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Laboratory News

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TYPE AND SCREEN VS TYPE AND CROSS - LAB ORDER CLARIFICATION

Kathy Puca, MD & Clint Borek, Manager, Transfusion Service

Since the opening of Eau Claire Medical Center, there have been several questions about the correct terminology for ordering tests performed by the Transfusion Service Department. Here is a Q&A list to clarify.

- **QUESTION: Why can't I find the order "Type and Cross"?**

"Type and Crossmatch" is no longer an "orderable" test for providers using Cerner in the Marshfield Clinic Health System (MCHS).

Blood products should be ordered at the time a transfusion is needed. The practice of Type and Crossmatch and holding RBC units for a patient who MAY need a transfusion is costly. It increases waste, and can result in unnecessary outdating of donor blood, which is a precious resource. Blood products should only be placed "on hold" in special circumstances.

- **QUESTION: What *should* I order?**

"**Type and Screen**" (order for lab testing) with "Transfuse" (order to give blood products) or "Prepare" (order to set up blood for surgery or invasive procedure) are the terms to be used.

Type and Screen is the first critical step for providing crossmatched RBCs for a patient.

Type and Screen testing provides the needed results for the laboratory staff to select and assign the proper unit for the

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patient. A **Type and Screen** includes a blood type (ABO/Rh) and antibody screen. The screen detects any clinically significant antibodies that could cause problems for the patient. If there is a positive screen, more time is needed for further testing to identify the antibody(ies) and select a product that is negative for the corresponding antigen(s). This is a critical step to ensure patient safety.

- **QUESTION: How is blood crossmatched?**

With each unit of blood that is selected, a crossmatch between the unit of blood and the patient's blood sample is performed prior to issue for transfusion. This can be done manually or electronically. For over 80% of patients requiring RBC transfusion, the unit is selected and set up in less than 5 minutes electronically using the Blood Bank computer. This is known as a "computer" crossmatch.

- **QUESTION: What about Platelets and Plasma, what testing is needed?**

Generally only a blood type (ABO/Rh) is required for selection and issue of platelets or plasma. No antibody screen is required since these products do not contain red cells. Upon receiving the order, if the lab does not have a "blood type on file" for the patient in the computer system, the laboratory staff will order the ABO/Rh test. Every attempt will be made to use a previously collected sample from the patient for this testing.

CONTACTS

- Clinical and technical information: Kathy Puca, MD or Clint Borek, Manager, Transfusion Service.
- Phone number: 1-800-222-5835.

NUCLEIC ACID TEST REPLACES SEROLOGY TESTS FOR ANAPLASMOSIS AND EHRLICHIOSIS

Thomas Novicki, PhD, DABMM; Clinical Microbiologist

Serology tests for anaplasmosis and Ehrlichiosis will no longer be performed by Marshfield Labs. Instead, Marshfield Labs recommends our nucleic acid test **Tick Borne Panel** (test code TICKP). This test will detect *Anaplasma phagocytophilum, Babesia microti, Ehrlichia chaffeensis, Ehrlichia ewingii,* and *Ehrlichia muris ssp. eauclairensis* (formerly '*E. muris*-like agent').

Serology for anaplasma will still be available as a send out test to Mayo Laboratories: test name ***Anaplasma phagocytophilum*** **(Human Granulocytic Ehrlichiosis) Antibody, Serum**; test code ANAP.

Several tick-borne diseases are endemic in the Upper Midwest and New England regions of the USA and adjoining areas of Canada. While Lyme disease is perhaps the most well known, anaplasmosis, Ehrlichiosis, and babesiosis also are significant risks related to tick exposure, with a severity spectrum of disease that runs from inapparent infection to life-threatening illness.

While the symptoms of anaplasmosis, Ehrlichiosis, and babesiosis vary, the differences are not sufficient to make a clinical diagnosis. Non-specific symptoms of fever, headache, malaise and myalgia are often present. For many years the detection of agent-specific antibodies (i.e., serology) was the best diagnostic method available. However, as with many serologic tests, the

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serology tests for anaplasmosis, Ehrlichiosis, and babesiosis are limited by cross-reactivity, a delay in host antibody response, an inability to distinguish ongoing vs past infection, and will give more false-negative results compared to nucleic acid tests.

Summary of Tests

Test Name	Test Code	Targets	Status
Tick Borne Panel (Does not include Lyme disease)	TICKP	*A. phagocytophilum, B. microti, E. chaffeensis, E. ewingii, and E. muris ssp. eauclairensis*	Active, Recommended
Anaplasma, Ehrlichia Nucleic Acid Test (Does not cover babesiosis)	ANENAT	*A. phagocytophilum, E. chaffeensis, E. ewingii, and E. muris ssp. eauclairensis*	Active
Anaplasma phagocytophilum Antibody	EHRLICH	*A. phagocytophilum*	Retired
Babesia microti IgG Antibodies, Serum (BABG)	BABGSO	*B. microti*	Active, Not Recommended

Note that Lyme disease is not included in the **Tick Borne Panel** nucleic acid test. At this time, we recommend that the **Lyme Disease Serology, Serum** test be used for the routine diagnosis of Lyme disease. Please refer to the online laboratory Test Reference Manual for details on each of these tests.

CONTACTS

- Clinical and interpretive information: Dr. Thomas Novicki or Dr. Thomas Fritsche.
- Technical questions related to the Tick Borne Panel and Anaplasma, Ehrlichia Nucleic Acid Test: Dr. Timothy Uphoff.
- Phone number: 1-800-222-5835.

PARVOVIRUS IGG AND IGM ARE NOW SEND OUT TESTS

Roxanne Willadsen, Assistant Manager, Esoteric Automated Section

Effective Wednesday, August 15, 2018, Marshfield Labs will no longer perform **Parvovirus B19 Antibodies, IgG and IgM** testing via ELISA. All Parvovirus B19 IgG/IgM testing will be sent to Mayo Laboratories. The test code will be PARVOSO. The required specimen is serum. Testing at Mayo Laboratories will be performed once daily, Monday-Friday.

B19V has been shown to be the causative agent of a number of clinical conditions such as fifth disease (erythema infectiosum) rash, arthralgia, and fetal damage. The assay may be used for testing women of childbearing age to determine their serological status when there is a suspicion of exposure to B19V.

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TOTAL COMPLEMENT TEST NOW SENT TO MAYO LABORATORIES

Gene Shaw, MD, PhD, Clinical Pathology

Effective Monday, August 13, 2018, Marshfield Labs will be sending the test for serum total complement (sometimes referred to as CH50) to Mayo Laboratories. The reason for the change is relatively low test volume. Mayo uses an automated liposomal method. Testing is done Monday through Saturday. In Marshfield the test was only run on Mondays, so turn-around-time will generally improve. The reference range will change from the current 73-184 U/mL to 30-75 U/mL.

CONTACTS

- Drs. Shaw, Bissonnette, or Flanagan, Marshfield Labs.
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