Billings Clinic

Laboratory Communiqué

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The Laboratory Communiqué is a quarterly publication released by Billings Clinic Laboratory Services as an informational tool for medical staff and laboratorians.

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Hematology Department Update

Automated ESR

The Hematology Department went live with the ALCOR miniiSED on May 18th. This is an automated method using the primary EDTA tube and requires just 600 microliters of sample to deliver a result in 15-20 seconds. This change will improve workflow and improve turn-around-time for result reporting.

Clinical: The ESR is a simple non-specific screening test that indirectly measures the presence of inflammation in the body. It reflects the tendency of RBCs to settle more rapidly in the face of some disease states, usually because of increases in plasma fibrinogen, immunoglobulins and other acute-acute-phase reaction proteins. Changes in the RBC shape or numbers may also affect the ESR.

Method: The ALCOR Scientific miniiSED utilizes photometric reading to quantify the rouleaux formation, which is the earliest and most critical phase of sedimentation. The micro-flow cell captures the critical kinetics of RBCs in a highly controlled testing environment to produce the result in 15-20 seconds. The technical innovation of the miniiSED analyzer consists of “directly” measuring the aggregation of the RBCs, whereas the traditional ESR methods “indirectly” measure the aggregation of the RBCs by recording the length at which the RBCs settle in a Westergren tube. The miniiSED results are unaffected by variables commonly associated with traditional ESR testing methods, some of which include hematocrit, MCV and temperature.

Specimen: Whole Blood collected in K3 EDTA or K2 EDTA anti-Coagulant tube.

Stability: Sample should be tested within 4 hours from venipuncture

Chemistry Dept. Update

hs-cTn I

Test: 0226

CPT: 84484

LOINC: 49563-0

Urinalysis/Micro Department Update

Changes to Urinalysis Reflex to Culture Order

or within 24 hours if refrigerated.

Reference: Ranges:

Men under 50 years old:	<15 mm/hr.
Men over 50 years old:	<20 mm/hr.
Women under 50 years old:	<20 mm/hr.
Women over 50 years old:	<30 mm/hr.
Newborn to Puberty:	3-13 mm/hr.
Newborn:	0-2 mm/hr.

Serology Department Update

iFOBT Replacement

On June 1st our laboratory went live with the Fisher Sure-Vue iFOBT test which replaced the PolyMedco OC automated iFOBT test. The PolyMedco OC instrument was discontinued by the vendor on June 30th. During the month of June, we provided an overlap of methods to accommodate the return of the older PolyMedco iFOBT collection devices while distributing the new Sure-Vue collection devices. As of July 1st, the older PolyMedco Collection Devices will not be accepted for testing.

Old Collection Device

New Sure-Vue Collection Device

Both methods are immunological assays detecting specifically human blood in fecal samples. The collection method for patients and provider collected patient samples is the same. The only change was in the collection device itself which is specific for performing the test by the new Fisher Sure-Vue method. Sample stability with the new kit improved from 2 weeks to 30 days for refrigerated storage.

Chemistry Department Update

High-Sensitive Troponin I

The Billings Clinic Laboratory adopted new instrumentation for immunoassay testing (Atellica Solutions by Siemens Heathineers)

earlier this year. This platform utilizes a high-sensitive Troponin I assay which can detect lower levels of troponin and smaller changes

to a patient's troponin levels. Effective July 1st, 2020, our conventional Troponin I (cTnI) assay was replaced with the High-Sensitive Troponin I (hs-cTnI) assay on our new testing platform and the old assay will not continue to be available.

Reporting differences between the new High-Sensitive Troponin I (hs-cTnI) and the old conventional Troponin I (cTnI) are as follows:

1) High-Sensitive Troponin I will be reported in whole numbers and ng/L will be our units of measure for this assay. The ng/mL units of measure used for the old assay will be discontinued.

2) Results falling above the Sex-Specific 99th Percentile are considered abnormal Troponin I values. The new 99th Percentile Cut-Off values adopted by our laboratory will be as follows:
   a) Adult Females: 34 ng/L
   b) Adult Males: 54 ng/L

The current Point of Care troponin I test is not as sensitive as the new high-sensitive Troponin I assay. This assay will however continue to be used at the West-End Clinic. This means that the Point of Care test will have poor correlation with the central lab performed high-sensitive Troponin I test. The Emergency Department has discontinued the POC Troponin I for the above stated reason as of July 1st. POC Troponin I test cartridges will continue to be available for the West End Clinic for their i-STAT devices.

Questions and/or concerns may be directed to Dr. Jeffrey Smith, Billings Clinic Laboratory Medical Director at extension 4289.

Urinalysis/Microbiology Department Update

Urinalysis to Reflex Culture Changes

Over the past several months, a joint antimicrobial stewardship group of members of the Infectious Disease and Pathology Departments has examined the urine culture practices at the Billings Clinic. Data was pulled and compiled from previous urinalysis results, culture requests and culture results. A summary of the project and the outcome is:

Data Research for Project

- Approximately 66% of cultures yielded no growth
- An additional 15% of cultures grew mixed flora indicative of contamination
- Absence of white blood cells in the urine has a negative predictive value of greater than 90% for urinary tract infection

Billings Clinic

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Goal

- Ensure cultures are performed only when appropriate indications are met and not used as a screening for asymptomatic bacteriuria (ASB)
- Reduce unnecessary/inappropriate treatment of ASB
- Reduce cost related to overtreatment

New Testing Paradigm

- Urine samples containing >10 WBCs per high power field will be cultured
- To prevent contaminated/clinically unhelpful cultures, only urine samples containing <6 squamous epithelial cells will be candidates for culture.

Questions and/or concerns may be directed to Dr. Christina Kavran at extension 4090.

For more information about Billings Clinic Laboratory please call (406) 657-4060. www.billingsclinic.com

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