

MCL Newsletter



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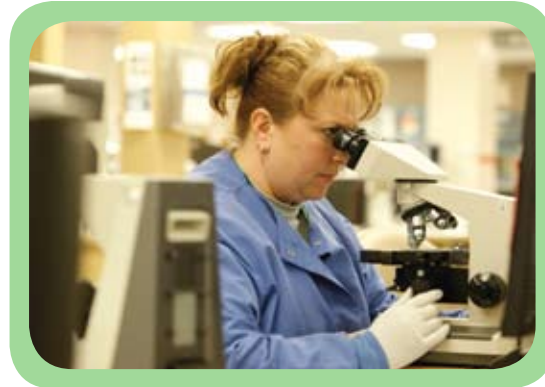
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Laboratory Determination of CBC and Differential



The complete blood count (CBC) is a common test that offers the provider an important tool assessing the health of an individual. When requested, the differential white cell count (diff) can be performed to yield the relative number (%) and absolute number of each type of white cell present in the patient's sample.

Automated differential counts are the preferred method. Mercy Clinical Laboratory utilizes instrumentation with fluorescent flow cytometry and hydrodynamic focusing technologies to consistently classify normal and abnormal white cell, red cell and platelet populations. Because of this, and the

thousands of cells classified during this process, the automated differential is much more sensitive and specific than manual techniques.

When necessary, automated differentials are reflexed to manual determinations. In these instances, a technologist can confirm the presence of abnormal morphological changes, and estimate white cell, red cell and platelet counts. First time results, such as those listed below, are referred to our pathologists, who generate a detailed report for the clinician to aid in diagnosis and treatment of the patient.

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CBC			
WBC	≤ 2,000	or	≥ 50,000/mm ³
HGB	≤ 7.0	or	≥18.0 g/dl – Females ≥20.0 g/dl – Males (≥24 g/dl if <1 mo. old)
MCV	≤ 75	or	≥105 fl (>120 fl if <1 yr. old)
PLT	≤75,000	or	≥750,000/mm ³ μl

Differential			
WBC			
Granulocyte Abs	≤ 500	or	≥50,000 /mm ³
Lymphocyte Abs			≥10,000 /mm ³
Monocyte Abs			≥2,000 /mm ³ (if precursor/atypical mono)
Basophil %			≥5%

LEAD EXPOSURE REMINDER

When we think of Lead testing, it usually is in regard to preparing our children for starting school, along with physicals, vaccinations, new shoes and school supplies. With increasing interest in renovating and restoring older homes, however, we need to remember that Lead exposure can occur during even the most basic of renovations.

New contractor regulations went into effect in April, 2010, regarding renovations in housing built before 1978, as well as child-occupied facilities such as home daycares, daycare centers, preschools, kindergarten classrooms, or other buildings built before 1978. The regulations do not apply to owner-occupants, but property owners still have the ultimate responsibility for the safety of family, tenants or children in their care.

For additional information regarding the regulations, health concerns, and recommendations regarding lead exposure and lead testing, contact the Iowa Department of Public Health, Lead Poisoning Prevention Program, by calling (515) 281-3479 or 1-800-972-2026.

Hepatitis Testing

Mercy Clinical Laboratory will be implementing Chemiluminescent Microparticle Immunoassay (CMIA) methodology for hepatitis testing on the Abbott Architect i1000SR in August, 2010. Onsite testing incorporates a comprehensive Hepatitis menu for the common markers for detection and monitoring of infections caused by Hepatitis A, B and C viruses. Confirmation testing for various hepatitis markers is also available and can be ordered through Mercy Clinical Laboratory.

Testing performed onsite includes:

Hepatitis Marker	Significance
Hepatitis B Surface Antigen (HBsAg)	Earliest marker; detects acute or chronic hepatitis B infection
Hepatitis B Surface Antibody (anti-HBs)	Detects past hepatitis B infection or immunity (vaccination) to Hepatitis B virus.
Hepatitis B Core Antibody (IgM anti-HBc)	Marker for chronic infection. Positive following acute, chronic or past hepatitis B infection.
Hepatitis A Virus Antibody (IgM anti-HAV)	Detects acute or recent hepatitis A virus infection.
Hepatitis C Virus Antibody (anti-HCV)	Detects current or past infection with hepatitis C virus.

COAGULATION Test: Thrombelastograph (TEG)

Hemostasis is a complex process that changes blood from a fluid to a solid state. "Intact" blood vessels are essential to moderating the blood's tendency to clot. Injury to these vessels initiates repair by activating platelets to trigger clot formation.

At Mercy Medical Center, the Thrombelastograph (TEG) analyzer was introduced in May 2008 for our cardiac open heart patient as a tool to determine if a patient is in need of donor blood products. The TEG monitors an individual patient's current hemostatic state and will guide the cardiac surgeon's decision to use fresh frozen plasma, platelets, or cryoprecipitate. The intention is to maintain steady state hemostasis before, during, and after open heart surgery. The resulting hemostasis profile that the TEG generates is a measurement of the time it takes for initial fibrin formation, clot kinetics, and clot strength.

With the implementation of the TEG analyzer, Mercy Medical Center cardiac patients have benefited by the improved ability of the surgeon to determine appropriate blood components to administer. Mercy Medical Center – Des Moines is the largest heart hospital in the state of Iowa. In conjunction with the Iowa Heart surgeons, we perform over 1200 heart surgeries annually. Approximately two thirds of these are open heart surgeries.

MCL Patient Statements for Laboratory Services

Recently, Mercy Clinical Laboratory chose Preferred Medical Deposits (PMD) as our service partner for submitting patient insurance claims, posting payments and sending patient statements for laboratory services. The PMD statement includes hours of operation (Monday through Saturday), PMD Customer Service contact numbers, a website address, and an email to use for inquiries by patients. On the back of the statement, there is information regarding health insurance billing and balance payment options. A section is provided for submitting updated insurance or address if applicable.

PMD services, on behalf of MCL, provides enhanced billing efficiencies as well as customer contact representatives that are available to answer patient questions. We believe this is a positive move for patient satisfaction with regard to understanding their laboratory charges.

Hepatitis Testing Information

The Centers for Disease Control and Prevention publishes a table on their website, www.cdc.gov/hepatitis, that summarizes key characteristics for hepatitis A,B and C. Excerpts from that table are included here.

	HEPATITIS A is caused by the Hepatitis A virus (HAV)	HEPATITIS B is caused by the Hepatitis B virus (HBV)	HEPATITIS C is caused by the Hepatitis C virus (HCV)
Routes of Transmission	Ingestion of fecal matter, even in microscopic amounts, from: <ul style="list-style-type: none"> • Close person-to-person contact with an infected person • Sexual contact with an infected person • Ingestion of contaminated food or drinks 	Contact with infectious blood, semen, and other body fluids, primarily through: <ul style="list-style-type: none"> • Birth to an infected mother • Sexual contact with an infected person • Sharing of contaminated needles, syringes or other injection drug equipment • Needlesticks or other sharp instrument injuries 	Contact with blood of an infected person, primarily through: <ul style="list-style-type: none"> • Sharing of contaminated needles, syringes, or other injection drug equipment Less commonly through: <ul style="list-style-type: none"> • Sexual contact with an infected person • Birth to an infected mother • Needlestick or other sharp instrument injuries
Persons at Risk	<ul style="list-style-type: none"> • Travelers to regions with intermediate or high rates of Hepatitis A • Sex contacts of infected persons • Household members or caregivers of infected persons • Men who have sex with men • Users of certain illegal drugs (injection and non-injection) • Persons with clotting-factor disorders 	<ul style="list-style-type: none"> • Infants born to infected mothers • Sex partners of infected persons • Persons with multiple sex partners • Persons with a sexually transmitted disease (STD) • Men who have sex with men • Injection drug users • Household contacts of infected persons • Healthcare and public safety workers exposed to blood on the job • Hemodialysis patients • Residents and staff of facilities for developmentally disabled persons • Travelers to regions with intermediate or high rates of Hepatitis B (HBsAg prevalence of 2%) 	<ul style="list-style-type: none"> • Current or former injection drug users • Recipients of clotting factor concentrates before 1987 • Recipients of blood transfusions or donated organs before July 1992 • Long-term hemodialysis patients • Persons with known exposures to HCV (e.g., healthcare workers after needlesticks, recipients of blood or organs from a donor who later tested positive for HCV) • HIV-infected persons • Infants born to infected mothers
Incubation Period	15 to 50 days (average: 28 days)	45 to 160 days (average: 120 days)	14 to 180 days (average: 45 days)
Potential for Chronic Infection	None	<ul style="list-style-type: none"> • Among unimmunized persons, chronic infection occurs in >90% of infants, 25%–50% of children aged 1–5 years, and 6%–10% of older children and adults 	<ul style="list-style-type: none"> • 75%–85% of newly infected persons develop chronic infection • 15%–20% of newly infected persons clear the virus
Severity	Most persons with acute disease recover with no lasting liver damage; rarely fatal	<ul style="list-style-type: none"> • Most persons with acute disease recover with no lasting liver damage; acute illness is rarely fatal • 15%–25% of chronically infected persons develop chronic liver disease, including cirrhosis, liver failure, or liver cancer • Estimated 3,000 persons in the United States die from HBV-related illness per year 	<ul style="list-style-type: none"> • Acute illness is uncommon. Those who do develop acute illness recover with no lasting liver damage. • 60%–70% of chronically infected persons develop chronic liver disease • 5%–20% develop cirrhosis over a period of 20–30 years • 1%–5% will die from cirrhosis or liver cancer • Estimated 12,000 persons in the United States die from HCV-related illness per year

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Atlas Project – Web based electronic ordering for clients

MCL is continuing with the implementation of Atlas LabWorks to our clients. Several clients are using the product including patient service centers, clinics and network hospitals. Atlas LabWorks offers clients customized control over orders and more efficient access to their lab results. If you are interested in having Atlas LabWorks installed in your facility, please contact MCL Marketing at 247-4492.



A member of Mercy Health Network

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