

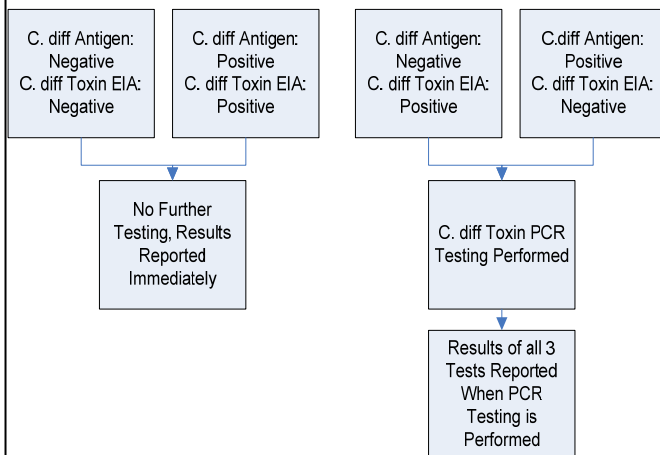
# Laboratory Lines

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

## NEW CDT TESTING ALGORITHM

The Microbiology Department at Florida Hospital will soon be changing the testing algorithm and reporting format for Feces *Clostridium difficile* toxin testing in order to decrease turnaround time for reporting *C. difficile* testing results on patients. Presently, the Cytotoxic Assay is performed as a confirmatory test for the presence of *C. difficile* toxin, and the turnaround time for this tests can be up to 48 hours. The new algorithm replaces the cytotoxic assay confirmatory test with PCR testing which has a turnaround time of a few hours.

When a specimen is received for *C. difficile* testing, it will be simultaneously tested for both *C. difficile* antigen and toxin by an EIA methodology. If the results of the antigen and toxin EIA testing do not match, then confirmatory PCR testing will be performed. Results will always be reported for both *C. difficile* antigen and *C. difficile* toxin EIA testing. PCR results will only be reported if the additional confirmatory testing is necessary based on the results of the antigen and toxin EIA tests. Attached is a diagram depicting the new algorithm, which should be in effect by February 2010. For further information or questions, contact Sandy Hernandez, Microbiology Manager at 407-303-5600, ext. 1104343.



## PLATELET TRANSFUSIONS

Single donor platelet pheresis products (SDP) have been preferred by many physicians including some Florida Hospital physicians since the 1980's. They were promoted by transfusion medicine experts to decrease donor exposures and the risk of transfusion transmitted infections. Recent evidence supports a new perspective based on a number of technological advances in U.S. Blood Banks over the past 25 years. They include better methods for preparing whole blood derived platelet pools and more sensitive infectious disease tests which are performed on all blood products. These advances have resulted in virtual equivalence in safety and efficacy between single donor plateletpheresis products and five unit platelet pools.

The five unit platelet pools are now viewed as a complementary strategy to meet platelet transfusion needs. In many areas of the country and in Central Florida they are an important part of the platelet supply without which severe platelet shortages would occur. In the Florida Hospital system, 41% of all platelets transfused are five unit platelet pools. Pooled platelets have an advantage over pheresis platelets in that they have a much lower incidence of causing Transfusion Related Acute Lung Injury (TRALI).

The five unit platelet pools are prepared to consistently provide average platelet counts that are equivalent to platelet pheresis products. Since the advent of nucleic acid amplification testing in U.S. Blood Banks, the residual risk of the transfusion transmitted viruses is negligible in both platelet products. Transmission of HIV and HCV won't occur in our lifetime for either platelet pheresis products or five unit platelet pools. Routine bacterial testing of both products have further increased the safety of platelet transfusions. Since all platelet products are prestorage leukoreduced, there is no increased incidence of alloimmunization/platelet refractoriness in patients receiving pooled platelets when compared to patients receiving platelet pheresis products.

When requesting platelets for your patient, please indicate the number of transfusions required. In most situations,

one platelet pheresis product or one five unit platelet pool will be therapeutically effective. Leukoreduction and ABO matching of platelet products have proven to be the two most important aspects in selection of platelet products for transfusion. The Transfusion Service staff will fill the order based on ABO matched (if available) and product availability for the best inventory management to meet all of our patients needs.

Submitted by: Mary Ann Womack, Florida Hospital Orlando Transfusion Service Manager, on behalf of:  
Robert Randell, M.D.  
Medical Director – Transfusion Service

### PREVENTION OF ACUTE OR IMMEDIATE TRANSFUSION REACTIONS

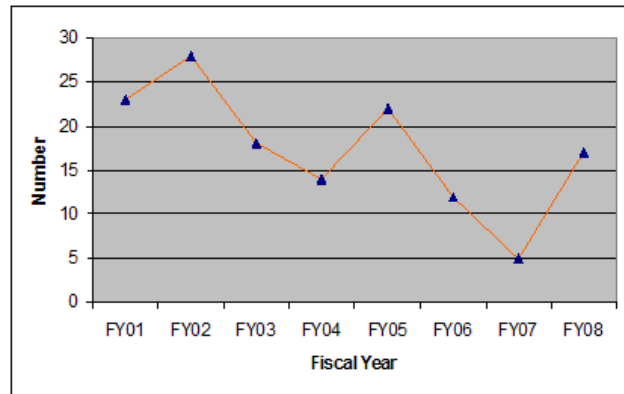
Clerical and human errors involving right patient, right sample and right blood unit identification are the most common causes of mis-transfusion and acute hemolytic transfusion reactions (AHTR). AABB *Standards for Blood Banks and Transfusion Services* requires facilities to have a peer-review program to monitor patient identification, sample collection, labeling and near-miss events. Current data indicates a mislabeling rate of 1:71 to 1:165, with a wrong blood in tube rate of 1:2000 to 1:2800. New patients with no blood type on record may not be adequately captured.

At Florida Hospital we use a separate Blood Bank armband system. Even with this additional safety mechanism, we experience a mislabel rate of 1.35% of all blood bank specimens. The majority of these specimens are clerical errors due to a missing Blood Bank identification number, but in Orlando 9 samples were “wrong blood in tube” from January to May 2009. This represents a potential for 9 fatal transfusion reactions.

The best way to prevent fatal transfusion reactions:

1. Perform positive identification at the patient bedside when collecting and labeling specimens.
2. Perform positive identification at the patient bedside when hanging blood on a patient.

### FDA Report: Hemolytic Transfusion Reactions, FY 2001 through FY 2008



In FY2008, there were ten reports of fatal hemolytic transfusion reactions due to ABO-incompatible blood transfusions in the United States:

- 5 cases: recipient identification error at the time of transfusion
- 1 case: blood bank clerical error (incorrect sample used for testing)
- 3 cases: sample collected from incorrect patient
- 1 case: transfusion of high-titer anti-B in group O Apheresis Platelets following group B bone marrow transplant

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Florida Hospital Orlando

References:

Technical Manual, Bethesda, MD: AABB, 16<sup>th</sup> edition, 2008  
Fatalities Report to FDA Reporting Blood Collection and Transfusion, FDA, 2008

**CORRECTIONS:**

In the January 2010 edition of *Laboratory Lines* the laboratory test code for Plavix was incorrectly stated. Correct code should be PFPLAV.

In the January 2010 edition of *Laboratory Lines* the VerifyNow platelet function assay was listed as measuring IIa/IIIb, should have been IIb/IIIa.