

Laboratory Lines

News from Florida Hospital Clinical Laboratories and Florida Pathology Lab (FPL)

FACTOR CONCENTRATES

Factor Concentrates are stored, prepared and distributed by the Transfusion Service. The table below lists current factor concentrates available, which may change due to manufacturer availability. The Medical Director of the Transfusion Service, Robert Randell, MD is available for further consultation. Please call the Transfusion Service at 407-303-1522 to request a copy of the product insert for further information on dosage and administration.

NAME	DESCRIPTION	DOSAGE
Kogenate	Antihemophilic Factor (Recombinant). Kogenate is intended for use in therapy of classical hemophilia	Dosage required (IU) = Body weight (kg) x desired % factor VIII increase/ 2%IU/kg
Benefix	Coagulation Factor IX (Recombinant) is indicated for the control and prevention of hemorrhagic episodes in patients with hemophilia B (congenital factor IX deficiency or Christmas disease), including control and prevention of bleeding in surgical settings.	Dosage required (IU) = number of factor IX IU required = Body weight (kg) x desired factor IX increase (% or IU/dL) x reciprocal of observed recovery (IU/kg per IU/dL) Note: In the presence of an inhibitor use 1.3 (IU/kg per IU/dL)
FEIBA Anti-Inhibitor Coagulant Complex	FEIBA shortens the APTT of plasma containing Factor VIII inhibitor. Indication for use is in the control of spontaneous	General guidelines: 50 to 100 units per kg of body weight are recommended at 12 hour intervals. Consult product

	bleeding episodes to cover surgical interventions in hemophilia A and hemophilia B patients with inhibitors.	insert for specific dosing.
NovoSeven	NovoSeven is a recombinant human coagulation Factor VIIa intended for promoting hemostasis by activating the extrinsic pathway of the coagulation cascade.	The recommended dose of NovoSeven for hemophilia A or B patients with inhibitors is 90 ug/kg given every two hours.
Humate-P	Humate-P is Antihemophilic Factor and von Willebrand Factor (VWF) in the treatment of patients with classical hemophilia (hemophilia A) and von Willebrand disease (VWD)	As a general rule, 1 IU of Factor VIII activity per kg body weight will increase the circulating Factor VIII level by approximately 2 IU/dL. Consult product insert for specific dosing.

FLORIDA HOSPITAL CENTER FOR DIAGNOSTIC PATHOLOGY

On April 25th - April 28th, 2008 Florida Hospital's Diagnostic Pathology services relocated to a stand-alone building located at 2855 N. Orange Avenue within walking distance of the Cancer Center and Main Hospital. The laboratory departments that are housed in this building are Histology, Cytology, Immunohistochemistry, and Diagnostic Hematology along with Pathology Transcription and Pathology send-outs. If a physician would like to review pathology slides with a pathologist at the main Orlando campus hospital laboratory, please notify pathology send-

outs (407) 303-5600, extension 1105130 or 1104245, at least three hours before your arrival to the department and provide pertinent information, e.g. patient name, case number etc. If the case is more than several months old or is at one of the campuses other than the Orlando campus, it may take several days to retrieve it. Most of the pathologists will remain in their current offices in the hospital. Thank you for your patience during this transitional period.

FLORIDA PATHOLOGY LABORATORY ANNOUNCES NEW PATIENT SERVICE CENTER

Florida Pathology Laboratory (FPL) at Florida Hospital is pleased to announce the opening of a new Patient Service Center (PSC). The new PSC is conveniently located adjacent to Florida Hospital Orlando at 2855 North Orange Avenue and provides specimen collection services for all ages. The Center is open Monday through Friday from 7am to 4pm, closing for lunch from noon to 1pm. FPL accepts numerous insurance plans including Beachstreet, United Healthcare, Medicare, and Florida Hospital Healthcare Systems (FHHS).

FPL has been an integral part of Florida Hospital since 1985, extending the quality clinical testing offered by Florida Hospital Laboratory to the surrounding health care community. We currently serve over 1,100 physician's offices, nursing homes, clinics, and surgery centers in the Tri-County area, offering a full range of clinical and anatomic pathology testing. In addition, FPL through Florida Hospital Laboratory, provides lab services to the Florida Hospitals in Sebring, Wauchula, Lake Placid, Zephyrhills, Deland, Deltona, Ormond Beach, and Flagler.

We look forward to serving our Florida Hospital employees and community patients in our new Patient Service Center, or in our eight other FH locations. For additional information contact our Client Service Department at 407- 303-8561.

OUTPATIENT LABORATORY SERVICE CENTER

We're happy to announce that the Outpatient Laboratory Service Center has moved from its shared locations with PTEC to its new location in Suite 370 of the Medical Plaza at Orlando. The new facility has been designed to ensure a comfortable and unique experience for our patients. Their hours of operation are Monday – Friday, 0600-1700 and can be contacted at 407-303-2467.

TRANSPLANT MONITORING TESTS AVAILABLE THROUGH THE TISSUE TYPING LABORATORY

Monitoring a transplanted recipient for rejection is quite complicated. The patient may make antibodies directed towards the mismatched donor antigens (humoral immunity and/or rejection), or he/she may develop cytotoxic killer cells that destroy the transplanted graft (cellular immunity and/or rejection). There is one new test that is used to detect activation of the cellular immunity before rejection develops. There is another orderable test to investigate whether antibody has developed against the donor, sometimes referred to as donor specific antibody.

Presently, the Cylex ImmunKnow **immune cell function assay** detects activation of CD4+ lymphocytes, which are essential to activating the immune system. To better serve our transplant recipients with more timely results, the Tissue Typing Lab implemented this test in April 2008. Sample collection is very stringent. The blood must be collected in sodium heparin tubes. There is no substitute. Sodium heparin tubes come in two sizes; 3 ml or 8 ml. The minimal amount is 1ml of blood, preferably in the small sodium heparin tube.

To measure the activity of CD4 lymphocytes involved with cellular immunity, the test requires an eighteen hour incubation with a stimulating chemical called PHA. Thus the assay takes 24 hours to perform. The expected turn-around time for a result varies depending upon when the blood sample is collected. We expect that results should be on the chart within 36-48 hours. The immune function assay is performed Monday through Thursday. Friday or Saturday collection of samples should be avoided as the results may be invalid by the time the test is performed.

A second orderable test that became available in February 2008 detects the formation of donor specific antibody. This test is called **post-transplant antibody monitoring**. Some physicians may refer to this as donor specific antibody (DSA). We are choosing to avoid this terminology because DSA can mean donor specific antigen as well as antibody. Post-transplant antibody monitoring does not create a charge. It alerts the Tissue Typing Laboratory that a transplanted recipient is probably rejecting his/her graft. The appropriate tests will be ordered after Tissue Typing staff consults with the transplant physicians. For this test, 1-2 SST yellow top tubes will be required, each draws about 6ml. The minimal amount of blood required is 1full SST tube. This investigation study is performed Monday through Friday. If you have questions, please call the Tissue Typing

Lab at 407-303-1681. Max Marschner, Manager, Tissue Typing Lab.

ALBUMIN CREATININE RATIO ADDED

The Laboratory has added the ACR or albumin creatinine ratio as an orderable test in i-Extend due to physician request. This is a synonym for "Microalbumin Urine". The measurement of albumin or microalbumin includes a urine creatinine result. These two tests are used in a calculation to provide a result for the ratio. Both tests are useful in the diagnosis of renal disease.

If you have questions, please call Susan White, Chemistry Manager at 407-303-5600, ext 1104909.

AUTOMATED COMPLETE URINALYSIS

Florida Hospital Altamonte and Winter Park Memorial Hospital Laboratories have acquired the new iQ®200 ELITE™ Automated Urine Microscopy Analyzer which utilizes the latest in urinalysis technology. Winter Park Memorial Laboratory implemented the new analyzer in July 2008; Florida Hospital Altamonte Laboratory will go live with the new analyzer in October 2008.

There will be change in how reportable values (such as WBC, RBC, squamous epithelial) are reported with the use of this analyzer. Values will now be reported as an actual quantitative value instead of a range.

For further questions please contact Barbara Rhiner, Winter Park Memorial Hospital Laboratory, at 407-646-7564 or Lauren Dickman, Florida Hospital Altamonte Laboratory, at 407-303-2245.

ORDERING THYROID ANTIBODIES

When ordering thyroid antibodies, please specify which antibody you would like measured. This will allow us to perform the correct test for your patient. Simply writing "thyroid antibodies" will trigger a phone call to your office for clarification. The thyroid antibodies currently performed at Florida Hospital are:

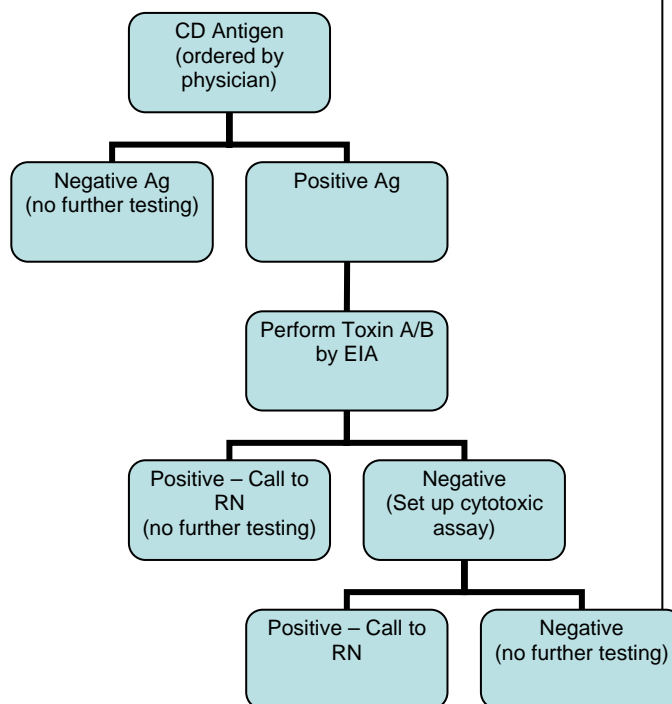
- Thyroglobulin antibody
- Thyroid peroxidase antibody/anti-thyroid microsomal antibody.

Other thyroid antibodies, such as TSH receptor antibody, may also be ordered and will be sent to our reference laboratory.

If you have questions, please call Rosie Fussell, Laboratory Compliance Coordinator at 407-646-7559.

C. difficile TESTING ALGORITHM

In January 2008 the laboratory changed the testing algorithm for *C. difficile* (see chart below). With this new process the initial test is an antigen screen for **glutamate dehydrogenase**, a protein specific to *C. difficile*. When compared directly to PCR testing, this new test has a **negative predictive value of 99.8%**. Because of this, we are able to eliminate many lengthy cytotoxic assays and can also make clinical decisions based on a **single result** instead of the standard rule of thumb of "Stool Studies 3X". Repeat testing is only recommended for this test if there is a decline in the patient's condition. If there are any questions, please contact Julie Hess, Orlando campus Serology Manager, at 407-303-5600, ext. 4965.



NEW AHS BLOOD PRODUCT TRANSFUSION AUDIT CRITERIA

The Medical Executive Committee gave final approval on the new *AHS Adult and Pediatric Blood Product Transfusion Audit Criteria* on April 28, 2008. This criteria will replace the current *Florida Hospital Screening*

Criteria/Indications for Blood Usage from August 25, 2003. Following are snapshots from the new criteria.

Copies of new criteria can be obtained by calling Linda Valdes, Laboratory Administrative Coordinator-Regulations/Safety, at 407-408- 5655 or email at linda.valdes@flhosp.org.

Red Blood Cell Transfusion

Introductory Statement:

Red blood cells are indicated for patients with a symptomatic deficiency of oxygen-carrying capacity or tissue hypoxia due to an inadequate circulating red cell mass.

Indications:

1. Hypovolemia and reduced O₂ carrying capacity due to acute blood loss.
 - Rapid acute hemorrhage without immediate control
 - 30 - 40% estimation of lost blood volume
 - 15 - 30% estimation of lost blood volume if preexisting anemia, continued blood loss, or reduced cardiovascular reserve.
2. Hemoglobin level less than 7 g/dL
3. Hemoglobin level less than 8 g/dL in high risk patients: greater than 65 years old and/or with cardiovascular or respiratory disease.
4. Hemoglobin less than 8 g/dL in peri-operative period after coronary artery bypass graft (CABG) surgery.
5. Hemoglobin between 7-10 g/dL decision to transfuse should be based on age, cardiovascular and respiratory status, symptoms, underlying diagnoses, and state of bone marrow activity.
6. Exchange Transfusion
7. Red Cell Exchange

Contraindications

1. Red cell containing components should not be used to treat anemias that can be corrected with specific medications such as iron, vitamin B12, folic acid, or erythropoietin.
2. Whole Blood and Red Blood Cells should not be

used as volume expanders or to increase oncotic pressure of circulating blood.

Platelet Transfusion

Indications:

1. Platelet count less than 50,000/microL and active bleeding.
2. Platelet count less than 50,000/microL and invasive procedure planned.
3. Platelet dysfunction and microvascular bleeding.
4. Platelet count between 50 and 100,000/microL and risk of bleeding into a confined space (e.g., brain or eye).
5. Platelet count less than 10,000/microL without risk factors for bleeding (e.g., infection, coagulopathy, vascular lesion).
6. Platelet count less than 20,000/microL and risk factors for bleeding (e.g., infection, coagulopathy, vascular lesion).

Contraindications:

1. Do not use this component if bleeding is unrelated to decreased numbers of platelets or abnormally functioning platelets.
2. Do not use in patients with destruction of endogenous or transfused platelets, such as in Thrombotic Thrombocytopenic Purpura (TTP) or Immune Thrombocytopenic Purpura (ITP) unless the patient has a life-threatening hemorrhage.

HLA Matched Platelets

Indications:

1. Refractoriness to platelets from alloimmunization.

Cross Matched Platelets

Indications:

1. Patients with known anti-platelet antibodies.