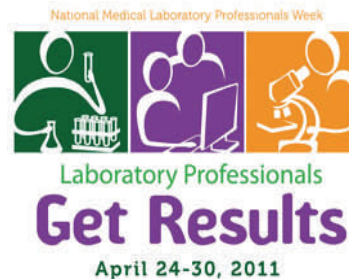


National Medical Laboratory Professionals Week April 24-30, 2011!

If you see someone in the hospital in the bright red scrubs that week, be sure to let them know how much you appreciate the hard work they do “behind” the scenes. Come up to the 4th floor and ask for a tour of the lab. Someone will be happy to show you. Ask questions about how or why we do things. Laboratory professionals are always glad to talk about the work we do.

Mary M. Mayo, PhD, DABCC, MT(ASCP)
Director, Clinical Chemistry



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Free Glucose and Lipid Screening for SLU Hospital Employees

To celebrate National Laboratory Week, the Clinical Pathology Lab, 4th floor, will be offering free glucose testing and lipid screening for SLU Hospital employees from Monday, April 18 through Thursday, April 21.

We invite all SLU Hospital employees to come to the Lab on the 4th floor of the hospital between 6 am and 9 am April 18-21 to have a fasting blood sample collected. You must be fasting at least 8 hours prior to the collection. Complimentary analysis of glucose, total cholesterol, triglyceride,

HDL cholesterol and a calculated LDL will be performed by the Lab.

If you are unable to have your blood collected during the above time, you may have your blood collected by a co-worker who is competent and authorized and personally bring the sample to the 4th floor Core Lab for testing. Samples cannot be sent through the pneumatic tube system. One green top tube is required for testing, labeled with your name and date of birth. Fasting for at least 8 hours is recom-

mended prior to specimen collection.

Results of the analyses will be available the week of April 25-29 in the 4th floor Core Lab. Come to the Laboratory to obtain a copy of your results. ***After receiving your results, go to Healthy at Tenet to log completion of your Biometric Screening and earn 15 wellness credits for Healthy at Tenet.***

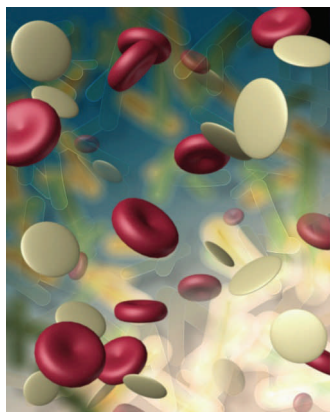
For questions, call Gary Dutridge, Lab Director, at ext. 7-8394.

Special points of interest:

- Free glucose and lipid screening during lab week for hospital employees
- SLUH first in region to launch 4th generation HIV screening

Saint Louis University Hospital Laboratory Services – The Team behind the Scenes

Lisa Wilson, Laboratory Supervisor



Recent data from the American Society for Clinical Pathology (ASCP) emphasize that between 70 and 80% of medical decisions are made using information obtained from clinical laboratory testing.



The team behind the scenes

Every hour of every day physicians, nurses and a variety of medical professionals are making patient care decisions that have been impacted by laboratory services provided by the clinical laboratory.

Recent data from the American Society for Clinical Pathology (ASCP) emphasize that between 70 and 80% of medical decisions are made using information obtained from clinical laboratory testing. This statistic confirms the importance of health care providers and the clinical laboratory staff working together behind the scenes to ensure optimal patient care.

Optimal patient care is achieved by continuous monitoring and improvement of caregiving practices. While there are many caregiving practices involved in patient care, there are two practices that can easily be improved when physicians and the clinical laboratory work together. They are laboratory test ordering practices and patient safety.

In a teaching environment, test ordering practices can be very difficult to monitor.

The key factor in test ordering is to make sure that *all* laboratory testing is considered medically necessary. In other words, does the patient's diagnosis support the test being ordered?

Once medical necessity has been established, when to have the test collected is a step that not only impacts test results, but can impact patient comfort. Ordering all non-stat testing to be collected at the patient's next scheduled draw time will be less disruptive for the patient and will help the laboratory to remain efficient in specimen collection. This in turn will ensure that test results are available for the physicians in a timely manner.

Patient safety is everyone's responsibility. In the practice of health care it is an absolute. The physician and laboratory personnel must ensure that the right test is collected on the right patient at the right time. Regardless of how many visits the physician has made to the patient, regardless of how many phlebotomies the lab has performed on the patient, it is a requirement to verify, at a minimum, the patient's name and date of birth for every procedure,

every time.

The laboratory at Saint Louis University Hospital is not just another department. With a combined total of over 120 technicians, technologists and administrative staff, the clinical laboratory of Saint Louis University Hospital works diligently behind the scenes generating the critical data used in the total evaluation of patient outcomes. Located on the fourth floor of the Desloge Towers, the laboratory staff is available 24/7, serving as a resource for all clinicians providing patient care.

April 25-29, 2011 is Medical Laboratory Professionals week. There will be many opportunities for clinicians to stop by the laboratory to meet the laboratory staff and have a behind-the-scenes view of the services they provide. To find out more about the laboratory and the services that are available, call 268-5222.

Resources:

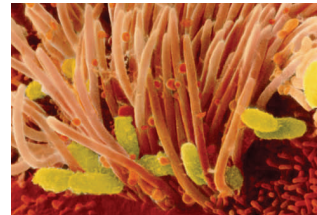
The Joint Commission, www.jointcommission.org
ASCP, www.ascp.org



Testing Methods for *Bordetella pertussis* at SLUH

Adam Meyer, M.D., Pathology Resident

In recent years outbreaks of *Bordetella pertussis*, the causative agent of “whooping cough,” have increased in the general population. At SLUH patient testing for *Bordetella pertussis* is performed by one of three methods: bacterial culture, polymerase chain reaction (PCR), or direct fluorescent antibody (DFA) smear. Of these three methods, PCR is preferred due to its increased sensitivity and fast turnaround time, with DFA being the least utilized. However, any of these methods may be ordered by the clinician.



Scanning EM of *Bordetella pertussis* and respiratory cilia

Sample collection for each specimen must occur within specific time frames. For culture, sample collection must occur within the first two weeks of the onset of coughing and before initiating antibiotic therapy. PCR samples may be obtained within three weeks of cough onset and do not require live organisms. However, testing after five days of antibiotic treatment yields an increase in false negative results. Specimens for testing must be obtained from aspiration or swabbing of the posterior nasopharynx. Throat swabs and anterior nasal swabs should not be used due to the low rate of DNA and organism recovery. Contamination of specimens for PCR testing may be problematic due to the presence of DNA from the organism, derived from pertussis vaccines, in the clinical environment. To prevent contamination several steps should be followed:

- Prepare and administer vaccines in areas separate from specimen collection
- Avoid contaminating surfaces, and clean surfaces with 10% bleach solution
- Wear clean gloves throughout specimen collection or vaccine preparation and administration, and dispose of gloves immediately upon the completion of procedure
- With liquid transport media ensure that the shaft of the swab is sterile or perform nasopharyngeal aspiration

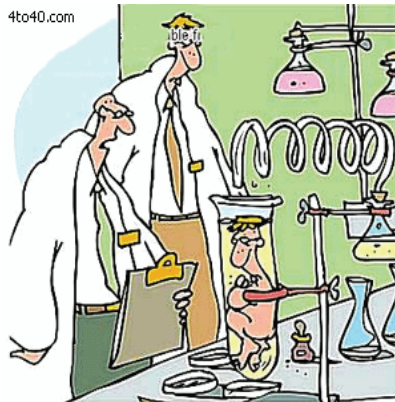
For more information on diagnostic testing, visit the CDC website at <http://www.cdc.gov/pertussis/clinical/diagnostic-testing/index.html>.

Note: If bacterial culture is desired, special transport media is required and can be acquired from the microbiology laboratory. The special transport media should be inoculated with the specimen on the swab or the aspirate at the patient’s bedside.

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Gary Dutridge, MBA, MT(ASCP),
Administrative Director
Carole Vogler, MD, Chair, Department of
Pathology

Laboratory Professionals Get Results



"Well, it certainly looks like your DNA. How many times have I told you to wear gloves before touching anything?"

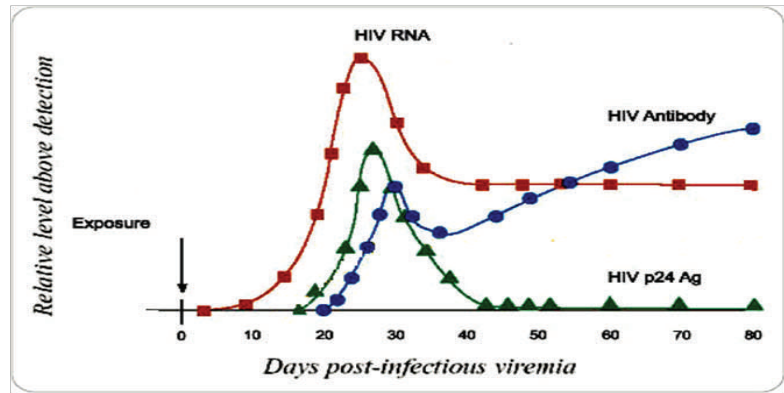
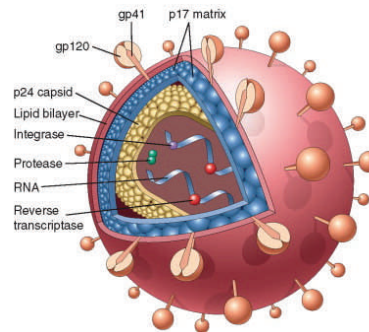


Figure 1

Figure 2

**Human Immunodeficiency Virus (Kumar et al., Robbins & Cotran
Pathologic Basis of Disease, 8th ed., © Elsevier, Inc.)**



HIV Screening: Earlier Detection

Matthew Prall, M.D., Pathology Resident

A major problem that has plagued early HIV diagnosis is the window period between infection and detection. Revisiting the early course of HIV infection helps map out the methods by which the virus can be detected.

After exposure to the virus occurs through blood, semen, vaginal fluids or breast milk with direct contact to the bloodstream or mucous membranes (oral membranes being an extremely rare site for transmission), the virus will begin to replicate its RNA in order to proliferate. This proliferation will create antigens to which the immune system will create antibodies. The order in which these entities are produced reflects laboratory detection respectively (figure 1).

Until recently the screening method widely used in SLUH and across the US was ELISA (enzyme-linked immunosorbent assay) laboratory and rapid "point of care" antibody tests which were able to minimize the window period to approximately 22 days post infection.

The infectivity of HIV correlates directly with HIV RNA levels which are a measurement of viral load. As

demonstrated in figure 1, antibody screening methods detect antibody at the peak of viral load only after one to two weeks of high infectivity as the HIV RNA proliferates.

Screening tests that detect HIV RNA could identify the infection earlier but high costs, turnaround time, and lack of FDA approval hinder current PCR and branched DNA detection methods from becoming mainstream screening tests.

Another possibility for earlier detection would be antigen-based testing, as antigen is detectable prior to antibodies. The p24 antigen (figure 2) HIV test is an older technique that by itself would not be adequate as a screening test because antigenemia transiently occurs during different stages of infection (figure 1).

However, combining the ELISA antibody test with the p24 antigen test would allow for earlier detection, further minimizing the window period but maintaining consistency. The antigen/antibody combination test from Abbott Diagnostics is now available in the SLUH lab and is able to detect HIV 16 days post infection.