

National Laboratory Professionals Week

This year “Lab Week” falls April 24 -30. It is our opportunity to celebrate all of the professionals who work here in the labs at Fletcher Allen in Pathology and Laboratory Medicine. As the Director of Fletcher Allen Laboratories, I have the distinct honor and privilege to work with the individuals who make a difference in the lives of patients and clinicians each and every day. I am humbled by the lengths they will often go to in pursuit of identifying a patient, collecting a specimen, stabilizing a sample, resulting a test and confirming a diagnosis. We also have an army of people who work in the lab to support these efforts and my thanks go out to them as well.

As part of our own week long celebrations in the lab, we have invited John Backus, PhD, from Ortho Clinical Diagnostics to come and speak to us about “Cardiac Biomarkers: NT-proBNP and Troponin I”. This presentation will be open to all of our clients and will be held in the Davis Auditorium in the UVM connector at 12:30-13:30, on Thursday April 28, 2011. Please come and join us.

Edwin Bovill, M.D.
Chairman, Pathology &
Laboratory Medicine

Laboratory Operations

National Medical Laboratory
Professionals Week
Changes to Outpatient Phlebotomy

Tech Tips

Getting Ready for Your Courier
Pick-up

Test News

Adenovirus Detection (VIRD)
GI Biopsy: Transition to 10%
Formalin
New Reflex Tests: Anti Neutrophil
Cytoplasmic Ab, Hemoglobin
A1c, and Hemoglobin
Electrophoresis
Hepatitis C Reflex Testing Change
Name Changes for Total Bilirubin,
Total and Free Testosterone,
and Total Protein
Pap Smears: Determining Sample
Adequacy
Quantification of Light Chains
Semen Fructose Discontinued
Tumor Markers: Change in
Reporting of Previous Results
Volatile Screen and Ethylene Glycol

Compliance

Reflex Testing Policy Review

LABORATORY OPERATIONS

Changes to Outpatient Laboratory Services

In order to enhance phlebotomy services for our community, we are opening new locations and expanding service at sites where our patients can go to have a laboratory sample collected.

Expanded Outpatient Laboratory Service at these locations:

University Health Center (UHC) Campus

Outpatient Laboratory Services, Lobby Area (street level)
1 So. Prospect Street, Burlington

UHC Outpatient Laboratory Service Hours

Monday – Friday 7:00 a.m. to 7:00 p.m.

UHC is located 0.3 miles west of the Ambulatory Care Center (ACC). The UHC site has ample FREE parking. This site has extended evening hours, 4 chairs, a private collection room and pediatric phlebotomy.

Fanny Allen Campus

101 College Parkway, Colchester

Fanny Allen Laboratory Service Hours

Monday – Friday 7:00 a.m. to 7:00 p.m.
Saturday and Sunday 9:00 a.m. to 1:00 p.m.

On **February 28, 2011**, the sample collection area expanded from 2 to 4 chairs and has *relocated* to the Medical Office Building (MOB) adjacent to the Fanny Allen building. Ample FREE parking.

LABORATORY OPERATIONS

New Outpatient Laboratory Service Center Opened March 7, 2011

Blair Park Given Building

353 Blair Park Road, Williston

Blair Park Given Building Laboratory Service Hours

Monday – Friday 7:00 a.m. to 4:00 p.m.

Blair Park is 5.5 miles southeast of the Ambulatory Care Center (ACC).
This site has 2 chairs and FREE parking.

Ambulatory Care Center (ACC)

Main Pavilion Level 2, Burlington

This site is open to serve the patients that come to the ACC for a clinic visit and also need a lab sample collection. We will not turn patients away from this site, but we would appreciate your help in encouraging patients to choose another site on weekdays. Saturday hours are open to all patients.

ACC Laboratory Service New Hours

Monday – Friday 7:00 a.m. to 5:00 p.m.

Saturday 9:00 a.m. to 1:00 p.m.

Downsizing from 7 chairs to 3 chairs

For evening collection: Please direct patients to either UHC or MOB for evening collections. ACC now closes at 5:00 pm

Getting Ready for your Courier Pick-up

In order to ensure optimal service for all of our patients, we ask that samples be processed, packaged and ready to go prior to the courier arriving at your office. The courier makes many stops on the way from your location to the laboratory, and it is important for specimens to be processed according to the instructions in the Laboratory Service Directory (<http://www.fletcherallen.org/testcatalog>).

If you have a late collection and you do not have time to allow the sample to clot and centrifuge, it might be a better choice to process the sample correctly and wait until the following day for the sample to be picked up. Improper handling can adversely affect laboratory results and patient care.

Packaging Samples

Temperature requirements must be followed to ensure sample integrity. Please package samples with identical transport temperatures together, and please package those with differing temperature requirements separately.

Primary Containers

The primary container is a leak-proof inner container (glass or plastic, such as test tubes). *This is the container the sample has contact with.* Before packaging, check the primary container for evidence of leaks, and please carefully turn snap or screw-capped containers upside down to ensure that their lids are on securely. A leaky sample may contaminate other patient samples and may render one or more samples unacceptable for testing.

If a sample container has a flat bottom, it should be placed so that it sits upright during storage.

Secondary Containers

The secondary or outer container is a water tight barrier such as a *sealed plastic bag*. For physician offices and clinics, we provide a medium sized bag to use for packaging samples. The secondary packaging must have a biohazard warning attached to it, and the exterior of the outer container must remain clean so that the package can be carried safely without wearing gloves outside the laboratory.

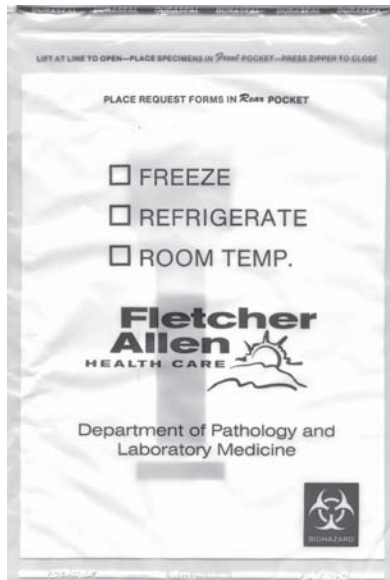
Additionally, these bags have an outer sleeve for the laboratory requisition and an inner sleeve that can *be sealed* for samples. Please be sure to **seal the bag** for the courier.

It is important to check-off on the bag the appropriate storage temperature for the samples contained inside. If a temperature is not selected, the courier will be unable to determine the correct temperature for transport. As a default, samples will be transported refrigerated.

It is not necessary to transport sample tubes in a Styrofoam holder, but if you choose to use one, it must be **sealed** inside a plastic bag.

These bags can hold a maximum of 12 samples. It is important not to overfill specimen transport bags. If there are too many samples in a bag, some of the specimens **may not be maintained at the proper temperature**.

TECH TIPS



Bag Dimensions 8 x 12 inches
Holds a **maximum of 12 samples**
For doctors' offices, clinics and inpatient locations.
Client/Inpatient floor must package samples by temperature. Clients should check the temperature box that applies to clearly indicate storage temperature and preserve sample integrity.

Keep a record of what you give to the courier for transport. Make sure you have packed all of the samples for the tests requested. The back copy of the laboratory requisition is for your office to use as documentation that samples were sent. The lab requisition also has a spot for you to date and initial when the report is received in your lab, if you choose to use it.

Lock Boxes

We provide insulated, locking metal containers for sample storage if the courier picks up after an office is closed. Samples must not be left in the lock boxes for more than three hours. Samples that require refrigeration should be prepared by the client accordingly. It is preferable that the boxes are kept inside a hall or entry way. Extra keys are available from Laboratory Customer Service (847-5121).

Please be courteous and have your samples ready before the courier arrives. Each time the courier has to wait for a sample; other offices are likely to be inconvenienced by a delay in sample pickup time. If you are having any problems with your lab courier, please contact Lynn Bryan at 847-9540.

TEST NEWS

Adenovirus Detection (VIRD)

Effective February 14, 2011, the Microbiology Laboratory changed the method used to detect Adenovirus from shell vial culture to polymerase chain reaction (PCR). Our laboratory is moving towards viral diagnosis by molecular PCR methods, which provides more sensitive and timely test results.

Test Name: Virus Detection

Test Code: VIRD

Report Name: Virus Detection

FAHC Translation Code: 5429

MayoAccess Code: FAH5429

Expected Value: No Adenovirus detected by PCR

Test Price: Please contact Laboratory Customer Service (847-5121 or 1-800-991-2799) for pricing information

Test Note: Please specify suspected virus(es) on the patient order.

Adenovirus Changes

Method	CPT	Change
Shell vial culture	87254 (possibly x 2)	Testing using this method ended on 2/13/11. Results were available in 2-7 days
PCR	87798	Effective 2/14/11 Adenovirus Testing is performed using PCR Techniques. Results are available in 2-3 days .

GI Biopsy: Transition to 10% Formalin

To facilitate molecular testing on GI specimens, the pathology department will begin a transition from Hollandes to **Formalin fixative for all GI biopsies** (10% neutral buffered formalin). This conversion began in February. The transition to formalin filled fixation vials in the clinical units will be coordinated by our histology manager (Jude Carpenter, phone 847-5116).

Until you have been switched over to 10% formalin, we ask that GI specimens for molecular testing (including KRAS assays) be sent in separate formalin-filled and specifically-labeled vials, in keeping with the prevailing protocol. If you have any questions concerning this change, please contact Dr. Anita Iyer (anita.iyer@vtmednet.org) in the Laboratory.

TEST NEWS

New Reflex Tests, Anti Neutrophil Cytoplasmic Ab, Hemoglobin A1c, and Hemoglobin Electrophoresis

Antineutrophil Cytoplasmic AB Reflex (ANCA) Tests - cANCA to Proteinase 3 (PR3AB) Testing

Antineutrophil cytoplasmic antibodies (ANCA) occur in patients with autoimmune vasculitides, including Wegener's granulomatosis, microscopic polyangiitis, or organ-limited variants thereof. ANCA react with enzymes in the cytoplasmic granules of human neutrophils, including proteinase 3 (PR 3), myeloperoxidase (MPO), elastase, and cathepsin G. Screening for ANCA can be performed by indirect fluorescent antibody testing. Autoantibodies to PR 3 classically occur in Wegener's granulomatosis and produce a pattern of granular cytoplasmic fluorescence in ethanol-fixed neutrophils called the C-ANCA pattern. Antibodies to MPO predominantly occur in patients with microscopic polyangiitis and produce a pattern of perinuclear fluorescence in ethanol-fixed neutrophils called the P-ANCA pattern. The Immunology Laboratory has added MPO testing to samples with a P-ANCA pattern.

As of January 24, 2011, samples with a C-ANCA pattern will have PR 3 testing added as well. If you have any questions concerning this change please contact Dr. Greg Sharp (gregory.sharp@vtmednet.org) in the Laboratory.

Initial Test	Reflex Criteria	Reflex Test	CPT
Anti Neutrophil Cytoplasmic Ab	Positive at screening dilution	Anti Neutrophil Cytoplasmic Ab Titer	86256
Anti Neutrophil Cytoplasmic Ab	Positive P-ANCA pattern	Myeloperoxidase Ab (MYL)	83516
Titer	Positive C-ANCA Pattern	Proteinase Ab (PR3AB)	82916

Hemoglobin (Hgb) A1C and A2 Reflex Testing Changes

Hemoglobin A1C Reflex of Suspected Abnormal Hemoglobin to Hemoglobin Electrophoresis

The methodology used in the Chemistry Laboratory for hemoglobin A1c analysis, high performance liquid chromatography, separates the different hemoglobin components in a hemolyzed sample so that the glycosylated hemoglobin can be quantified as a percentage of the hemoglobin present. In this process, abnormal hemoglobins may also be demonstrated. In order to be sure that the abnormal hemoglobin will not interfere with the assay and that an alternative assay need not be ordered, the abnormal hemoglobin is identified by hemoglobin electrophoresis. Starting January 19, 2011, this reflex hemoglobin electrophoresis will be reported and charged for, unless the hemoglobin has been previously identified. A record of the abnormal hemoglobin will be kept so that future hemoglobin A1c orders can be handled appropriately. If you have any questions concerning this change, please contact Dr. Greg Sharp (gregory.sharp@vtmednet.org) in the Chemistry laboratory.

Initial Test	Reflex Criteria	Reflex Test	Additional CPT
Hgb A1C	Suspicious Hgb not previously identified	Hemoglobin electrophoresis	83020 and 83020.26

TEST NEWS

Hemoglobin (Hgb) A2: Reflex of Suspected Elevated Hemoglobin A2 on Hemoglobin Electrophoresis

Routine hemoglobin electrophoresis supplies a qualitative screen for the percentage of Hgb A2. In the setting of appropriate red cell indices (elevated RBC and low MCV) and iron status, an increase in Hgb A2 is consistent with a diagnosis of beta thalassemia trait. The appropriate test to confirm this finding is a quantitative Hgb A2, which can be performed on the same sample used for electrophoresis. As of January 19, 2011, this test will be performed reflexively on specimens submitted for electrophoresis when the appropriate clinical conditions are met and the Hgb A2 appears elevated on electrophoresis. If you have any questions concerning this change, please contact Dr. Greg Sharp (gregory.sharp@vtmednet.org) in the Chemistry laboratory.

Initial Test	Reflex Criteria	Reflex Test	Additional CPT
Hemoglobin electrophoresis	Suspicious for elevation of Hgb A2	Hgb A2	83021

Important note: The ordering physician or provider has the option of declining reflex testing by writing in the name of the test in the box provided at the bottom right of the laboratory requisition or by so indicating in his or her electronic order system.

Hepatitis C Reflex Testing Change

It has been recommended that low level positives for hepatitis C antibody testing (those with a S/CO ratio less than 8) be confirmed. The reflex testing for this has been the Hepatitis C Recombinant Immunoblot Assay (HCRIBA). Mayo Medical Laboratories has recently announced that the reagents for this assay are not currently available. As a result of this, confirmation testing will be reflexed to Hepatitis C Virus RNA Detection and Quantification by Real-Time Reverse Transcription-PCR (Test Code: HCVPCR Mayo Number: 83142). If this test is positive it is diagnostic of active hepatitis C infection. If it is negative, it is suggestive of either a resolved past hepatitis C infection, or a false reactive hepatitis C antibody test. Since hepatitis C virus tests can be negative in certain phases of hepatitis C infection, it is suggested that repeat testing be performed in 1 to 3 months for high risk patients or if clinically indicated. If you have any questions concerning this change please contact Dr. Greg Sharp (gregory.sharp@vtmednet.org) in the Laboratory.

Name Changes for TBIL, FTES, TP

The following test names will change on April 11, 2011:

Old Test Name	Test Code	New Test Name
Total Bilirubin	TBIL	Bilirubin, Total
Total and Free Testosterone	FTES	Testosterone, Total and Free
Total Protein	TP	Protein, Total

TEST NEWS

Pap Smears: Determining Sample Adequacy

We frequently receive questions regarding Pap sample adequacy, how the determination is made that a sample is unsatisfactory for evaluation, and why the patient is charged regardless of whether the sample is satisfactory or not.

All Pap smear samples we receive are processed and evaluated for adequacy of cervical cell samples in accordance with The Bethesda System for Pap nomenclature utilizing a standard set of criteria, including the presence of greater than 40 squamous epithelial cells/10 high power fields (hpf) (or greater than 600 squamous epithelial cells/10 low power fields (lpf) on ThinPrep® slides).

At Fletcher Allen, if a Pap sample is determined to have inadequate cellularity, an attempt is made to clear any observed interfering factors (blood, mucus, inflammation) utilizing specially developed procedures, and a second slide is prepared. If, after examination of the second slide, the sample is still considered to have inadequate cellularity, both slides are examined by a second cytotechnologist in order to confirm that the sample is unsatisfactory.

An obscuring factor is reported when there is scant cellularity that falls short of meeting the guidelines for unsatisfactory for evaluation, but the presence of this factor is felt to have contributed to the scant cell yield. These factors include blood, mucus, inflammation, and lubricant.

To reduce the likelihood of an unsatisfactory sample, we recommend that you:

- Avoid sample collection during active menses.
- Do not use lubricant on the speculum prior to insertion. If lubricant is unavoidable, lubricants containing ingredients known as “carbomers” or “carbopol polymers”, which are prone to interfere with liquid based Pap tests, should be avoided. Lubricant should be applied sparingly on the outer portion of the speculum *with great care to avoid the tip*. Please contact us for information regarding lubricants that do not contain these interfering substances.
- Discard copious cervical mucus before sample collection (do not place in ThinPrep® vial).

Occasionally, the biology of the patient contributes to the scant cellularity of the sample. This is most commonly seen in patients with low hormonal levels, such as post-menopausal patients. Additional steps may be appropriate to increase the cell yield in these patients, including the administration of topical estrogen prior to obtaining a Pap test. Please contact us at 847-6199 if you would like more information about these issues, or if you need specific information regarding proper sample collection utilizing either the cytobrush/plastic spatula or cytobroom collection device.

If abnormal cells are detected, the specimen is NEVER categorized as Unsatisfactory, and the appropriate diagnostic interpretation is reported along with any obscuring factors identified.

All Paps, including those reported as unsatisfactory, require processing and evaluation. At Fletcher Allen, our unsatisfactory rate is 1.53%. This rate is within accepted national guidelines. It is considered standard practice to bill for Paps reported as unsatisfactory, and ICD9 codes have been developed to account for repeat testing as clinically indicated.

COMPLIANCE UPDATE

Quantification of Light Chains

On December 8, 2010, the Chemistry laboratory changed the ordering options for the Quantification of Light Chains in urine. The new order codes will allow a choice between a random urine collection or a 24-hour urine collection. The assay performed on a random urine (Test Code: UQMR) will include the following: urine total protein, urine electrophoresis and quantification of monoclonal light chains using densitometry. The assay performed on a 24 hour urine collection (UQM24) will include all of the above as well as a 24 hour urine total protein calculation.

This test should only be ordered on patients who have been previously identified by immunofixation as having free monoclonal light chains in their urine. The free monoclonal light chains will be quantified using densitometry and will be reported as a percentage. The percentage can be multiplied by the total protein to obtain an approximate mg/dl value attributable to the light chains. If you have questions concerning this change, please contact Dr. Greg Sharp in the Chemistry Laboratory (gregory.sharp@vtmednet.org).

Semen Fructose Discontinued

On March 1, 2011, the Chemistry Laboratory discontinued performing the semen fructose assay. If you have any questions concerning this change, please contact Dr. Greg Sharp (gregory.sharp@vtmednet.org) in the Chemistry Laboratory.

Tumor Markers: Change in Reporting of Previous Results

For a number of years, the Chemistry Laboratory has included the values of previous results on reports for certain tumor markers (PSA, CEA and CA27-29) to facilitate their interpretation. With the completion of the rollout of PRISM (Fletcher Allen's electronic health record) to outpatient areas, this is no longer done for those sites with access to PRISM. This change took effect on January 19, 2011. If you have any questions concerning this change, please contact Dr. Greg Sharp (gregory.sharp@vtmednet.org) in the Chemistry Laboratory.

Volatile Screen and Ethylene Glycol

The Chemistry Laboratory is requesting that clients notify us when sending specimens for Volatile Screen (Quantitation of Methanol and Isopropanol, Test Code: ALC) and Ethylene Glycol testing (Test Code: ETHYL). This notification will allow time for us to prepare the instrumentation and ensure an appropriate turnaround time. Please call Customer Service at 847-5121 or Chemistry at 847-5120 to notify us that a sample is being sent for this type of testing.

***To view the most up-to-date test information, go to our online test catalog at www.flethderallen.org/testcatalog
Enter the test name or test code into the appropriate box and press "SEARCH."
For MML tests, press on the Mayo Test Number link for more test information.***

COMPLIANCE UPDATE

Reflex Testing Policy Review

We offer reflex testing in accordance with the Office of Inspector General's Compliance Program Guidelines for Clinical Laboratories. We will perform reflex tests automatically when the following conditions are met:

1. A physician or other provider orders a test listed below and:
2. The initial test result meets the reflex criteria, or
3. The specimen was sent to anatomic pathology, and additional studies are needed to complete the evaluation of the case.

The ordering physician or provider has the option to decline reflex testing. The decision to decline can be communicated to the Laboratory via the laboratory requisition, in an electronic ordering system, or by contacting Laboratory Customer Service (847-5121). If a test subject to reflex testing is added by phone, the physician or his/her designee must communicate to the Laboratory if they wish to decline the reflex testing; otherwise, the conditions for reflex testing as shown below will apply.

Initial Test	Reflex Criteria	Reflex Test(s)	Additional CPT billed
Amphetamine Screen, urine	Positive result	Amphetamine confirmation	82145
Anti Neutrophil Cytoplasmic Ab	Positive at screening dilution	Anti Neutrophil Cytoplasmic Ab titer	86256
Anti Neutrophil Cytoplasmic Ab	Positive perinuclear pattern	Myeloperoxidase Ab	83520
Antinuclear Ab	ANA positive at screening dilution	Antinuclear Ab titer	86039
Bacterial Culture	If two swabs submitted	Gram stain	87205
Dilute Russell Viper Venom	Result above normal range	LA Confirm test	85613
Fluid cell count	Any WBCs present	Differential	89051
Hemagram & Differential	See Lab Service Directory	Pathologist's smear review and interpretation	85060
Hemoglobin A1C	Suspicious Hgb not previously identified	Hemoglobin electrophoresis	83020 83020.26
Hemoglobin electrophoresis	Suspicious for elevation of Hemoglobin A2	Hemoglobin A2	83021
Hepatitis A Antibody	Positive result	Hepatitis A-IgM Antibody confirmation	86709
Hepatitis C Antibody	Low level reactivity	Hepatitis C by RT PCR	87522
HLA Class I Antibody screen	Positive	HLA Class I AB ID	86849
HLA Class II Antibody screen	Positive	HLA Class II AB ID	86849
Lyme Antibody	Pos or equivocal result	Lyme Western blot	86618 x2
Mitochondrial Ab	Positive at screening dilution	Mitochondrial Ab titer	86256
Parietal Ab	Positive at screening dilution	Parietal Ab titer	86276
Platelet Function Analysis	Above normal limit	COL/ADP cartridge	85576
Protein Electrophoresis, Serum	Suspicious band not previously identified	Immunofixation	86334
Protein Electrophoresis, Urine	Suspicious band not previously identified	Immunofixation	86335
Sickledex	Positive result	Hemoglobin electrophoresis	83020
Syphilis Serology:			
Treponemal Ab	Reactive or Equivocal	Syphilis Ab (IgG & IgM)	86780
Syphilis Ab (IgG & IgM)	Reactive	RPR	86592
RPR	Reactive	RPR titer	86593
Smooth Muscle Ab	Positive at screening dilution	Smooth Muscle Ab titer	86256
Urinalysis w/reflex (UA)	When protein 1+ or blood positive or leukocyte esterase positive	Urine microscopic	81001

The following tests include a reflex scenario which is expressly stated as part of the order. In this case, there is no option to decline.

Initial Test	Reflex Criteria	Reflex Test(s)	Additional CPT billed
Thyroid Cascade (TTC)	TSH performed first. If outside normal range, then a free T4 is ordered. If free T4 is less than 1.9 ng/ml and TSH is less than 0.1 ulu/ml, then a total T3 is ordered	Free T4 Total T3	84439 84480
Culture if urinalysis positive (CIFP)	Positive nitrite or leukocyte esterase or 1 wbc/hpf	Bacterial culture	87086
PTT 50/50 mix (PTT50)	PTT performed first; if PTT is abnormal and patient is on heparin, then heparin is neutralized and a second PTT is done	PTT PTT (second) Heparin neutralization	85730 85730 85525



A Publication of
Pathology & Laboratory Medicine
Ambulatory Care Center EP1-100
Mail Stop 233 MP-1
Burlington VT 05401

Phone: (802)847-5121 or
(800)991-2799
<http://www.fletcherallen.org/lab>