

Under the Microscope

2008 Summer Newsletter

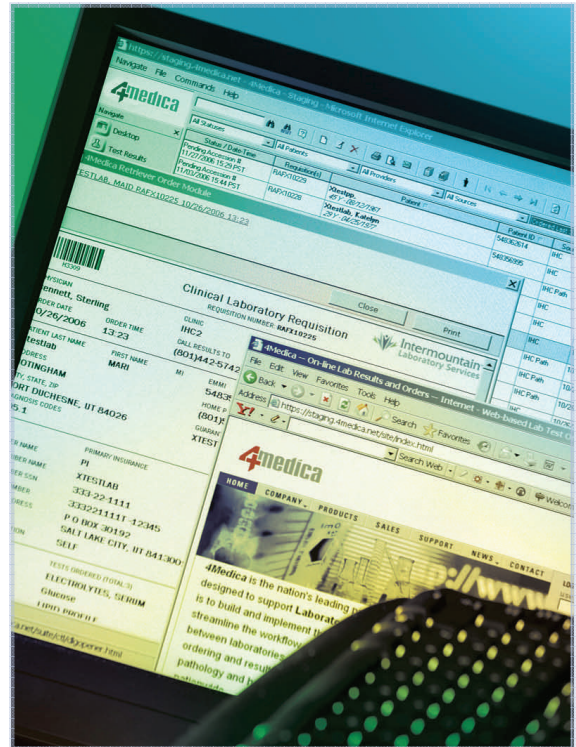
▶ Introducing Web-based Laboratory Test Orders

NOW YOU CAN ORDER LABORATORY TESTS VIA secure Internet access to Intermountain Laboratory Services. Are you frustrated with filling out a paper requisition or specimen labels by hand, risking transposition or misinterpretation of patient order and billing information? How about filing or finding a paper test order and result in a patient medical record? Online web ordering via Intermountain's new laboratory solution — "4medica" may be for you. Six easy steps complete an Internet order:

1. Select patient
2. Identify ordering provider
3. Select lab test(s)
4. Choose diagnosis code(s)
5. Direct patient to draw location
6. Submit order

Custom common test and diagnosis lists are created so you have your ordering patterns condensed into one concise window. Pathology orders are made simple by displaying anatomical diagrams that you can click on to choose patient biopsy sites. Bar-coded instrument-ready labels print out, making processing at the laboratory more efficient, reducing order errors, increasing throughput, and improving turnaround times.

The system stores an electronic record of your test orders and results so you no longer have the time and expense of paper chart supplies and filing. When you need to find a record of a patient's test order or result,



a simply query will give you immediate access to each order and result. No more second guessing if what you ordered is what you received as a result. You have it all right at your finger tips.

With online web ordering, you will create an environment where providers and staff, who are otherwise burned out with the chaos of paper charts, can now embrace 21st-century technology for patient care management. You will also impress patients by demonstrating that you run a modern, cutting-edge practice.

Find out today if you are a good candidate for electronic orders over the Internet by contacting Scott Romney at 801-507-2208 or scott.romney@imail.org.

► New Policy for West Nile Virus IgG Antibody in CSF and Serum

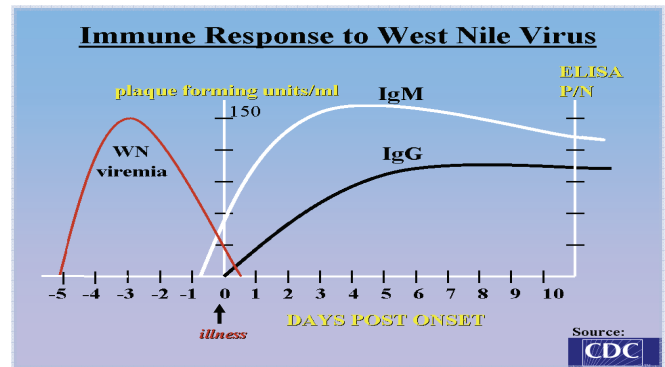
DUE TO SIGNIFICANT AND EXTENSIVE CROSS-REACTIVITY among other members of the Flaviviridae family, i.e., St. Louis Encephalitis Virus, specimens submitted for West Nile Virus IgG antibody testing will not be performed until a convalescent specimen is submitted to the laboratory. West Nile Virus IgG acute specimens will be maintained in the laboratory until appropriately timed (14 days to 21 days after symptom onset) convalescent specimens are received, at which time both specimens will be run in parallel and reported. All convalescent specimens must be marked as such on the specimen and so noted on the requisition.

Seroconversion between acute and convalescent specimens is considered strong evidence of current or recent infection. The best evidence for infection is a significant change in antibody concentration on two appropriately timed specimens, where both specimens are run at the same time, in the same laboratory using the same method. Therefore, specimens submitted for West Nile Virus IgG will be held until such time that a convalescent specimen is submitted.

The detection of IgG antibodies to West Nile Virus in CSF may indicate central nervous system infection. However, consideration must be given to possible contamination by blood or transfer of serum antibodies across the blood-brain barrier.

The recommended testing for suspected acute West Nile Virus infection is to test for IgM antibodies to West Nile Virus in serum collected within 8 to 14 day of illness onset or in CSF collected within 3 to 8 days of illness onset by enzyme-linked immunosorbent assay (ELISA). Since peripheral IgM antibody to West Nile Virus in the blood does not typically cross the blood-brain barrier, presence of West Nile IgM antibody in CSF is strongly suggestive of central nervous system infection.

Yet, because most infected persons are asymptomatic, patients who have been previously infected may have peripheral IgM antibody, persisting for six months or longer which may not be related to their current clinical illness. Please see the chart below:



For more information, please contact Debbie Bennion MS MT CLSp(MB), Supervisor Molecular Pathology: 801-507-2243 / Debbie.Bennion@imail.org or David Pombo M.D., Medical Director Microbiology: David.Pombo@imail.org.

References:

Centers for Disease Control and prevention (CDC) Epidemic/Epizootic West Nile Virus in the United States: Guidelines fo Surveillance, Prevention and Control. 3rd Ed. 2003

► Lab Management Spotlight

CECILIA WILSON IS THE CLIENT

Service Supervisor at Intermountain Central Laboratory and has served in client services for 9 years. She manages a team of 22 client service representatives who handle 1000 calls per day at the Central Lab Call Center. Cecilia enjoys jewelry making, quilting, and travel. She especially enjoys annual trips to the Shakespearian Arts Festival in Cedar City. Her husband Wayne is a Systems Engineer with Intermountain's Laboratory Information Systems team.



▶ PLAC™ Test Now Available at Intermountain

INTERMOUNTAIN LABORATORY SERVICES NOW offers the Lipoprotein Associated - Phospholipase A₂ (PLAC™ Test)*, performed at the Central Laboratory. This assay can help to determine if patients are at an increased risk for cardiovascular events including myocardial infarction and ischemic stroke. When ordering this test, clinicians can expect to receive a value ranging from 0-234 ng/mL. These levels may be used as guidelines to assess patients with high lipoprotein-associated phospholipase A₂. Concentrations greater than or equal to 235 ng/mL may indicate an increased risk for cardiovascular events including myocardial infarction and ischemic stroke. The median lipoprotein associated phospholipase A₂ value for a healthy population is 235 ng/mL.

Lp-PLA₂ levels should be interpreted in conjunction with clinical findings and other diagnostic tests. This test does not replace blood cholesterol tests or other traditional risk factors identified for coronary heart disease or ischemic stroke. The clinical relevance of Lp-PLA₂ of patients younger than 40 years of age and older than 70 years of age is unknown at this time.

Lp-PLA₂ is a calcium-independent lipase that is associated with low-density lipoprotein (LDL). It is produced in macrophages and is expressed in greater concentrations in atherosclerotic lesions. Several lines of evidence suggest that oxidation of LDL plays a critical step in the development and progression of atherosclerosis.^{1,2} In additional studies, Lp-PLA₂ has been shown to be a strong predictor of ischemic stroke, with an increased risk of nearly 2-fold, even after adjustment for blood pressure, lipids, diabetes, body mass index and other inflammatory markers.³

*Previously offered through ARUP. There will be no changes to reported values, reference ranges or current service when the PLAC TEST is performed at Intermountain's Central laboratory.

Ordering Information

CODE:	PLACT
Specimen:	One serum separator tube (SST) or plain red Separate serum from cells ASAP Min: 0.1 mL or 3 microtainer tubes - includes pediatrics
Transport:	Serum refrigerated
Storage:	Refrigerate immediately upon serum separation Ambient temperature no longer than 4 hours
Method:	Enzyme Linked Immunosorbent Assay (ELISA)
Performed:	Tuesdays and Fridays
Reported:	Same day as performed

References

1. Chisolm GM and Stienberg D. (2000). *Free Radical Biol Med* 28: 1815-26
2. Witztum JL (1994). *Lancet* 344: 793-5
- Ballantyne CM, Hoogeveen RC et al (2005). *Arch Intern Med* 156: 2479-84

For further information, please refer to the following references:

- Carlquist JF, Muhlestein JB, Anderson JL. "Lipoprotein-associated phospholipase A₂: a new biomarker for cardiovascular risk assessment and potential therapeutic target". *Expert Rev Mol Diagn.* 2007 Sep;7(5):511-7.
- Lavi S, Herrmann J, Lavi J, McConnell JP, Lerman LO, Lerman, A. "Role of Lipoprotein-Associated Phospholipase A₂ in Atherosclerosis." *Current Atherosclerosis Reports*, 2008 Oct:230-235

▶ Intermountain is Pioneer in Liquid-based Pap Screening; Discontinuing Conventional Method

PROVIDERS HAVE BEEN ENCOURAGED OVER THE past decade to collect Pap smear specimens in the ThinPrep vial. Most providers collecting Paps have made the change from the conventional to the liquid-based method. Intermountain will no longer offer testing by the conventional method and here are the reasons why:

Intermountain Healthcare was an early pioneer in the use of liquid base testing for screening of cervical/

vaginal cancer. Intermountain began using the ThinPrep® Pap Test shortly after the U.S. Food and Drug Administration (FDA) approved the test in 1996 as a replacement for the conventional Pap smear. When approved by the FDA, the ThinPrep Pap Test was labeled as "significantly more effective" than the conventional Pap smear.

In addition to the Pap test, adjunctive tests have also been approved by the FDA to be tested from the ThinPrep vial including human papillomavirus (HPV), Chlamydia and Gonorrhea (CT/NG). Currently the ThinPrep vial is the only liquid based cytology collection medium approved by the FDA for testing HPV, CT/NG.

Since the FDA approved the ThinPrep Pap Test over 170 studies supporting the benefits of ThinPrep Pap Testing have been published in peer reviewed publications.

For a short period of time, Intermountain will send any conventional Pap smears received to its reference laboratory, ARUP. This may delay test results as much as 1-2 weeks.

For additional information or to schedule a visit to your office to discuss the merits of the ThinPrep® Pap Test, please call Missy Allred at 801-507-2155.

► More Sensitive Quantitative HCV Test Replaces Qualitative HCV Test

INTERMOUNTAIN LABORATORY SERVICES IS NO longer performing HCV RNA Qualitative PCR in favor of a RNA quantitative PCR assay which has greater sensitivity than the previously offered qualitative HCV PCR assay. The linear range of the new qualitative assay is 50 I.U /mL to 50 million IU/mL. Turnaround time will remain the same or improve as



Shown above is the Thinprep Imager, capable of imaging 400 slides per 24-hour period. Intermountain has two Imagers.

volumes grow.

Please see ordering information and comparative data for HCV by PCR in the charts below.

ORDER CODE	HCV PQN
Specimen Requirements:	Plasma EDTA preferred Serum SST also acceptable Separate from cells within 6 hours after collection

TEST	LOWER LIMIT OF DETECTION
Discontinued Qual HCV PCR	60 IU /mL
Current Quant HCV PCR	50 IU / mL
ARUP Qual. HCV PCR	50 IU /mL
ARUP HCV Quant	75 IU /mL

For additional information about the quantitative PCR test, please contact Debbie Bennion MS MT CLSp(MB), Supervisor Molecular Pathology at 801-507-2243 or Debbie.Bennion@imail.org.