li>h) Conjunctival Swab x 3</li> </ul>	Red x 2 Lavender x 2 Viral Transport Medium Viral Transport Medium Viral Transport Medium Viral Transport Medium Viral Transport Medium Viral Transport Medium Viral Transport Medium	7 mL x 2 3 mL x 2	м м м м м		MIC	Order Set: R.NOVEL	NOVEL GROUP	Call Microbiology prior to collection. Indicate on the requisition the date of onset, or of contact with a known case. <b>DO NOT use the pneumatic tube system for transporting these specimens.</b> Red Tubes: Acute and Convalescent Stool Specimens: Collect only with GI symptoms If transported: Red tubes - separate serum from clot and send serum; Lavender tubes - send Whole Blood. Referred.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Occult Blood	a) Feces b) Gastric c) Urine	Occult blood cards Screw-cap jar Screw-cap jar	1 mL 5 mL	с с с	< 96 Hours < 24 Hours < 24 Hours	LAB	OB-FE OB-G U/A	OCC-FE OCC-G U/A	<ul> <li>a) To ensure accurate test results, follow the diet below:</li> <li><u>Foods to Eat</u> Well cooked pork, poultry and fish Any cooked fruit and vegetables except those listed in next column. High fiber foods e.g. whole wheat bread, bran cereal, popcorn.</li> <li>High fiber foods e.g. whole wheat bread, bran cereal, popcorn.</li> <li>Sample must have been applied at least 72 hours prior to testing. Sample cards must be tested within 14 days of applying specimen.</li> <li>C) Random specimen. Included with routine urinalysis.</li> </ul>
Oligoclonal Banding	Spinal Fluid And Blood	Sterile Screw-cap tube and GOLD	2 mL and 2 mL	С	7 Days	LAB	OLIGO	OLIGO	Both Spinal fluid and blood specimens are required. Spinal Fluid - deliver tube # 1 to Chemistry immediately. If transported, centrifuge CSF and remove supernatant. Blood Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If transported, serum and CSF supernatant must be sent frozen if not received at DECRH within 48 hours of collection.
Oligosaccharides	Urine	Screw-cap jar	1 mL	С	15 Days	LAB	OLIG	OLIG	Random urine. Referred - 1 mL Urine frozen
Opiates	Urine	Screw-cap jar	5 mL	С	< 24 Hours	LAB	URINE-OPIA	OPIATE-U	Random specimen. This is a semi-quantitative test. If transported, urine must be sent frozen if not received at DECRH within 48 hours of collection.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Organic Acids	Urine	Screw-cap jar	10 mL	С	26 Days	LAB	ORG	ORG	Early AM specimen preferred. Indicate age and clinical diagnosis. Store and send at 4°C. Referred - 10 mL Urine aliquot frozen
Osmolality	a) Blood	GOLD	1 mL	С	STAT ≤45 Minutes Routine	LAB	OSMO	OSMO	a) Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. This test is also part of a Drug Toxic Panel (DRUG-TOX).
Osmotic Fragility (ERC	b) Urine	Screw-cap jar	2 mL	С	<24 Hours		OSMO-U	OSMO-U	b) Random specimen Test not available.
Osteocalcin	Blood	GOLD	5 mL	С	18 Days	LAB	OSTEO	OSTEO	Deliver to Chemistry immediately. Separate serum from clot and freeze within 1 hour of collection. Referred – 1 mL Serum frozen
Ova & Parasites	Stool	SAF		Μ	5 days	MIC	OPSCREEN	OPSCREEN	Fill the container about 1/3 full, screw cap on tightly. Specimens should be no less than the size of a quarter. Mix specimen and SAF fixative well. Parasites may be passed intermittently. If symptoms persist after a negative result, send another specimen. See Form <u>HHN-0448</u> for patient collection instructions Specimen stored at room temperature.
Ovarian Antibodies (Anti-Ovarian Antibodies)	Blood	GOLD	5 mL	С	35 Days		ANTIOVA	ANTIOVA	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store and send at 4°C. Referred - 1 mL Serum
Oxalate	Urine	Large plastic bottle	Complete 24 hr output	С	10 Days	LAB	OXA-24H	OXA-24H	Refer to <u>Diet/Drug Restriction form HHN-0840</u> for patient restrictions. 24 hour collection over 20 mL of 6N HCl <b>or</b> acidify within 24h of collection. Final pH must be between 1 and 3. If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot.
Oxazepam (Serax)	Blood	Red	6 mL	С	15 Days	LAB	OXAP	OXAP	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Referred – 2 mL Serum
Oxycodone (Oxycontin)	Urine	Screw-cap jar	5 mL	С	< 24 Hours	LAB	URINE-OXYC	OXY-U	Random Specimen. This is a semi-quantitative test.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Panel 1 - Chlorinated (Organochlorine) Pesticides									Test no longer available
Panel 4 A - Combined Volatile Solvents									Test no longer available
Panel 6 - Aliphatic Volatile Solvents									Test no longer available
Panel 7 - Chlorophenoxy (Phenoxy Acid) Herbicides									Test no longer available
	a) Blood	GOLD	5 mL		20 Days				a) Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, remove serum and store at 4°C. Referred - 1 mL serum frozen
Paraneoplastic Autoantibody Evaluation	b) CSF	Screw cap tube	1 mL	С	20 Days	LAB	PARANEOP	PARANEOP	b) Aliquot and store at 4°C. Referred 1 mL CSF frozen
Parathyroid Hormone (Intact)	Blood	Lavender	4 mL	С	< 24 Hours	LAB	PTH	PTH	Deliver to the lab immediately; otherwise, plasma must be separated from the cells within 2 hours of collection. If transported, plasma must be frozen if not received at DECRH within 72 hours of collection. Plasma is the preferred sample type. Serum is acceptable but if used it must be separated from the cells immediately.
Parathyroid Hormone Related Protein	Blood	Lavender (pre-chilled)	4 mL	С	7 Days	LAB	PTHPROTEIN	PTH-RP	Collect in pre-chilled tube, place specimen on ice and deliver immediately to Chemistry lab. If transported, centrifuge specimen in a refrigerated centrifuge. Aliquot plasma into a polypropylene vial and freeze. Referred – 1 mL plasma frozen
Parvovirus Serology IgG (Fifth Disease)	Blood	Red or GOLD	5 mL	М	7 days	LAB	PARVO IGG	PARVOG	(Previous/ Post infection) If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Parvovirus Serology IgM (Fifth Disease)	Blood	Red or GOLD	5 mL	М	7 days	LAB	PARVO IGM	PARVOM	(Recent infection) If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred.
PCP (Phencyclidine)	Urine	Screw-cap jar	5 mL	С	<24 Hours	LAB	URINE-PCP	PCP-U	Random specimen. This is a semi-quantitative test. If transported, urine must be sent frozen if not received at DECRH within 48 hours of collection.
PCR-Syphilis (Microbiology)	Blood	Lavender	4 mL	М	3 weeks	LAB	SYPHPCR	SYPHPCR	<b>DO NOT centrifuge.</b> If specimen is not collected at DECRH, freeze whole blood at -70°C and send on Dry Ice. Referred to National Microbiology Lab.
PD-L1 testing on Cytology samples	Pleural fluid	1-CytoLyt container 1-Tissu-Fix container	See collection -pg. 100	CY	Variable, complexity dependant	Nil	Cannot be ordered through Meditech OE	Nil	This is a referred-out test.
Peritonsillar Abscess	Swab	Routine Swab		М	1 week			PERITONS	Specimen stored at room temperature.
Pertofrane (Desipramine)	Blood	Red	6 mL	С	10 Days	LAB	DESIP	DESIP	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Collect within 1 hour prior to next dose or at least 12 hours after last dose. Referred – 3 mL serum.
Pertussis	Nasopharyn geal Aspirate Nasopharyn geal Swab	UTM- Viral Transport Media		М	4 days	MIC	PER	PERPCR	Use #5 (French) plastic catheter with syringe attached. Obstruct side with thumb or finger and draw mucous into the catheter by applying suction through the syringe. Enclose catheter, or catheter with syringe attached, in sterile container. Deliver <b>immediately</b> . If transported, send in <i>NUNC</i> tube at 2-8°C if sending same day or Freeze at -70°C. Referred. For swab collection, please contact the Microbiology Laboratory for UTM. If transported, send at 2-8°C if sending same day or Freeze at -70°C. Referred.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
РН	a) Blood b) Urine c) Body Fluid	Heparinized Syringe Screw-cap jar Heparinized Syringe	1 mL or 4 mL 2 mL 1 mL	C C C	< 24 Hours < 24 Hours < 24 Hours	LAB	PH-B PH-U PH-F	PH-B PH-U PH-F	<ul> <li>a) Arterial heparinized syringe sample as for Blood Gas or heparinized syringe as for Venous Blood Gas. Deliver on ice to Chemistry immediately. The specimen must be analyzed within 1 hour of collection.</li> <li>b) Fresh random specimen</li> <li>c) Collect anaerobically in heparinized syringe. Expel all bubbles. Remove needle and cap end of syringe. Place on ice and deliver to Chemistry immediately. Indicate origin of fluid.</li> <li>pH feces no longer performed as of June 20, 2019</li> </ul>
Pharmacy Fluid	Fluid	FAN (Green) Blood Culture Bottle	8-10 mL	М	5 days	MIC	PHAR	PHARM	Store at room temperature.
Phenobarbital	Blood	Red	1 mL	С	< 24 Hours	LAB	PHENO	PHENO	Specimen must be delivered to the lab within 2 hours; otherwise, centrifuge specimen, remove serum within 2 hours of collection and store at 4°C. Draw immediately prior to next dose. If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection. See Chemistry Section in this manual for additional information.
Phenylalanine	a) Blood b) Blood	Dark Green Blood Blotter	4 mL 2 spots	C C	23 Days 23 Days	LAB	PHE	PHE	<ul> <li>a) 14 hour fast is required. Deliver to Chemistry immediately. Separate and freeze plasma within 2 hours of collection.</li> <li>Referred - 2 mL Plasma frozen</li> <li>b) For known PKU patients, draw blood by finger stick or heel stick and thoroughly saturate the 2 PKU areas on the blood blotter.</li> <li>Referred - allow blotter to dry for 3 hours and send at Room Temperature.</li> </ul>
Phenytoin (Dilantin)	Blood	Red	1 mL	С	< 24 Hours	LAB	PTN	PTN	Specimen must be delivered to the lab within 2 hours; otherwise, specimen must be centrifuged and serum removed within 2 hours of collection and stored at 4°C. Draw immediately prior to next dose. If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection. See Chemistry Section in this manual for additional information.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Phosphorus (Phosphate)	a) Blood	Light Green	1 mL	С	< 24 Hours	LAB	PHOS	PHOS	<ul> <li>a) Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Fasting specimen preferred.</li> <li>b) If sent from Health Centre or other outside collection site, please refer entire</li> </ul>
	b) Urine	Large plastic bottle	Complete 24 hr output		< 24 Hours		PHOS-24H	PHOS-24H	collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot.
Phytanic Acid	Blood	GOLD	5 mL	С	35 Days	LAB		PHYTANIC	Fasting specimen preferred. Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, remove serum and store at 4°C. Referred – 0.5 mL Serum frozen
Pilonidal Abscess	Swab	Routine Swab		М	72 hours	MIC	PIL	PIL	Store at room temperature.
Pinworm		Pinworm paddle		М	48 hours	MIC	PW	PW	Collection device available from DECRH Stores. Apply sticky side of paddle to anal surface. Replace paddle in tube and send to laboratory. <b>Scotch-tape smears are not acceptable</b> . Specimen should be collected in the morning prior to toilet or washing. See Form <u>HHN-0763</u> for patient collection instructions Store at room temperature.
Plasma Hemoglobin	Blood	Dark Green	6 mL	С	10 Days	LAB	PLHGB	PLHGB	Deliver to Chemistry immediately. Separate plasma ASAP. Avoid hemolysis. Referred - 1 mL Plasma
Plasminogen	Blood	Blue (Sodium Citrate)	2.7 mL	С	12 Days	LAB	PLASMINO	PLASMINO	Deliver to Chemistry immediately. Separate and freeze plasma ASAP. Referred - 0.5 mL Plasma frozen
Platelet Aggregation	Blood								Test no longer performed at DECRH
Platelet Function Screen	Blood	Blue x 2	2.7 mL	Н	Stat 1 hr Routine 24 hr	LAB	PFS	PFS	Specimen must be drawn using a 21 or larger gauge needle. DO NOT centrifuge. If transported, specimen must be received at DECRH or URVH within 4 hours of collection and a history sheet must accompany the specimen. Transport at Room Temperature. DO NOT SEND IN PNEUMATIC TUBE SYSTEM.
Platelet-Associated Antibodies									Test no longer available.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Pleural Fluid	Fluid	Sterile screw- cap jar		М					See Body Fluid
Pneumococcal antigen	CSF Urine	Sterile container		М	96 hours	MIC	PNEUAG	PNEUAG	Specimen is stored refrigerated. If transported, send at 2-8°C. Referred.
Pneumocystis	Bronchoalve o-lar lavage <b>only</b>	Sterile screw- cap jar		М	72 hours	MIC	PNC	PNC	Deliver to laboratory immediately. If transported, send at 2-8°C. Referred.
PNH (Paroxysmal Nocturnal Hemoglobinuria)	Blood	Lavender	4 mL X 2	н	7 days	LAB	PNH	PNH	Draw Monday-Thursday before 1200 hrs. Specimens must be delivered to the DECRH Haematology lab before 1300 hrs on the day of collection. If transported, send refrigerated at 2-8°C. Mark box "STAT LAB-FLOW CYTOMETRY". If specimens cannot be transported for receipt @ DECRH before 1300 hrs, they can be sent directly to TMH by Maritime Bus or Purolator. Please notify DECRH Haematology-Flow Cytometry when referring samples directly to The Moncton Hospital
Porphobilinogen	a) Urine b) Urine	Screw cap jar Large plastic bottle	20 mL Complete 24 hour output	C C	15 Days 15 Days	LAB	PBG PBG-24H	PBG PBG-24H	<ul> <li>a)Protect specimen from light. Specimen must be labeled inside and outside the light-protecting wrap. Deliver to lab immediately. If transported, freeze a 20 mL aliquot as soon as possible (protect from light). Referred - 20 mL Urine aliquot frozen</li> <li>b)Protect specimen from light. Specimen must be labeled inside and outside the light-protecting wrap. Deliver to lab immediately. If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 20 mL aliquot frozen. Referred - 20 mL Urine aliquot frozen</li> </ul>
Porphobilinogen Deaminase (Uro-1-Synthetase)	Blood	Dark Green	6 mL	С	7 Days	LAB	URO	URO	Specimen must be delivered to lab within 2 hrs of collection. Store and send whole blood at 4°C. Do not separate. Referred - whole blood refrigerated

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
	a) Blood	Lavender x 2	3 mL x2	С	16 Days		PP-QUAN-B	PP-QUAN-B	a) Protect from light. Do not centrifuge. Quantitative test. Hematocrit result must be provided. Referred - 2 mL Whole Blood
	b) Urine	Screw-cap jar	20 mL	С	13 Days		PP-U	PP-U	<ul> <li>b) Fresh random specimen. Protect from light. pH should be adjusted with anhydrous Sodium Carbonate as soon as possible following collection. Final pH should be 7 to 10. Quantitation may only be done if preliminary screen is positive.</li> <li>Store and send frozen.</li> <li>Referred - 20 mL Urine aliquot frozen</li> </ul>
Porphyrins (quantitative tests includes coproporphyrins and uroporphyrins)	c) Urine	Large plastic bottle with Anhydrous Sodium Carbonate	Complete 24-hr output	С	13 Days	LAB	PP-24H	PP-24H	c) Protect from light. Collect over 5g of Anhydrous Sodium Carbonate. Quantitation may only be done if preliminary serum is positive. Final pH should be 7 to 10. If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 20 mL aliquot frozen. Referred – 20 mL Urine aliquot frozen.
	d) Feces	Screw-cap jar	50 g	С	13 Days		PP-QUAN-FE	PP-QUAN-FE	d) Bandam an asimon Bratast from linkt. Quantitative test
									d) Random specimen. Protect from light. Quantitative test. Referred - 50 g Feces frozen
	a) Blood	Light Green	1 mL	С			POT	К	a) Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Part of an electrolyte (LYTE or ISE) profile.
	b) Feces						к-24н	к-24н	b) Test not available.
Potassium	c) Urine	Large plastic bottle	Complete 24 hr output	С	STAT ≤45 Minutes Routine	LAB	11-2-11	11-2-411	c) If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot. Part of a 24 hour urine electrolyte (LYTE-24H) profile. If output per day is not required, a random specimen is acceptable.
	d) Urine	Screw-cap jar	5 mL	С	<24 Hours		K-R	K-R	d) Random specimen. Part of a random urine electrolyte (LYTE-U) profile.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Prealbumin	Blood	GOLD	1 mL	С	< 24 Hours	LAB	PA	PA	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If transported, serum must be sent frozen if not received at DECRH within 72 hours of collection.
Prekallikrein (Fletcher Factor)	Blood	Blue x 2 (Sodium Citrate)	2.7 mL x 2	С	25 Days	LAB	РКК	РКК	<ul> <li>Deliver to the lab immediately. If transported, platelet poor plasma (count &lt; 10) must be achieved with the following procedure: <ol> <li>1. 1st spin: Spin specimens in the centrifuge, after 1st spin is complete, remove blue tubes from centrifuge and transfer 1st spin plasma to a separate labeled 12x75 plastic tube.</li> </ol> </li> <li>2. 2nd spin: Cap the 12x75 tubes and re-spin plasma, after 2nd spin is complete, carefully remove tubes from centrifuge, without disrupting platelets at bottom of tube.</li> <li>3. Carefully remove platelet poor plasma, leaving sediment (containing platelets) in bottom of tube. Transfer directly to labeled 12x75 plastic tube for the platelet count. Perform and record plt count on label if applicable.</li> <li>4. Send frozen in 2 aliquots of 1 mL each. Referred</li> </ul>
Prenatal Blood Group and Antibody Screen	Blood	Pink	6 mL	ТМ	96 hr	LAB	PRENAT	PN	DO NOT separate plasma from cells. If transported send within 24 hours at 2-8°C
Pre-Natal Serology Do not use, each test MUST be ordered individually	Blood	Red or GOLD	5 mL	М	48 hours			NAT	Refer to individual tests: PN, NAT and CBC
Primidone (Mysoline)	Blood	GOLD	1 mL	С	10 Days	LAB	PRIM	PRIM	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum and store at 4°C. Referred – 1.0 mL Serum
Pro BNP (BNP)	Blood	Light Green	1 mL	С	< 24 Hours	LAB	NT-PROBNP	PRO BNP	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Please see <u>Utilization</u> rules
Procainamide (Pronestyl) (N-Acetylprocainamide)	Blood	Red	6 mL	С	12 Days	LAB	PROCAM	PROCAM	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum and store at 4°C. Referred - 0.5 mL Serum frozen

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Progesterone	Blood	Light Green	1 mL	С	< 24 Hours	LAB	PROG	PROG	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If transported, plasma must be sent frozen if not received at DECRH within 48 hours of collection.
Prolactin	Blood	Light Green	1 mL	С	< 24 Hours	LAB	PROL	PROL	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. f transported, plasma must be sent frozen if not received at DECRH within 48 hours of collection.
Proliferating Cell Nuclear Antigen	Blood	GOLD	5 mL	С	20 Days	LAB	PCNA	PCNA	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, remove serum and store at 4°C. Referred - 1 mL Serum frozen
Pronestyl (Procainamide) (N-Acetylprocainamide)	Blood	Red	6 mL	С	12 Days	LAB	PROCAM	PROCAM	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum and store at 4°C. Referred - 0.5 mL Serum frozen
Propafenone (Rythmol)	Blood	Red	6 mL	С	10 Days	LAB	RYTHMOL	PROPAF	Collect trough specimen just prior to next dose. Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Referred – 1.5 mL Serum
Properdin B									Test no longer available.
Propylene glycol	Blood	Light Green	Full	С	<24 Hours	LAB	ALCEG	ALCEG	Note yellow, red, grey, lavender and Barricor tubes are also acceptable. Do not use any type of alcohol to disinfect skin. Collection tube must be allowed to draw to complete vacuum. Invert tube several times to mix. Keep tube sealed until analysis. Medico legal specimens should be delivered directly to a police officer, not to the laboratory. If transported, do not centrifuge. Serum osmolality, Glucose, Urea and Sodium (2 mL blood in a Gold tube is required) should also be requested.
Prostate Specific Antigen (PSA)	Blood	Light Green	1 mL	С	< 24 Hours	LAB	PSA	PSA	Specimen must be delivered to lab within 2 hours; otherwise, centrifuge specimen within 2 hours of collection, store upright at 4°C. If transported, plasma must be sent frozen if not received at DECRH within 5 days of collection.
Prostate Specific Antigen - Free (Free PSA)	Blood	GOLD	1 mL	С	24-48 Hours	LAB	FPSA	FPSA	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If a red tube is used, remove serum immediately. If transported, serum must be sent frozen if not received at DECRH within 5 days of collection. Free PSA will only be done if the total PSA is greater than 4.0 but less than $10\mu g/L$ . Referred – 1.0 mL serum.
Prostatic massage		Sterile screw- cap jar		М	48 hours	MIC	PRO	PRO	Pre and Post specimens. Deliver to laboratory immediately. If transported, send at. 2-8°C

This is a CONTROLLED document. LAB-3-ADM-LUM-00001 Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use

Laboratory User Manual Version 40.0

Page 208 of 242

Effective Date: January 24, 2022

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Protein C	Blood	Blue (Sodium Citrate)	2.7 mL x 2	Н	21 days	LAB	PROTC	PROC	<ul> <li>Patient must be off oral anticoagulants for 2 weeks prior to collection. Deliver to the lab within 2 hours of collection If transported, platelet poor plasma (count &lt; 10) must be achieved with the following procedure:</li> <li>20. 1<sup>st</sup> spin: Spin specimens in the centrifuge, after 1<sup>st</sup> spin is complete, remove blue tubes from centrifuge and transfer 1<sup>st</sup> spin plasma to a separate labeled 12x75 plastic tube.</li> <li>21. 2<sup>nd</sup> spin: Cap the 12x75 tubes and re-spin plasma, after 2<sup>nd</sup> spin is complete, carefully remove tubes from centrifuge, without disrupting platelets at bottom of tube.</li> <li>22. Carefully remove platelet poor plasma, leaving sediment (containing platelets) in bottom of tube. Transfer directly to labeled 12x75 plastic tube for the platelet count. Perform and record plt count on label if applicable.</li> <li>23. Send frozen in 1 aliquot of 2 mL.</li> </ul>
	a) Blood	GOLD	2 mL	С	7 Days		PE	PE	a) Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Total Protein included.
	b) Spinal Fluid			С	7 Days				b) See Oligoclonal Banding
Protein Electrophoresis	c)) Urine	Screw-cap jar	30 mL	С	7 Days	LAB	PE-U	PE-U	c) Random specimen
	d) Urine	Large plastic bottle	Complete 24 hr output	С	7 Days		PE-U 24H	PE-U 24H	<ul> <li>d) If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 30 mL aliquot.</li> <li>Please see <u>Utilization</u> rules</li> </ul>

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Protein S	Blood	Blue (Sodium Citrate)	2.7 mL x 2	Н	21 days	LAB	PROTS	PROS	<ul> <li>Patient must be off oral anticoagulants for 2 weeks prior to collection. Deliver to the lab within 2 hours of collection. If transported, platelet poor plasma (count &lt; 10) must be achieved with the following procedure: <ol> <li>1. 1<sup>st</sup> spin: Spin specimens in the centrifuge, after 1<sup>st</sup> spin is complete, remove blue tubes from centrifuge and transfer 1<sup>st</sup> spin plasma to a separate labeled 12x75 plastic tube.</li> </ol> </li> <li>2. 2<sup>nd</sup> spin: Cap the 12x75 tubes and re-spin plasma, after 2<sup>nd</sup> spin is complete, carefully remove tubes from centrifuge, without disrupting platelets at bottom of tube.</li> <li>3. Carefully remove platelet poor plasma, leaving sediment (containing platelets) in bottom of tube. Transfer directly to labeled 12x75 plastic tube for the platelet count. Perform and record plt count on label if applicable.</li> <li>4. Send frozen in 1 aliquot of 2 mL.</li> </ul>
Protein, Total	a) Blood b) Body Fluid c) Spinal Fluid d) Urine e) Urine	Light Green Dark Green Sterile Screw-cap tube. Screw-cap jar Large plastic bottle	1 mL 2 mL 0.5 mL 10 mL Complete 24 hr output	C C C C C	STAT ≤45 Minutes Routine <24 Hours	LAB	PROT PROT-F PROT-CSF PROT-U PROT-24H	TP-F TP-CSF PRO-U TP-24H	<ul> <li>a) Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C.</li> <li>b) Invert tube several times to mix. Indicate origin of fluid.</li> <li>c) Deliver tube # 1 of the three tubes collected to Chemistry immediately.</li> <li>d) Random specimen.</li> <li>e) If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot.</li> </ul>
Protein/Creatinine Ratio	Urine	Screw-cap jar	5 mL	C	< 24 Hours	LAB	PRCR RATIO	PRO-CR RATIO	Random specimen

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Prothrombin Gene Mutation	Blood	Lavender x 1	3 mL	н	2 – 3 weeks	LAB	PGM	PGM	Collect Monday to Wednesday only: <b>*HDSJ collect before 0900 on Wednesdays</b> <b>*TVCHC Wednesday collection not available</b> . Deliver to the lab within 2 hours of collection.
									Must arrive at DECRH same day as collection. Referred.
Prothrombin Time	Blood	Blue (Sodium Citrate)	2.7 mL	Н	Stat 1 hr Routine 24 hr	LAB	PT	PT	Deliver to the lab same day as collected. If transported, maintain at room temperature.
Protriptyline	Blood	Red	6 mL	С	10 Days	LAB	PROTR	PROTR	Draw prior to AM dose or 10-12 hours after last dose. Deliver to Chemistry immediately. Separate serum from clot ASAP. Referred – 1.5 mL Serum
Prozac (Fluoxetine)	Blood	Red	6 mL	С	8 Days	LAB	PROZ	FLUOX	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Draw trough prior to next dose. Referred - 1 mL Serum
PSA (Prostate Specific Antigen)	Blood	Light Green	1 mL	С	< 24 Hours	LAB	PSA	PSA	Specimen must be delivered to lab within 2 hours; otherwise, centrifuge specimen within 2 hours of collection, store upright at 4°C. If transported, plasma must be sent frozen if not received at DECRH within 5 days of collection.
Pseudocholinesterase (Cholinesterase)	Blood	GOLD	1 mL	С	7 Days	LAB	PSEUDO	PSEUDO	Specimen must be delivered to lab within 2 hours; otherwise, centrifuge specimen within 2 hours of collection, store at 4°C. Collect blood at least 24 hours following surgery involving the administration of succinylcholine. Referred - 2 mL Serum
Pseudocholinesterase Phenotyping (Cholinesterase Phenotyping)	Blood	GOLD	5 mL	С	15 Days	LAB	PSEUDOPHEN	PSEUDOPHEN	Specimen must be delivered to lab within 2 hours; otherwise, centrifuge specimen within 2 hours of collection, store upright at 4°C. Collect blood at least 24 hours following surgery involving the administration of succinylcholine. Referred – 1.5 mL Serum
Pyridoxine (Vitamin B6)	Blood	Lavender	4 mL	С	15 Days	LAB	VITB6	VITB6	Protect from light. Deliver to Chemistry immediately. Separate plasma from cells within 1 hour of collection. Referred - 2 mL Plasma frozen
Pyruvate	Blood	Special tube with Perchloric Acid	2 mL	С	10 Days	LAB	PYR	PYR	Collect 2 mL blood in heparinized syringe and add immediately to a special tube containing 4 mL of cold 0.8 mol/L Perchloric Acid (obtain from Chemistry). Shake to mix. If transported, centrifuge, freeze clear supernatant. If supernatant is hemolyzed, request new specimen. Referred - 2 mL clear Supernatant frozen

Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Pyruvate Kinase	Blood	Lavender x 2	3 mL x 2	С	11 Days	LAB	РК	РК	Draw blood on Monday to Wednesday only. Blood transfusion within the last 3 months invalidates test results. Do not centrifuge. Referred - 5 mL Whole Blood
Q-Fever (Coxiella Burnetti)	Blood	Red or GOLD	5 mL	М	2 weeks	LAB	QF	QF	If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred.
Quinidine	Blood	Red	6 mL	С	9 Days	LAB	QUIN	QUIN	Specimen must be delivered to the lab within 2 hours; otherwise, specimen must be centrifuged and serum removed within 2 hours of collection and stored at 4°C. Draw immediately prior to next dose. See Chemistry Section in this manual for additional information. Referred - 1 mL Serum
Rabies Serology	Blood	Red or GOLD	5 mL	М	4 weeks	LAB	RAB	RAB	If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred.
Rapamycin (Sirolimus)	Blood	Lavender	4 mL	С	11 Days	LAB	RAPAMYCIN	RAPA	Store and ship specimen at 4°C. If specimen will not reach DECRH within 24 hrs, mix and transfer whole blood sample to 1 polypropylene vial and freeze. Referred - Whole Blood frozen
Rape Drugs (Date Rape Drugs)	Urine	Screw-cap jar	10 mL	С	7 Days	LAB		DATE RAPE DRUGS	This profile includes Rohypnol (Flunitrazepam) and GHB (Gamma Hydroybutyrate). The sample is valid only if collected within 8 hours of suspected ingestion. Referred - 10 mL urine aliquot
Rast (Allergy Test)	Blood	GOLD	5 mL	С	16 Days	LAB	RAST	RAST	Specimen must be delivered to lab within 2 hours; otherwise, centrifuge specimen within 2 hours of collection, store upright at 4°C. Specify antigen(s) to be tested (maximum 10). Referred - 2 mL frozen
Rectal: C&S	Swab	Routine Swab		М	72 hours	MIC	REC	REC	Indicate whether diagnosis is diarrhoea or abscess. Specimen stored at room temperature.
Rectal: GC	Swab	Routine Swab		М	72 hours	MIC	GCR	GCR	PCR Testing also available (see Chlamydia trachomatis/ Neisseria gonorrheae PCR: Rectal) Specimen stored at room temperature.
	a) Feces	Screw-cap jar	2 mL	С				REDU-FE	a) Test no longer available
Reducing Substances	b) Urine	Screw-cap jar	1 mL	С		LAB		REDU-U	b) Test no longer available

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Renin	Blood	Lavender (pre-chilled)	4 mL	С	7 Days	LAB	RENIN	RENIN	Patient should be in a <b>seated position for 15 minutes prior to collection</b> . Draw time preferably no later than 10 am. Collect in pre-chilled tube, place specimen on ice and deliver immediately to Chemistry lab. If transported, centrifuge specimen in a refrigerated centrifuge. Aliquot plasma into 1 polypropylene vial and freeze. If Aldosterone and Renin are both ordered, an Aldosterone/Renin ratio will also be reported. Referred – 2 mL Plasma frozen.
Reptilase	Blood	Blue (Sodium Citrate)	2.7 mL	н	21 days	LAB	REPT	REPT	<ul> <li>Deliver to the lab within 2 hours of collection. If transported, platlet poor plasma (count &lt; 10) must be achieved with the following procedure: <ol> <li>1. 1<sup>st</sup> spin: Spin specimens in the centrifuge, after 1<sup>st</sup> spin is complete, remove blue tubes from centrifuge and transfer 1<sup>st</sup> spin plasma to a separate labeled 12x75 plastic tube.</li> </ol> </li> <li>2<sup>nd</sup> spin: Cap the 12x75 tubes and re-spin plasma, after 2<sup>nd</sup> spin is complete, carefully remove tubes from centrifuge, without disrupting platelets at bottom of tube.</li> <li>3. Carefully remove platelet poor plasma, leaving sediment (containing platelets) in bottom of tube. Transfer directly to labeled 12x75 plastic tube for the platelet count. Perform and record plt count on label if applicable.</li> <li>4. Send frozen in 1 aliquot of 2 mL.</li> </ul>
RSV (Respiratory Syncytial Virus)	Nasopharyn geal SWAB	Must be collected in UTM (Viral Transport Media)		М	24 hours	MIC	RSV	RSV	If transported, store at 4°C. Results include RSV and influenza A & B. RSV testing at DECH will only be done on patients less than 6 years.
Restoril (Temazepam)									Test no longer available
Reticulocyte Counts	Blood	Lavender	3 mL	Н	72 hr			RET	<b>Mix by inverting gently 8-10 times.</b> Deliver to the lab within 4 hours of collection. If transported, the specimen must be maintained at 2-8°C and received at DECRH within 48 hours of collection.
Rh Immune Globulin Eligibility	Blood	Pink	6 mL	ТМ	24 hr		RH	RHIG	To determine the eligibility of Rh Negative women to receive Rh Immune Globulin. <b>DO NOT</b> separate plasma from cells. If transported send within 24 hours at 2-8°C

Test	Specimen	Container	Amount	Department	Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Rheumatoid Factor	Blood	Light Green	1 mL	С	< 24 Hours	LAB	RHEU	RF	Specimen must be delivered to lab within 2 hours; otherwise, centrtifuge specimen within 2 hours of collection, store upright at 4°C.
Ritalin (Methylphenidate)	a) Blood b) Urine	Red Screw-cap jar	6 mL 10 mL	C C	15 Days 15 Days	LAB	RIT METHY-U	METHY METHY-U	<ul> <li>a) Specimen must be delivered to the lab immediately. Centrifuge specimen and freeze serum ASAP.</li> <li>Referred - 2 mL serum frozen</li> <li>b) Random urine specimen. Referred - 10 mL aliquot</li> </ul>
Rivotril (Clonazepam)	Blood	Red x 2	6 mL x 2	С	12 Days	LAB	RIV	CLON	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Draw trough prior to next dose. DO NOT confuse this drug with Clobazam. Referred – 3 mL Serum frozen
Rohypnol (Flunitrazepam)	Urine	Screw-cap jar	5 mL	С	7 Days	LAB		FLUNIT-U	Please note this is part of the "Date Rape Drugs" profile. This test is referred as a Benzodiazepine ID profile. Presence or absence of Flunitrazepam will be reported along with other detectable benzodiazepines. Referred - 5 mL Urine
Rotavirus / Adenovirus				М					Test no longer available
RPR Titre	Blood	Red or GOLD	5 mL	М	48 hours	LAB	RPRT	RPRT	If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred.
Rubella Serology IgG	Blood	Red or GOLD	5 mL	М	48 hours	LAB	RUB	RUB	(Immune Status) If transported, separate serum from clot and send serum. 2-8°C if sending within 72 hours or Freeze at -20°C.
Rubella Serology IgM	Blood	Red or GOLD	5 mL	М	5 days	LAB	RUBM	RUBM	(Recent Infection). <b>Includes Rubella IgG</b> If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred.
Rythmodan (Disopyramide) (Norpace)	Blood	Dark Green	6 mL	С	12 Days	LAB	DISO	DISO	Specimen must be delivered to the lab within 2 hours; otherwise, plasma must be separated from the cells within 2 hours of collection and stored at 4°C. Referred - 1 mL Plasma

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Rythmol (Propafenone)	Blood	Red	6 mL	С	10 Days	LAB	RYTHMOL	PROPAF	Collect trough specimen just prior to next dose. Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Referred – 1.5 mL Serum
Salicylate (ASA)	Blood	Red	1 mL	С	< 24 Hours	LAB	SAL	SAL	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Avoid Hemolysis. If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection. This test is also part of a Drug Toxic Panel (DRUG-TOX).
Saline Suppression Test	Blood			С		LAB			See Chemistry Section in this manual for additional information.
Salmonella	Stool	Enteric Transport Medium		М	72 hours	MIC	STOOL	STOOL	Collect only one specimen. If it is negative and the symptoms continue, two more may be collected on separate days. Formed stool should be the size of a quarter. Liquid stool should be equal to the amount of the transport medium in the jar. <b>Routine culture includes Salmonella, Shigella, Yersinia, Campylobacter and E. coli</b> . If patient has eaten seafood, also order Vibrio Culture (VIB). See Form <u>HHN-0448</u> for patient collection instructions Specimen stored at room temperature.
SARS Serology (Severe Acute Respiratory Syndrome)	Blood	Red or GOLD x 1 and Lavender x 2	5 mL and 4 mL x 2	Μ	2 weeks			SARS	Call Microbiology prior to collection. Indicate on the requisition the date of onset, or of contact with a known case. If transported: Red tube - If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred. Lavender tube - send Whole Blood. Referred.
SARS: Nasopharyngeal aspirate	NPA	Suction container	2 mL	М	2 weeks	MIC	SARSNPA	SARSNPA	Call Microbiology before collection. Deliver <b>immediately</b> . Referred.
SARS: Stool	Stool	Sterile Screw-cap jar		М	2 weeks	MIC	SARGOLDOOL	SARGOLDOOL	Call Microbiology prior to collection. Deliver <b>immediately</b> . Referred. See Form <u>HHN-0448</u> for patient collection instructions Specimen stored at 2-8 °C
SARS: Throat	Throat Swab	Viral Transport Swab		М	2 weeks	MIC	SARSTS	SARSTS	Call Microbiology before collection. Deliver <b>immediately</b> . Swab with viral transport medium available from Microbiology. Referred.
SARS: Urine	Urine	Sterile Screw-cap jar	5 mL	М	2 weeks	MIC	SARSUR	SARSUR	Call Microbiology before collection. Deliver immediately. Referred.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Scabies	Skin Scrappings	Glass slides		М	48 hours	MIC	SCAB	SCAB	Collect scrapings in mineral oil onto a glass slide; cover with second slide and seal with <b>surgical</b> tape around all four edges. Specimen stored at room temperature.
Schistosoma	Urine	Sterile Screw-cap jar	10 mL	М	24 hours	MIC	SCHIST	SCHIST	Collect between 1000-1400 hours, after vigorous exercise. Specimen stored at 2-8 ℃
Schistosoma serology	Blood	Red or GOLD	5 mL	М	4 weeks	LAB		STRON SCHIST	Includes Strongyloides serology
Secretin				С	13 Days	LAB		SEC	Consult Clinical Chemist before ordering this test.
Sedimentation Rate	Blood	Black	1.36 mL Exactly	Н	Stat 4 hr Routine 24 hr			ESR	<b>DO NOT overfill the tube.</b> Deliver to the lab within 4 hours of collection. If transported, the specimen must be maintained at 2-8°C and received at DECRH on day of collection. If both ESR and CRP are ordered together, only the CRP will be performed. See Utilization Rules Section. Please see <u>Utilization</u> rules
Selenium	Blood	Royal Blue EDTA	6 mL	С	15 Days	LAB	SEL	SEL	Deliver to Chemistry immediately. Separate plasma ASAP. Use metal-free polypropylene vial. Referred - 3 mL Plasma in a metal-free polypropylene vial.
Semen	Semen	Sterile Screw-cap jar		М	72 hours	MIC	SEM	SEM	Deliver immediately to the laboratory. Specimen stored at room temperature.
Semen Analysis	Semen	Sterile Screw-cap jar		ТМ	5 hr	LAB	SEM	SEM	<ul> <li>An appointment must be booked through Central Scheduling at DECRH.</li> <li>It is recommended that the semen sample be collected following a three-day period of abstinence. The specimen must be collected in the wide-mouth clean plastic container provided. This container and instructions are available from CIU. The specimen must not be collected in a condom because of the presence of contaminating starch grains or lubricant, which may be spermicidal. When transporting specimens, certain precautions are necessary:         <ol> <li>The specimen must be received within 1 hour of collection.</li> <li>It is essential that the semen specimen be maintained at room temp and not be subjected to extreme temperatures during delivery to the laboratory.</li> </ol> </li> <li>The laboratory must receive specimens no later than 1200 hours. Do not collect specimens on weekends and holidays. Note time of collection on requisition and specimen label. Indicate if specimen is post vasectomy or for fertility.</li> </ul>
Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
---	----------	--------------------------------	--------	------------	---------------------------------	----------------	----------------	-----------------	---
Serax (Oxazepam)	Blood	Red	6 mL	С	15 Days	LAB	SERAXDRUG	OXAP	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Referred – 2 mL Serum
Serology - Test Not Listed in Manual	Blood	Red or GOLD	5 mL	М	Test dependent	LAB	SEROL	SEROL	<b>Call Microbilogy before ordering</b> . Indicate antibody to be tested. If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred.
Serotonin	Blood	GOLD	5 mL	С	8 Days	LAB	SERO	SERO	Deliver to Chemistry immediately. Serotonin may be increased by diet or released by medications. Medications that may affect serotoin include lithium, monoamine oxidase inhibitors, methyldopa, morphine and reserpine. Separate and freeze serum ASAP. Referred – 2.5 mL Serum frozen
Sertraline (Zoloft)	Blood	Red	6 mL	С	10 Days	LAB	ZOLOFT	ZOLOFT	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Patient should be on the drug for at least 1 week prior to testing. Draw trough prior to next dose. Referred - 1 mL Serum
Sex Hormone Binding Globulin	Blood	Light Green	1 mL	С	<24 Hours	LAB	SEXHORMONE	SEXHBG	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C.
SGOT (AST, Aspartate Aminotransferase)	Blood	Light Green	1 mL	С	< 24 Hours	LAB	AST	AST	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Please see <u>Utilization</u> rules
SGPT (ALT, Alanine Amino Transferase)	Blood	Light Green	1 mL	С	< 24 Hours	LAB	ALT	ALT	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Avoid hemolysis.
Shake Test									Test no longer available
Shigella	Stool	Enteric Transport Medium		М	72 hours	MIC	STOOL	STOOL	Collect only one specimen. If it is negative and the symptoms continue, two more may be collected on separate days. Formed stool should be the size of a quarter. Liquid stool should be equal to the amount of the transport medium in the jar. <b>Routine culture includes Salmonella, Shigella, Yersinia, Campylobacter and E. coli</b> . If patient has eaten seafood, also order Vibrio Culture (VIB). See <u>HHN-0448</u> for collection instructions. Specimen stored at room temperature.
Sickle Cell Screen	Blood	Lavender	3 mL	Н	Stat 1 hr Routine 45 days		SICELL	SICELL	<b>Mix by inverting gently 8-10 times.</b> Deliver to the lab within 4 hours of collection. If transported, the specimen must be received at DECRH the same day as collected.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Sinequan (Doxepin)	a) Blood b) Urine	Red Screw-cap jar	6 mL 10 mL	C C	10 Days 10 Days	LAB	DOX DRUGSC1	DOX DRUGSC1	<ul> <li>a) Draw trough specimen 1 hour prior to next dose, or at least 12 hours post dose. Deliver to Chemistry immediately. Separate serum from clot ASAP. Referred – 3 mL Serum</li> <li>b) Part of Drug Screen, General (DRUGSC1). Specify screening for Sinequan. Referred - 10 mL Urine aliquot</li> </ul>
Sinus (Nasal)	Swab	Routine Swab		М	72 hours	MIC	SIN	SIN	Specimen stored at room temperature.
Sirolimus (Rapamycin)	Blood	Lavender	4 mL	С	11 Days	LAB	RAPAMYCIN	RAPA	Store and ship specimen at 4°C. If specimen will not reach DECRH within 24 hrs, mix and transfer whole blood sample to 1 polypropylene vial and freeze. Referred - Whole Blood frozen
Skin Antibodies (Epidermal Antibodies)	Blood	GOLD X 2	5 mL x 2	С	12 Days	LAB	ANTIEP	ANTIEPID	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store and send at 4°C. Assay includes Epidermal or Skin Antibodies. Referred - 3 mL Serum
Skin: C&S	Swab	Routine Swab		М	72 hours	MIC	SKIN	WOUND	Swab <b>only</b> the infected area. Bacteria from the surrounding area prevent accurate interpretation of the results. Indicate source of swab. Specimen stored at room temperature.
Skin: Fungus	Skin Scrapings	Sterile Screw-cap jar		М	4 weeks	MIC	MYC	MYC	Indicate source of specimen. Skin should be cleansed with an antiseptic before collection of skin scrapings. Specimen stored at room temperature.
Smear (Gonorrhoea)				М					No longer available see Chlamydia trachomatis Neisseria gonorrheae PCR or Gonorrheae

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Sodium	a) Blood b) Feces c) Urine	Light Green Large plastic bottle	1 mL Complete 24 hr output	C	STAT ≤45 Minutes Routine <24 Hours	LAB	NA NA-24H	NA NA-24H	<ul> <li>a) Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Part of an electrolyte (LYTE or ISE) profile.</li> <li>b) Test not available.</li> <li>c) If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot. Part of a 24 hour urine electrolyte (LYTE-24H) profile. If output per day is not required, a random specimen is acceptable.</li> </ul>
	u) Unne	Screw-cap jar	5 mL				NA-R	NA-R	d) Random specimen. Part of a random urine electrolyte (LYTE-U) profile.
Soluble Liver Antigen Antibodies (Cytokeratin Antibodies)	Blood	GOLD	5 mL	С	15 Days	LAB	SOLIVERAB	S-LIVER AB	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, store and send at 4°C. Referred - 1 mL Serum frozen
Somatomedin C (Insulin like Growth Factor1)	Blood	GOLD	5 mL	С	12 Days	LAB	SOMAT	SOMAT	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum and store 4°C. Referred – 1 mL Serum frozen
	a) Body	Screw-cap jar	1 mL	С	< 24 Hours		SG-F	SG-F	a) Indicate origin of fluid.
Specific Gravity	b) Urine	Screw-cap jar	1 mL	С	< 24 Hours	LAB	SG	USG	b) Random specimen
Spinal Fluid Cell Count	Spinal Fluid	Sterile Screw-cap tube	2 - 3 mL	Н	Stat 1 hr Routine 4 hr			SF	Tube # 3 must be delivered to Haematology immediately as cells disintegrate rapidly. Cell count must be performed within 30 minutes of collection therefore specimens CANNOT be transported between facilities.
Spinal Fluid Tubes	Spinal fluid	Sterile Screw-cap tubes							# 1 Chemistry, # 2 Microbiology, # 3 Haematology, # 4 Cytology
Spinal Fluid: C&S	Spinal Fluid	Sterile tube	1 mL	М	72 hours	MIC	CSF	CSF	Deliver tube # 2 of the 3 tubes collected <b>immediately</b> . Any amount of CSF sent will be processed.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Spinal Fluid: C&S For transport to DECRH	Spinal Fluid	Paediatric (Yellow) or FAN (green) Blood Culture Bottle + Sterile Screw-cap tube		Μ	5 days	MIC	CSF	CSF + CSFB	Aseptically transfer 0.5 mL or half the volume of the CSF to a blood culture bottle. <i>HOLD</i> the bottle at Room Temperature until delivered. Refrigerate the remaining portion of the sample and send on cold pack.
Spinal Fluid: TB	Spinal Fluid	Sterile Screw-cap tube or jar	1.2 ml	М	smear 3 days final 8 weeks	MIC	AFB	TBC	Specimen stored at 2-8 °C. Referred.
Spinal Fluid: Viral PCR	Spinal Fluid	Sterile Screw-cap tube or jar	1 mL	М	4 days	MIC	CSFPCR	CSFPCR	Deliver <b>immediately</b> . Please indicate which virus requested. Note if ordering Syphilis, syphilis serology is also required for testing to be done. If transported, send frozen in <i>NUNC</i> tube on dry ice. Referred.
Spinal Fluid: Virus Culture	Spinal Fluid						No longer avail	able see Spinal Flui	d: Viral PCR
Spinal Fluid: Yeast	Spinal Fluid	Sterile tube	1 mL	М	smear 3 days final 4 weeks	MIC	MYC	MYC	Deliver <b>immediately</b> . Same specimen may be used for C&S and Yeast.
Sputum: Mycoplasma + Chlamydia	Sputum	Sterile Screw-cap jar		М	2 WEEKS	MIC	СР	MYCOSPU	Testing combined with <i>Mycoplasma pneumoniae</i> , <i>Chlamydia pneumoniae</i> and <i>Chlamydia psittaci</i> . Referred. See Form <u>HHN-0452</u> for patient collection instructions
Sputum: C&S	Sputum	Sterile Screw-cap jar		Μ	72 hours	MIC	SPU	SPUT	Ensure the specimen is mucoid or purulent sputum and not saliva. Unsatisfactory specimens cannot be processed. See Form <u>HHN-0452</u> for patient collection instructions. Please see <u>Utilization</u> rules Specimen stored at 2-8 °C.
Sputum: Eosinophils	Sputum	Screw-cap jar							Test moved to Haematology. See Eosinophils - Respiratory
Sputum: Fungus	Sputum	Sterile Screw-cap jar		М	smear 3 days Final 4 weeks	MIC	MYC	MYC	See Form <u>HHN-0452</u> for patient collection instructions Specimen stored at 2-8 °C. Referred.
Sputum: Legionella	Sputum	Sterile Screw-cap jar		М	10 days	MIC	LEG	LEG	Referred. See Form <u>HHN-0452</u> for patient collection instructions Specimen stored at 2-8 °C. Referred.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Sputum: TB	Sputum	Sterile Screw-cap jar		М	smear 3 days 8 weeks	MIC	AFB	ТВС	Referred. See Form <u>HHN-0452</u> for patient collection instructions Specimen stored at 2-8 °C. Referred. Please see <u>Utilization</u> rules
Stoma Culture	Swab	Routine Swab		М	72 hours	MIC	STOMA	STOMA	Specimen stored at room temperature.
Stone Analysis (Calculus Analysis)	<ul> <li>a) Gall stone</li> <li>b) Renal stone</li> <li>c) Salivary stone</li> <li>d) Stone of other source</li> </ul>	Screw-cap jar Screw-cap jar Screw-cap jar Screw-cap jar	Total stone Total stone Total stone Total stone	С	4 Days 4 Days 4 Days 4 Days	LAB	CALC-G STONE-R STONE-SAL STONE-O	CALC-G STONE-RENAL STONE-SAL STONE-O	<ul><li>a) Indicate origin. Referred.</li><li>b). Indicate origin.</li><li>c). Indicate origin.</li><li>d) Indicate origin.</li></ul>
Stool: Coxsackie/Enterovirus	Stool	Sterile Screw-cap jar		Μ	4 days	MIC	STOOLCOX	STOCOX	To detect a <b>systemic</b> viral infection. Specify if a particular virus is suspected. Referred testing length is 3 weeks. See Form <u>HHN-0448</u> for patient collection instructions Specimen stored at 2-8 °C. Referred.
Stool: C difficile	Stool	Sterile Screw-cap jar		Μ	48 hours	MIC	CDIF	CDIF	Only liquid or unformed stool specimens are suitable. Specimen should be delivered within 2 hours or stored at 4°C.Collect only one specimen per day. See Form <u>HHN-0448</u> for patient collection instructions. Please see <u>Utilization</u> rules Specimen stored at 2-8 °C. Referred.
Stool: Cryptosporidium	Stool	Screw-cap jar with SAF Fixative		М	72 hours	MIC	CRYP	CRYP	Fill the container about 1/3 full, screw cap on tightly. Specimens should be no less than the size of a quarter. Mix specimen and SAF fixative well. Parasites may be passed intermittently. If symptoms persist after a negative result, send another specimen. See Form <u>HHN-0448</u> for patient collection instructions Specimen stored at room temperature.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Stool: Culture	Stool	Enteric Transport Medium		М	72 hours	MIC	STOOL	STOOL	Collect only one specimen. If it is negative and the symptoms continue, two more may be collected on separate days. Formed stool should be the size of a quarter. Liquid stool should be equal to the amount of the transport medium in the jar. <b>Routine culture includes Salmonella, Shigella, Yersinia, Campylobacter and E. coli</b> . If patient has eaten seafood, also order Vibrio Culture (VIB). See Form <u>HHN-0448</u> for patient collection instructions. Please see <u>Utilization</u> rules Specimen stored at room temperature.
Stool: Eosinophils					72 hours				Test no longer available.
Stool Viral PCR: (Norwalk)	Stool	Sterile Screw-cap jar		М	72 hours	MIC	NORWALK	NORWALK or STOOL VIRAL PCR	Generally involved in <b>outbreaks</b> of gastroenteritis. Referred. See Form <u>HHN-0448</u> for patient collection instructions Specimen stored at 2-8 °C. Referred. Includes: Norovirus G1 & G2, Astrovirus, Rotavirus, Adenovirus and Sapovirus.
Stool: Ova & Parasites	Stool	SAF		Μ	72 hours	MIC	OP	OPSCREEN	Fill the container about 1/3 full, screw cap on tightly. Specimens should be no less than the size of a quarter. Mix specimen and SAF fixative well. Parasites may be passed intermittently. If symptoms persist after a negative result, send another specimen. See Form <u>HHN-0448</u> for patient collection instructions Specimen stored at room temperature. Please see <u>Utilization</u> rules.
Stool: Rotavirus/Adenovirus				М					Test no longer available. See Stool Viral PCR (Norwalk).
Stool: TB	Stool	Sterile Screw-cap jar		Μ	smear 3 days 8 weeks	MIC	AFB	ТВС	Must contact Microbiology before collecting. Test performed only on immunocompromised or HIV positive patients. Referred. See Form <u>HHN-0448</u> for patient collection instructions Specimen stored at 2-8 °C. Referred.
Stool: White Blood Cells (WBC)									Test no longer available.
Strongyloides Serology	Blood	Red or GOLD	5 mL	М	4 weeks	LAB		STRON SCHIST	Includes Schistosoma serology
Sugar Chromatography	Urine	Screw-cap jar	1 mL	С	20 Days	LAB	SUGCHROM-U	SUGCHROM-U	Random urine. Store and send frozen. Referred - 1 mL Urine frozen

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Sulfamethoxazole (Bactrim)	Blood	Red	6 mL	С	7 Days	LAB	BACT	SULFAM	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Serum for a peak level should be drawn 60 minutes after dose. Referred - 1 mL Serum frozen
Sulfatide Antibody	Blood	GOLD	5 mL	С	16 Days	LAB	SULFAANTI	SULFATIDE AB	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, remove serum and store at 4°C. Referred – 2 mL Serum.
Surgical Swab	Swab	Routine Swab		М	72 hours	MIC	INC	SUR	Swab <b>only</b> the infected area. Bacteria from the surrounding area prevent accurate interpretation of the results. Indicate source of swab. Specimen stored at room temperature.
Surmontil (Trimipramine)	Blood	Red X 2	6 mL X 2	С	10 Days	LAB	TRIM	TRIM	Deliver to Chemistry immediately. Collect trough specimen within 1 hour prior to next dose or at least 12 hours after last dose. Separate serum from clot ASAP. Referred – 3 mL Serum
Suspected Measles Screen	Blood	Red or GOLD	5 mL	Μ	5 days			MEAS	Includes serology for IgM antibodies to Measles, Rubella, and Parvovirus. Collect on or after 3 <sup>rd</sup> day after onset of rash. Include dates of onset of fever and rash on requisition. If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred - Measles IgM and Parvovirus.
Sweat Chloride	Sweat			С	<24 Hours	LAB	SWEAT	CL -SWEAT	The DECRH Chemistry staff collects all sweat specimens. In-patient requests are performed Monday to Friday until 1400 hours. Out-patient appointments should be made for 0900 - 1100 hours Tuesday or Friday.
Syphilis Screen: Serology	Blood	Red or GOLD	5 mL	М	48 hours	LAB	SYPH	SYPH	If transported, separate serum from clot and send serum. 2-8°C if sending within 72 hours or Freeze at -20°C.
Syphilis Screen: Spinal fluid									Test no longer available. However, refer to <b>Spinal Fluid: Viral PCR</b> test in this manual, order <b>CSFPCR</b> . Indicate which virus is requested.
T3, Free	Blood	Light Green	1 mL	С	< 24 Hours	LAB	FT3	FT3	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. TSH is the preferred screening test. If TSH result is outside reference range, a Free T4 is performed. If TSH is < $0.1 \text{ mU/L}$ and Free T4 is normal, a Free T3 is performed. If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection.
T4 (Thyroxine), Free	Blood	Light Green	1 mL	С	< 24 Hours	LAB	FT4	FT4	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. TSH is the preferred screening test. If TSH result is outside reference range, a Free T4 is performed. If TSH is < 0.1 mU/L and Free T4 is normal, a Free T3 is performed. If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection.

Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use Laboratory User Manual Version 40.0 Page 223 of 242 Effective Date: January 24, 2022

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
T4/T8 Ratio									Please refer to Immunocompetence Profile
Tacrolimus (FK 506)	Blood	Lavender	4 mL	С	4 Days	LAB	FK506	FK506	Draw trough prior to next dose. Do not centrifuge. If transported, send as whole blood at 4°C.
TB Culture				М					See individual specimen type.
Tegretol (Carbamazepine)	Blood	Red	1 mL	С	< 24 Hours	LAB	TEG	CARB	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Draw trough immediately prior to next dose. If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection. See Chemistry Section in this manual for additional information.
Temazepam (Restoril)									Test no longer available
Testosterone	Blood	Light Green	1 mL	С	< 24 Hours	LAB	TEST	TEST	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If transported, plasma must be sent frozen if not received at DECRH within 48 hours of collection.
Testosterone Bioavailable	Blood	Light Green	1 mL	С	<24 Hours	LAB	TESTOSTB	TESTB	Note: This is a calculated result and includes testing for total testosterone and sex hormone binding globulin. Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If transported, plasma must be sent frozen if not received at DECRH within 48 hours of collection.
Testosterone Free									Test is <b>no longer available</b> .
THC (Tetrahydrocannabinoids)	Urine	Screw-cap jar	5 mL	С	< 24 Hours	LAB	URINE-CANN	THC-U	Random specimen. This is a semi-quantitative test. If transported, urine must be sent frozen if not received at DECRH within 48 hours of collection.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Theophylline (Aminophylline)	Blood	Red	1 mL	С	< 24 Hours	LAB	THEO	THEO	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection. <b>Oral - sustained release:</b> Twice daily products: draw peak about 4 hours after dose. Once daily products: draw peak about 10 hours after dose. Consult individual product monographs. Draw trough immediately prior to dose. <b>Liquid and plain uncoated tablets:</b> Draw peak 1-2 hours after liquid dose or 2 hours after tablet dose. Draw trough immediately prior to dose. <b>IV loading dose:</b> Draw 30 minutes after an IV loading dose. <b>Followed by IV continuous infusion:</b> Draw 24-48 hours after the beginning of the maintenance infusion. See Chemistry Section in this manual for additional information.
Thiamine (Vitamin B1)	Blood	Lavender	4 mL	С	7 Days	LAB	THIA	THIA	Collect following 12 hour fast. Protect from light. Deliver to Chemistry immediately. If transportijng mix specimen and transfer whole blood to a polypropylene vial, strore and ship protected from light at 4°C. Specimen must be frozen if not arriving at DECRH same day of collection. Referred - 2 mL Whole Blood - frozen
Thiocyanate	Blood	Red	6 mL	С	7 Days	LAB	THIO	THIO	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Referred - 3 mL Serum at 4°C.
Thiopurine Metabolites	Blood	Lavender	4 mL	С		LAB	THIOPURINE	THIOPURINE	Store and ship specimen at 4°C. <b>Maintain in original container and do not separate.</b> Referred - Whole blood refrigerated
Thioridazine (Mellaril)	Blood	Red	6 mL	С	15 Days	LAB		THIOR	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Referred – 1.5 mL Serum
Throat	Swab	Routine Swab		М	24- 48 hour	MIC	THROAT	TS	Cultured for Beta Haemolytic Streptococcus (Groups A, C, G) and Arcanobacterium haemolyticum only. Specimen stored at room temperature.
Throat Special Culture	Swab	Routine Swab		М	48 hours	MIC	THRSP	TSC	For use in the <b>unusual</b> cases where other organisms are suspected of causing pharyngitis. Specimen stored at room temperature.

Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use Laboratory User Manual Version 40.0 Page 225 of 242 Effective Date: January 24, 2022

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Throat: GC	Swab	Routine Swab		М	72 hours	MIC	TGC	GCT	PCR testing available (see Chlamydia trachomatis/ Neisseria gonorrheae PCR:Throat) Specimen stored at room temperature.
Throat: Virus	Swab	Viral Transport Swab		М					See specific virus.
Throat: Yeast	Swab	Routine Swab		М	72 hours	MIC	TSY	TSY	Specimen stored at room temperature.
Thrombin Time	Blood	Blue (Sodium Citrate)	2.7 mL Exactly	н	21 Days	LAB	Γ	тт	<ul> <li>tDeliver to the lab within 2 hours of collection. If transported, platelet poor plasma (count &lt; 10) must be achieved with the following procedure: <ol> <li>1<sup>st</sup> spin: Spin specimens in the centrifuge, after 1<sup>st</sup> spin is complete, remove blue tubes from centrifuge and transfer 1<sup>st</sup> spin plasma to a separate labeled 12x75 plastic tube.</li> <li>2<sup>nd</sup> spin: Cap the 12x75 tubes and re-spin plasma, after 2<sup>nd</sup> spin is complete, carefully remove tubes from centrifuge, without disrupting platelets at bottom of tube.</li> <li>Carefully remove platelet poor plasma, leaving sediment (containing platelets) in bottom of tube. Transfer directly to labeled 12x75 plastic tube for the platelet count. Perform and record plt count on label if applicable.</li> <li>Send frozen in 1 aliquot of 2 mL.</li> </ol> </li> </ul>
Thrombophilia Screen									Profile no longer available
Thyroglobulin	Blood	GOLD	5 mL	С	14 Days	LAB	THYRO	THYRO	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, remove serum, and store at 4°C. If transported, serum must be sent frozen in 2 aliquots if not received at DECRH within 48 hours of collection. ANTI-TG testing will also be performed as part of the Thyroglobulin panel. Referred – 1.5 mL Serum-frozen.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Thyroid Stimulating Hormone (TSH)	Blood	Light Green	1 mL	С	<24 Hours	LAB	TSH	TSH	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If TSH result is outside reference range, a Free T4 is performed. If TSH is < 0.1 mU/L and Free T4 is normal, a Free T3 is performed. If transported, plasma must be sent frozen if not received at DECRH within 48 hours of collection. Please see <u>Utilization</u> rules.
Thyroid Receptor Antibody	Blood	GOLD	5 mL	С	13 Days	LAB	TRAB	TRAB	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, remove serum, and store at 4°C. If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection. Indicate thyroid status of patient including presence of exophthalmos. See Chemistry Section in this manual for additional information. Referred - 1 mL serum frozen.
Thyrotropin Releasing Hormone (TRH) Stimulation Test	Blood	Light Green	1 mL each	С	24-48 Hours	LAB	TRH	TRH	See Chemistry Section in this manual for additional information.
Thyroxine Binding Globulin	Blood	GOLD	5 mL	С	5 Days	LAB	TBG	TBG	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, remove serum and store at 4°C. If transported, freeze serum if not received at DECH within 24 hours. Referred - 1 mL Serum
Tick Identification	Tick	Sterile Screw-cap jar		М	48 hours	MIC	INS	INS	Place a few drops of water in the jar. Specimen stored at room temperature.
Tissue: C&S	Tissue	Sterile Screw-cap jar		М	72 hours	MIC	TIS	TIS	Deliver <b>immediately</b> . If transported store at 2-8 °C
Tissue Transglutaminase	Blood	Red	7 mL	Н	21 days	LAB	CELIAC	CELIAC	Refer to Celiac Profile
Tissue: TB	Tissue	Sterile Screw-cap jar		М	smear 3 days Final 8 weeks	MIC	AFB	ТВС	Deliver <b>immediately</b> . If transported store at 2-8 °C Referred.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Tobramycin	Blood	Red	1 mL	С	< 24 Hours	LAB	ТОВ	ТОВ	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Order includes trough and peak specimens. Draw trough 30 minutes prior to next dose. Draw peak: 2 hours after IM dose or 1 hour after completion of a traditional IV infusion. For an extended interval infusion and once daily dosing regimen consult pharmacy. If transported, serum must be refrigerated within 8 hours and must be sent frozen if not received at DECRH within 48 hours of collection. See Chemistry Section in this manual for additional information.
Tobramycin - Random	Blood	Red	1 mL	С	< 24 Hours	LAB	TOB-R	TOB-R	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. If transported, serum must be refrigerated within 8 hours and must be sent frozen if not received at DECRH within 48 hours of collection. See Chemistry Section in this manual for additional information.
Tobramycin - Trough	Blood	Red	1 mL	С	< 24 Hours	LAB	ТОВ-Т	ТОВ-Т	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Draw trough 30 minutes prior to next dose. If transported, serum must be refrigerated within 8 hours and must be sent frozen if not received at DECRH within 48 hours of collection. See Chemistry Section in this manual for additional information.
Tofranil (Imipramine)	Blood	Red X 2	6 mL X 2	С	10 Days	LAB	TOF	IMIP	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Collect within 1 hour prior to next dose or at least 12 hours after last dose. Referred – 3 mL serum.
Tongue	Swab	Routine Swab		М	48 hours	MIC	MG	MG	Specimen stored at room temperature.
Tonsillar Abscess	Swab	Routine Swab		М	14 days			PERITONS	Specimen stored at room temperature.
Topiramate (Topamax)	Blood	Red	6 mL	С	12 Days	LAB	TOPIRAMATE	ТОР	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Referred - 2 mL Serum frozen

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
TORCH Serology (on infants)	Blood	Red or GOLD	5 mL	Μ	10 days	LAB	TORCH	TORCH	This includes the following tests: CMV IgG, CMV IgM, Toxoplasmosis IgG, Toxoplasmosis IgM, Herpes IgG, Herpes IgM, Rubella IgG and Rubella IgM. If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred.
Toxic Panel, Drug (Drug Toxic Panel)	Blood	Red and Gray	6 mL and Full	С	STAT ≤45 Minutes Routine <24 Hours	LAB	DRUGTOX	DRUG-TOX	Red tube must be delivered to the lab within 2 hours; otherwise, centrifuge specimen, remove serum within 2 hours of collection and store at 4°C. If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection. Panel includes: quantitative tests for Acetaminophen, Ethyl Alcohol, Salicylate, and Osmolality; qualitative results for Barbiturates, Benzodiazepines and Tricyclics These tests may be ordered individually. <b>Gray tube for Ethyl Alcohol:</b> Do not use any type of alcohol to disinfect skin. The tube must be allowed to draw to complete vacuum. Invert tube several times to mix. <b>Keep tube sealed until analysis</b> . Medico legal specimens should be delivered directly to a police officer, not to the laboratory. If transported, do not centrifuge. See Chemistry Section in this manual for additional information.
Toxoplasmosis IgG Avidity	Blood	Red or GOLD	5 mL	М	3 weeks			TOXGAV	If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred.
Toxoplasmosis IgG	Blood	Red or GOLD	5 mL	М	1 week	LAB	TOXG	TOXG	(Immune Status) If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred.
Toxoplasmosis IgM	Blood	Red or GOLD	5 mL	М	1 week	LAB	ТОХМ	ТОХМ	(Recent Infection) If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred.
TPMT (Thiopurine Methyltransferase) Genotyping	Blood	Lavender	3 mL	С	20 days	LAB	TPMTGENO	TPMTGENO	Do not separate. Store and ship specimens in original container at Room Temperature. Sample stable for 7 days. Referred - Whole Blood
TPPA (Treponema Pallidum Particle Agglutination) (Confirmation Test)	Blood	Red or GOLD	5 mL	Μ	1 week	LAB	TPPA	ТРРА	The <u>laboratory orders</u> this test automatically, if the syphilis screening test is positive. Referred.
Transferrin	Blood	Light green	1 mL	С	< 24 Hours	LAB	IRON	TRANS	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Includes Iron, TIBC and Transferrin Saturation. 8 hour fast is preferable, non-fasting specimens will be accepted.

Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Transfusion Reaction Investigation	Blood and Urine	Pink Screw-cap jar	6 mL 15 mL	С	1 hr		TRI U/A	TRI U/A	It is the responsibility of the nursing unit to return the unit of blood to Transfusion Medicine following a transfusion reaction. A new specimen of blood must be collected immediately. A Direct Antiglobulin Test will be performed and, if indicated, the specimen will be checked for antibodies. A Urinalysis on the patient will be performed as well; stipulate that it is required for a transfusion reaction. A culture on the contents of the returned bag is performed, if necessary. Please see instructions on the transfusion reaction form. All questions under clinical report section of reaction form must be answered. Physician or a designate must sign the reaction form. <b>An Incident Report (HIRS) must be filed out by the nursing unit as soon as</b> <b>possible.</b>
Transplant Antibodies (HLA Antibody Testing) (Cytotoxic Antibodies)	Blood	Red	7 mL	С	5 Days	LAB	TRANSBBK	TR	A Nova Scotia Health Authority Histocompatibility Laboratory requisition must be completed by the ordering site and it must be signed by the phlebotomist. These requisitions are available from the website of the reference laboratory ( <u>www.cdha.nshealth.ca/programsandservices/</u> ). Serum must be separated from the cells within 2 hours of collection and stored at 4°C. Referred.
Trazodone (Desyrel)	Blood	Red	6 mL	С	13 Days	LAB	TRAZ	TRAZ	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Collect trough specimen prior to next dose after steady state (2 days or more after commencement of therapy) Referred – 1.5 mL serum.
TRH (Thyrotropin Releasing Hormone Stimulation Test	Blood	Light Green	1 mL each	С	24-48 hours	LAB	TRH	TRH	See Chemistry Section in this manual for additional information.
Trichinella Serology	Blood	Red	4 mL	М	2 weeks	LAB	SEROL	SEROL	If transported, separate serum from clot and send serum. 2-8°C same day
Trichomonas vaginalis	Swab	Routine Swab		М	24 hours	MIC	TRICH	TRICH	Deliver <b>immediately</b> . May be stored at 4°C for up to 36 hours.
Triglycerides	Blood	Light Green	1 mL	С	< 24 Hours	LAB	TRIG	TRIG	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. 12-14 hour fast required. This test should not be done within 3 months of myocardial infarction, surgery or similar trauma.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Trimipramine (Surmontil)	Blood	Red X 2	6 mL X 2	С	10 Days	LAB	TRIM	TRIM	Deliver to Chemistry immediately. Collect trough specimen within 1 hour prior to next dose or at least 12 hours after last dose. Separate serum from clot ASAP. Referred – 3 mL Serum
Triple Bolis Test				С	15 Days				Call Medical Day Care at DECRH for testing information.
Troponin T									This test is no longer available. Replace with hs-cTnT
Troponin T High Sensitivity	Blood	Light Green	1 mL	С	STAT ≤45 minutes Routine	LAB	TROPTHS	hs-cTnT or TROPT	Specimen must be delivered to lab within 2 hours; otherwise, centrifuge specimen within 2 hours of collection, store upright at 4°C. Serial sampling is recommended at time 0, 3 hours and 6 hours after presentation.
TRP (Tubular Reabsorption of Phosphate)	Blood and Urine	Light Green and Large plastic Bottle	1 mL and Complete 24 hr output	C C	< 24 Hours	LAB	TRP TRP	TRP	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Collect the blood sample at a convenient time during the urine collection period. If transported, send 10 mL aliquot.
Trypsin (Trypsinogen)	Blood	RED	5 mL	С	12 Days	LAB	TRYP	TRYP	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, remove serum, store at 4°C. Freeze within 24 hrs of collection. Referred - 1 mL Serum frozen
Tryptase	Blood	GOLD	5 mL	С	6 days	LAB	ТКҮРТ	TRYPT	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, remove serum, store at 4°C. Collect specimen 30-180 minutes post allergic reaction. Collect anytime to assess systemic mastocytosis or mast cell activation syndrome. Referred - 1 mL Serum frozen
TSH (Thyroid Stimulating Hormone)	Blood	Light Green	1 mL	С	< 24 Hours	LAB	TSH	TSH	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If TSH result is outside reference range, a Free T4 is performed. If TSH is < 0.1 mU/L and Free T4 is normal, a Free T3 is performed. If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection. Please see <u>Utilization</u> rules.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Tyrosine	a) Blood	Dark Green	4 mL	C	20 Days	LAB	TYRO	TYRO	a) Deliver to Chemistry immediately. Separate and freeze plasma within 2 hours of collection. Referred - 0.5 mL Plasma frozen
Ulcer	Swab	Routine Swab		M	72 hours	MIC	WOUND	ULC	Specimen stored at room temperature.
	a) Blood	Light Green	1 mL	С			UREA	BUN	a) Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C.
Urea (BUN)	b) Urine	Large plastic bottle	Complete 24 hr output	С	< 24 Hours	LAB	UREAEX	UNE	b) Measured as urea nitrogen excretion. If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot.
	c)Urine	Screw-cap jar	2 mL	С				UREA-UR	c) Random specimen Please see <u>Utilization</u> rules
Urea Breath Test	Breath	Breath collection tubes	Fill tube	С	14 Days	LAB	UREABREATH	UBT	Testing is restricted to gastroenterologists only after consultation with Medical Biochemist Follow special collection instructions provided with collection kit. Please see <u>Utilization</u> rules Referred
Ureaplasma Culture				М					No longer available -see Ureaplasma Ureacyticum PCR
Ureaplasma Ureacyticum PCR	Bronc wash, NPA, Rectal, Throat, Urine, Urethral, Vaginal	Viral transport media		М	14 days			UREAPLASMA PCR	Swabs must be collected in viral transport media (UTM). Fluids, at least 1 mL of fluid should be re-suspended in transport media. Deliver immediately. If transported freeze at -70°C.
Urethra	Swab	Routine Swab		М	72 hours	MIC	URETH	URETH	FOR DEFINITIVE IDENTIFICATION and SENSITIVITY TESTING ONLY <u>see also</u> Chlamydia Trachomatis / Gonorrhoeae: Cervix / Urethra Specimen stored at room temperature.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
	a) Blood	Light Green	1 mL	С	< 24 Hours		UA	UA	a) Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C.
Uric Acid (Urate)	b) Urine	Large plastic bottle	Complete 24 hr output	С	< 24 Hours	LAB	UA-24H	UA-24H	b If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot, mix thoroughly to resuspend precipitated urates before
	c) Body Fluid	Dark Green	2 mL	С	< 24 Hours		UA-F	UA-F	aliquoting. c) Invert tube several times to mix. Indicate origin of fluid.
Urinalysis, Routine and Microscopic	Urine	Screw-cap jar	15 mL	С	STAT ≤1 Hour Routine	LAB	U/A	U/A	Random fresh specimen. Within the hospital setting, specimens must be delivered within 2 hours of collection. In a non-hospital setting, specimens must be immediately refrigerated and delivered as soon as possible. Samples being transported to a testing site should be sent with a cold pack.
Urine Culture: Catheter	Urine	Sterile Screw-cap jar	2 mL	М	24 hours	MIC	UR	UR	Indicate source as <b>catheter</b> . Indicate if indwelling catheter or In and Out Catheter. See Form <u>HHN-0822</u> for patient collection instructions Specimen stored at 2-8 °C.
Urine: Cytomegalovirus	Urine	Sterile Screw-cap jar	15 mL	М	7 days	MIC	CMVC	CMVC	Call Microbiology before collection. Must be delivered to laboratory immediately after voiding. Referred.
Urine: Eosinophils									Test no longer available.
Urine: GC				М					See Chlamydia Trachomatis / Gonorrhoeae: Urine. See Form <u>HHN-0822</u> for patient collection instructions Specimen stored at 2-8 °C.
Urine Culture: Routine	Urine	Sterile Screw-cap jar	2 mL	М	24 hours	MIC	UR	UR	See Form <u>HHN-0822</u> for patient collection instructions Specimen stored at 2-8 °C.
Urine: TB	Urine	Sterile Screw-cap jar	2 mL	М	8 weeks	MIC	AFB	TBC	Referred. See Form <u>HHN-0822</u> for patient collection instructions Specimen stored at 2-8 °C.
Urine: Yeast/fungus	Urine	Sterile Screw-cap jar	2 mL	М	72 hours	MIC	URY	URY	Includes routine culture. See Form <u>HHN-0822</u> for patient collection instructions. Specimen stored at 2-8 °C.

Any document appearing in paper form is not controlled and should ALWAYS be checked against the electronic version prior to use Laboratory User Manual Version 40.0 Page 233 of 242 Effective Date: January 24, 2022

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Uro-1-Synthetase (Porphobilinogen Deaminase)	Blood	Dark Green	6 mL	С	7 Days	LAB	URO	URO	Specimen must be delivered to lab within 2 hrs of collection. Store and send whole blood at 4°C. Do not separate. Referred - whole blood refrigerated
Urobilinogen									Test not available.
Vaccine-Induced Prothrombic Immune Thrombocytopenia (VIPIT)	Blood	Red and Blue	2 X 6 mL and 2 X 2.7 mL	н	10 Days	LAB	VIPIT	VIPIT	<ul> <li>Specimen must be delivered to lab within 1 hour; otherwise, centrifuge specimen within 1 hour, and separate serum/plasma. Specimens must be double-spun, aliquoted and clearly marked plasma and serum. If transported, platelet poor plasma (count &lt; 10) must be achieved with the following procedure: <ol> <li>1. 1<sup>st</sup> spin: Spin specimens in the centrifuge, after 1<sup>st</sup> spin is complete, remove blue tubes from centrifuge and transfer 1<sup>st</sup> spin plasma to a separate labeled 12x75 plastic tube.</li> <li>2. 2<sup>nd</sup> spin: Cap the 12x75 tubes and re-spin plasma, after 2<sup>nd</sup> spin is complete, carefully remove tubes from centrifuge, without disrupting platelets at bottom of tube.</li> <li>3. Carefully remove platelet poor plasma, leaving sediment (containing platelets) in bottom of tube. Transfer directly to labeled 12x75 plastic tube for the platelet count. Perform and record plt count on label.</li> </ol> </li> <li>Freeze promptly. Send frozen: 3 aliquots of "clearly marked" plasma and 3 aliquots of "clearly marked" serum. Referred.</li> </ul>
Vaginal (Bacterial Vaginosis & Yeast)	Swab	Routine Swab		М	48-72 hours	MIC	VAG	VAG	Do not fix smear if sending a smear but we do not require a smear to be sent. Specimen stored at room temperature.
Valium (Diazepam)	Blood	Red	6 mL	С	15 Days	LAB	DIAZ	DIAZ	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Referred – 1 mL Serum
Valproic Acid (Depakene)(Epival)	Blood	Red	1 mL	С	< 24 Hours	LAB	VALP	VALP	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Trough levels are generally measured. Draw trough immediately prior to next dose. If transported, serum must be sent frozen if not received at DECRH within 48 hours of collection. See Chemistry Section in this manual for additional information.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Vancomycin	Blood	Red	1 mL	С	< 24 Hours	LAB		VANCO	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Draw trough immediately prior to next dose. Refer to <u>TABLE</u> for more information. If transported, serum must be refrigerated within 8 hours and must be sent frozen if not received at DECRH within 48 hours of collection. See Chemistry Section in this manual for additional information
Vancomycin - Random	Blood	Red	1 mL	С	< 24 Hours	LAB	VANCO-R	VANCO-R	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Draw trough immediately prior to next dose. Refer to <u>TABLE</u> for more information. If transported, serum must be refrigerated within 8 hours and must be sent frozen if not received at DECRH within 48 hours of collection. See Chemistry Section in this manual for additional information
Varicella zoster PCR	Swab	Viral Transport Swab		М	72 hours	MIC	VZPCR	VZPCR	Swab vesicle fluid. Indicate Varicella zoster on the request. Referred. UTM viral transport media available from Microbiology. If transported, send serum. 2-8°C if sending same day or Freeze at -70°C.
Varicella zoster IgG	Blood	Red or GOLD	5 mL	М	7 days	LAB	VZ	VZG	(Immune Status) If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C.
Varicella zoster IgM	Blood	Red or GOLD	5 mL	М	7 days	LAB	VZIGM	VZM	(Recent Infection). <b>Includes Varicella zoster IgG.</b> If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C. Referred.
Vasoactive Intestinal Polypeptide	Blood	Lavender	4 mL	С	10 Days	LAB	VIP	VIP	Deliver to Chemistry immediately. 8 hour fast required. If transported, separate and freeze plasma immediately. Referred - 1 mL Plasma frozen
Vasopressin (ADH) (Antidiuretic Hormone)									<b>Test no longer available.</b> Please refer to Copeptin proAVP. Has replaced ADH and AVP as indicators of water balance disorders.
VDRL				М					See syphilis
Vibrio Culture	Stool	Enteric Transport Medium		М	72 hours	MIC	VIB	VIB	Order when patient has eaten seafood. See <i>Stool: Culture</i> for further comments. See Form HHN-0448 for patient collection instructions Specimen stored at room temperature

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Viral Load: HCV	Blood	Lavender x 2	3 mL x 2	Μ	10 days	LAB	HCVLOAD	HCVLOAD	Deliver immediately. Specimen must be delivered to the lab within 6 hours; otherwise specimen must be centrifuged at 1100 g for 20 minutes, separate plasma from cells immediately and store at -70 °C. If transported, send plasma frozen <b>on dry ice</b> . Referred.
Viral Load: HIV	Blood	Lavender x 2	3 mL x 2	Μ	10 days	LAB	HIVVLOAD	HIVLOAD	Deliver immediately. Specimen must be delivered to the lab within hours; otherwise specimen must be centrifuged at 1100 g for 20 minutes, separate plasma from cells immediately and store at -70 °C. If transported, send plasma frozen <b>on dry ice</b> . Referred.
Viral Serology	Blood	Red or GOLD	5 mL	М	Test dependent	LAB	SEROL	SEROL	See under name of specific virus. Use this test only for viruses not listed. Enter the name of the virus on the requisition. If transported, separate serum from clot and send serum. 2-8°C if sending same day or Freeze at -70°C.
Viscosity	Blood	Gold X 2	6 mL X 2	С	10 Days	LAB	VIS	VIS	Collect and separate at 37° C. Separate ASAP and refrigerate serum. If transported send serum at 4°C. Referred - 6 mL Serum
Vitamin A	Blood	Red	6 mL	С	17 Days	LAB	VITA	VITA	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Avoid hemolysis. Protect from light. Referred - 1 mL Serum frozen
Vitamin B1 (Thiamine)	Blood	Lavender	4 mL	С	7 days	LAB	THIA	THIA	Collect following 12 hour fast. Protect from light. Deliver to Chemistry immediately. If transporting mix specimen and transfer whole blood to a polypropylene vial, strore and ship protected from light at 4°C. Specimen must be frozen if not arriving at DECRH same day of collection. Referred - 2 mL Whole Blood - frozen
Vitamin B12 (B12)	Blood	Light Green	1 mL	С	< 24 Hours	LAB	VIT B12	B12	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. If transported, plasma must be sent frozen if not received at DECRH within 48 hours of collection. Please see <u>Utilization</u> rules
Vitamin B6 (Pyridoxine)	Blood	Lavender	4 mL	С	15 Days	LAB	VITB6	VITB6	Protect from light. Deliver to Chemistry immediately. Separate plasma from cells within 1 hour of collection. Referred - 2 mL Plasma frozen
Vitamin C	Blood	Gold	6 mL	С	15 Days	LAB	VITC	VITC	Protect from light. Deliver to Chemistry immediately. Separate serum from cells and freeze ASAP. Referred - 2 mL serum frozen

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Vitamin D (25-Hydroxy)	Blood	Gold	1 mL	С	< 24 Hours	LAB	VIT D	VITD	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Used to assess Vitamin D nutritional status. If transported, serum must be sent frozen if not received at DECH within 4 days of collection. Please see <u>Utilization</u> rules
Vitamin D (1, 25 Di-hydroxy)					12 Days				Testing only available after consultation with the Medical Biochemist
Vitamin E	Blood	Gold	5 mL	С	12 Days	LAB	VITE	VITE	Protect from light. Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hr of collection, store upright at 4°C. Referred - 2 mL Serum frozen
VMA	Urine	Large plastic bottle with HCL	Complete 24 hour output	С	15 Days	LAB	VMA-24H	VMA-24H	Refer to <u>Diet/Drug Restriction form HHN-0840</u> for patient restrictions. Collect urine in a container with 25 mL of 6 mol/L (6N) HCl acid. The final pH must be maintained at 2-4. If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 25 mL aliquot. Referred – 25 mL Urine
VMA - Spot Test									Test no longer available. Order VMA-24H
VNTR	Blood	Lavender x 2	4 mL x 2	С	22 Days	LAB	VNTR	VNTR	Whole blood. Store at 4°C. Referred – Whole Blood
Vomitus				М					TEST NO LONGER AVAILABLE

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Von Willebrand's Investigation Includes: - Von Willebrand Antigen - Von Willebrand Activity - Factor VIII (F8)	Blood	Blue (Sodium Citrate) x 4	2.7 mL Exactly in each tube	Н	1 – 2 weeks	LAB	VWI	VWI	<ul> <li>All specimens must be drawn using a 21 or larger gauge needle.</li> <li>Deliver to the lab within 2 hours of collection. If transported, platlet poor plasma (count &lt; 10) must be achieved with the following procedure: <ol> <li>1. 1<sup>st</sup> spin: Spin specimens in the centrifuge, after 1<sup>st</sup> spin is complete, remove blue tubes from centrifuge and transfer 1<sup>st</sup> spin plasma to a separate labeled 12x75 plastic tube.</li> </ol> </li> <li>2<sup>nd</sup> spin: Cap the 12x75 tubes and re-spin plasma, after 2<sup>nd</sup> spin is complete, carefully remove tubes from centrifuge, without disrupting platelets at bottom of tube.</li> <li>3. Carefully remove platelet poor plasma, leaving sediment (containing platelets) in bottom of tube. Transfer directly to labeled 12x75 plastic tube for the platelet count. Perform and record plt count on label if applicable.</li> <li>4. Send frozen in 3 aliquots of 2 mL each.</li> </ul>
Von Willebrands Multimers	Blood	Blue (Sodium Citrate)	2.7 mL	С	35 Days	LAB	VWM	VWM	<ul> <li>Deliver to the lab within 2 hours of collection. If transported, platlet poor plasma (count &lt; 10) must be achieved with the following procedure:</li> <li>24. 1<sup>st</sup> spin: Spin specimens in the centrifuge, after 1<sup>st</sup> spin is complete, remove blue tubes from centrifuge and transfer 1<sup>st</sup> spin plasma to a separate labeled 12x75 plastic tube.</li> <li>25. 2<sup>nd</sup> spin: Cap the 12x75 tubes and re-spin plasma, after 2<sup>nd</sup> spin is complete, carefully remove tubes from centrifuge, without disrupting platelets at bottom of tube.</li> <li>26. Carefully remove platelet poor plasma, leaving sediment (containing platelets) in bottom of tube. Transfer directly to labeled 12x75 plastic tube for the platelet count. Perform and record plt count on label if applicable.</li> <li>27. Send frozen in 3 aliquots of 2 mL each.</li> </ul>
VRE	Swab	Routine Swab		М	48 hours	MIC	VRE	VRE	Peri-anal/rectal specimen. Screen for vancomycin-resistant Enterococcus Specimen stored at room temperature

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Water Deprivation Test, Overnight	Blood and Urine			С		LAB			See Chemistry Section in this manual for additional information.
West Nile Virus Serology	Blood	Red or GOLD	5 mL	М	7 days	LAB	WESTNILE	WESTNILE	If transported, separate serum from clot and send serum and Freeze at -70°C. Referred.
West Nile Virus: Spinal fluid	Spinal fluid	Sterile Screw-cap tube	1 mL	М	72 hours	LAB	WESTNILE CSF	WESTNILE CSF	Deliver to the lab immediately. Referred. If transporting Place minimum 0.5ml in NUNC tube. Freeze at -70°C.
Worm		Sterile Screw-cap jar		М	48 hours	MIC	WORM	WORM	Send worm in saline. Do not send in formalin. Specimen stored at room temperature
Wound Swab: Mycology	Swab	Routine Swab		М	smear 3 days final 4 weeks	MIC	MYC	MYC	Indicate source of specimen. Specimen stored at room temperature.
Wound Swab: C&S	Swab	Routine Swab		М	72 hours	MIC	WOUND	WOUND	Swab <b>only</b> the infected area. Bacteria from the surrounding area prevent accurate interpretation of the results. Indicate source of swab. Specimen stored at room temperature.
Xanax (Alprazolam)									Test no longer routinely available
Xylose Absorption	Blood	Red or GOLD	5 mL for each specime n	С	35 Days	LAB	XYLOSE	XYLOSE	Deliver to Chemistry immediately. Separate serum and freeze ASAP. Clearly identify the pre-dose and post-dose samples. Test protocol: Collect fasting (>8 h) pre-Xylose specimen. Administer p.o. 5g D-Xylose freshly dissolved in 250 mL water followed by another 250 mL of water. Collect second (post dose) specimen exactly 1 hour after ingestion. Referred - 2 mL serum per specimen frozen
Yersinia Culture	Stool	Enteric Transport Medium		Μ	72 hours	MIC	STOOL	STOOL	Collect only one specimen. If it is negative and the symptoms continue, two more may be collected on separate days. Formed stool should be the size of a quarter. Liquid stool should be equal to the amount of the transport medium in the jar. <b>Routine culture includes Salmonella, Shigella, Yersinia, Campylobacter and E. coli</b> . If patient has eaten seafood, also order Vibrio Culture (VIB). See Form <u>HHN-0448</u> for patient collection instructions Specimen stored at room temperature.

Test	Specimen	Container	Amount	Department	Turnaround Time	OE Category	OE Mnemonic	Lab Mnemonic	Collection/ Referral Instructions Unless otherwise specified below, blood tubes for centrifugation must be spun at 1300 g for 10 minutes (swing bucket rotor) or 15 minutes (fixed angle rotor)
Zarontin (Ethosuximide)	Blood	Red	6 mL	С	10 Days	LAB	ETHO	ETHO	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Draw trough within 1 hour prior to next dose or at least 12 hours after last dose. Referred - 0.5 mL Serum
Zika	Blood	Red or gold	6 ml	Μ	2-4 weeks	LAB	SEROL	SEROL	Must provide relevant travel history (place and dates) Must provide clinical history (i.e. symptoms if any, pregnancy status) Females who are asymptomatic and not pregnant will not be tested Males are not tested unless partner is pregnant If transported, separate serum from clot and send serum and Freeze at -70°C.
Zinc	a) Blood b) Urine	Royal Blue EDTA Heavy metal free large plastic bottle	6 mL Complete 24 hour output	C C	15 Days 15 days	LAB	ZINC	ZINC ZINC-24H	<ul> <li>a) Deliver to Chemistry immediately. Transfer 2 mL plasma to a metal-free polypropylene vial within 30 min of collection. There must be <b>no hemolysis</b> Referred – 2 mL Plasma</li> <li>b) Refer to <u>Diet/Drug Restriction form HHN-0840</u> for patient restrictions. If sent from Health Centre or other outside collection site, please refer entire collection in original container. If sent from hospital laboratory state 24h volume and send 10 mL aliquot. Measure 24 hour urine using an acid washed cylinder and transfer aliquot to a metal-free polypropylene vial</li> </ul>
Zinc Protoporphyrin	Blood	Royal Blue EDTA	6 mL	С	15 Days	LAB		ZPP	Referred – 10 mL Urine Do not centrifuge. Store and send at 4°C. Draw blood on Monday to Wednesday only. Refer same day as collected. Referred - 6 mL Whole Blood
Zoloft (Sertraline)	Blood	Red	6 mL	С	10 Days	LAB	ZOLOFT	ZOLOFT	Specimen must be delivered to lab within 2 hrs; otherwise, centrifuge specimen within 2 hrs of collection, remove serum, store at 4°C. Patient should be on the drug for at least 1 week prior to testing. Draw trough prior to next dose. Referred - 1 mL Serum

## Summary of changes in Version 40.0

Please note that page numbers are approximate, as saving the document as a pdf causes page content to shift

Page no.	Subject	Change
32	Haematology Critical Values	Added and "equal to" sign for all the critical values to indicate $\leq$ or $\geq$ for all critical values. Updated LKC for DECH and critical values for Moncton and SJ. K.Pupek
100-101	PD-L1, NGS, MMR & molecular testing on Cytology samples	New instructions for Cytology specimen collections to facilitate molecular & specialized IHC testing. D. Hale
192	Reference to MMR testing on Cytology samples	New instruction. D. Hale
196	Reference to NGS testing on Cytology samples	New instruction. D. Hale
202	Reference to PD-L1 testing on Cytology samples	New instruction. D. Hale
103	17-hydroxyprogesterone	Patient sex and age required added and handling instructions updated. No longer need to freeze immediately.
144	Creatine	Sample type changed to red only
181	IGF Binding Protein 3	Sample handling updated, separate and freeze within 2 hours if not delivered to lab within 2 hours. Tube type also changed to GOLD.
144	C-Peptide	10 hour fast, stable refrigerated as original sample for 48 hours, spin, aliquot and freeze prior to 48 hours post collection.
109	Amino Acid Quant Urine	No longer need to freeze immediately, can be stored and sent to DECRH at 4°C.
103	1,25-dihydroxyvitamin D	Added collection inctructions
123	Beta 2 microglobulins	No longer need to freeze immediately, can be stored and sent to DECRH at 4°C.
159	Estrone	Red top tube not gold required
161	Fatty Acid Profile	Dark green tube preferred, sent frozen
146	Cyclic AMP	Testing no longer available
137	Chromogranin A	Can remain at 4°C, only freeze if not going to DECRH within 24 hours
201	Paraneoplastic Autoantibody Evaluation	Updated for referral to ICL

do not print do not print

218	Siderocytes	Test not available to be ordered outside of Haem lab. Removed from Test Index.
109	Aluminum	Referring as whole blood
125	Bismuth	Referring as whole blood
141	Copper	Referring as whole blood
188	Manganese	Referring as whole blood
167	Glucose (CSF)	No longer adding NaFI for referral (testing performed at site of collection)
177	HLAB27	Removed "Request heated service" during winter months
180	Immunocompetence Profile	Removed "Request heated service" during winter months
184	Leukemia/Lymphoma Profile	Removed "Request heated service" during winter months
156	EBV VCA IGM	Updated test information, department and comment
58	Vancomycin	Second target range for complicated infections removed (Vancomycin Dosing and Monitoring Guidelines – Amended October 2020) Added peak information
235	Vancomycin	Added link to TDM table
5	Contact info	Updated Haematology & Specimen Collection
224	T4/T8	Refer to ICP
205	PNH	Updated delivery instructions