Cleveland Clinic

Cleveland Clinic Laboratories

Technical Update • November 2017

Cleveland Clinic Laboratories is dedicated to keeping you updated and informed about recent testing changes. This Technical Update is provided on a monthly basis to notify you of any changes to the tests in our catalog.

Recently changed tests are bolded, and they could include revisions to methodology, reference range, days performed, or CPT code. Deleted tests and new tests are listed separately. For your convenience, tests are listed alphabetically and order codes are provided.

To compare the new information with previous test information, refer to the online Test Directory at clevelandcliniclabs.com. Test information is updated in the online Test Directory on the Effective Date stated in the Technical Update. Please update your database as necessary.

For additional detail, contact Client Services at 216.444.5755 or 800.628.6816, or via email at clientservices@ccf.org.

Test Update Page #	Summary of Changes by Test Name	Order Code	Name Change	New Test	Test Discontinued	Special Information	Specimen Requirement	Component Change(s)	Methodology	Reference Range	Days Performed/Reported	Stability	CPT	Fee
4	Acetaminophen					■	■		■	■		■		
4	Acetylcholine Receptor Blocking Ab											■		
4	ADmark ApoE Genotype (Symptomatic)					■					■	■		
4	ADmark PS-1 Analysis, Symptomatic								■		■	■		
4	Aldosterone, Urine											■		
4	Aldosterone, Urine 24 Hour											■		
5	Allergen, Acacia IgE						■					■		
5	Allergen, Candida albicans IgE						■					■		
5	Allergen, Perch IgE					■	■		■					
5	Allergen, Respiratory Region 8						■					■		
6	Alpha-1 Antitrypsin Genotyping												■	
6	Amikacin, Post Dose					■	■		■			■		
6	Amikacin, Pre Dose					■	■		■			■		
6	Amikacin, Random					■	■		■			■		
6	Ammonia						■			■		■		
7	Angiotensin Converting Enzyme, CSF					■	■							
7	Arsenic, Urine 24 Hr					■				■	■			
7	Benzene Quantitation, Whole Blood					■	■				■	■		
8	Beta hCG Quant Tumor Marker					■	■		■	■	■	■		
33	Brodifacoum				■									
8	Cadasil DNA test					■					■			
9	Cadmium Exposure Panel, OSHA					■	■			■		■		
9	Cadmium, Urine					■				■	■			

Test Update Page #	Summary of Changes by Test Name	Order Code	Name Change	New Test	Test Discontinued	Special Information	Specimen Requirement	Component Change(s)	Methodology	Reference Range	Days Performed/Reported	Stability	CPT	Fee
33	Caffeine				■									
10	Carbamazepine					■	■		■	■		■		
10	Ceruloplasmin						■					■		
10	Chromium, Urine					■	■			■				
11, 33	Chromogranin A					■	■		■	■	■	■		■
11	Coccidioides IgG and IgM Antibodies					■	■			■	■			
11	Copper						■							
11	Copper/Zinc						■							
12	Cortisol, Saliva					■	■	■	■	■	■	■		
12	Cryptococcus Ag Detection						■					■		
12	Cytomegalovirus IgG Avidity					■	■				■	■		
13	DHEA					■	■		■	■	■	■		
14	Digoxin					■	■		■	■		■		
14	Duchenne/Becker Muscular Dystrophy (DMD) Deletion/Duplication with Reflex to Sequencing					■								
14	Echinococcus Ab, IgG					■	■			■				
32	Enteric Bacterial Panel by PCR			■										
14	Enterovirus by PCR, Nasopharyngeal Swab					■			■					
14	Erb-b2												■	
14–15	Ethanol					■	■		■			■		
15	Fatty Acids, Free (Non-Esterified)					■	■		■	■	■	■		
33	Fetal Fibronectin				■									
15	FibroSpect II					■	■		■		■			
32	FISH for ALK Cyto Block			■										
32	FISH for RET Cyto Block			■										
32	FISH for ROS1 Cyto Block			■										
16	FLT3 Mutation Detection by PCR					■	■				■	■		
16	Fungal Antibodies by CF, CSF					■	■				■			
16	Fungitell Assay for (1,3)-B-D-Glucan					■	■		■		■	■		
16	Fungus CSF Culture/CAD											■		
17	Fungus Screen						■					■		
17	G-6-PD Quantitative										■			
17	Gentamicin, Post Dose					■	■		■			■		
17	Gentamicin, Pre Dose					■	■		■			■		
18	Gentamicin, Random					■	■		■			■		
18–19	Heavy Metals, Urine					■				■	■			
19–20	Heavy Metals with Cadmium, Ur					■				■	■			
20, 33	Hemiplegic Migraine Evaluation					■	■				■		■	■
21	Hepatitis Be Antibody					■	■		■		■	■		
21	Hepatitis B Virus Genotyping					■	■				■			
21, 33	Herpes Simplex Virus by PCR, CSF										■	■		■

Test Update Page #	Summary of Changes by Test Name	Order Code	Name Change	New Test	Test Discontinued	Special Information	Specimen Requirement	Component Change(s)	Methodology	Reference Range	Days Performed/Reported	Stability	CPT	Fee
21–22	Human Metapneumovirus by PCR		■			■	■							
22	Hydroxylase-21 Antibody					■	■		■	■		■		
22	Infliximab Activity and Neutralizing Antibody					■	■		■					
22	Lactose Tolerance Test						■			■		■		
33	Lamellar Body Count				■									
23	Lead, Urine 24 Hour					■	■			■				
23	Lithium						■		■	■		■		
24	Liver Kidney Microsome IgG Autoabs					■	■		■	■	■	■		
24	LTT Mitogen Screen					■	■							
24	Lymphocyte Transformation Test					■	■							
24	Magnesium RBC					■	■			■	■	■		
25	Meconium Drug Screen 9					■	■							
25	Melanocyte Stimulation Hormone, Alpha (a-MSH)										■	■		
25	Mercury, Urine 24 Hour					■				■	■			
25	Mycophenolic Acid					■	■			■		■		
26	Nuclear Antibody by IFA, IgG					■	■			■				
33	Organism Identification, Anaerobic													■
26	Osmolality						■					■		
26	Osmotic Fragility, Erythrocyte					■	■							
27	Phenobarbital					■	■		■	■		■		
27	Phenytoin					■	■		■			■		
33	Protein, Synovial Fluid				■									
27	Pseudocholinesterase Phenotype					■	■	■		■				
28	PTH Related Peptide					■	■		■	■	■	■	■	
28	Reverse T3					■								
28	Rheumatoid Factor IgM, IgG & IgA					■	■		■				■	
28	Rubella IgM Antibody					■	■		■					
29	Salicylate					■	■		■	■		■		
33	Shiga Toxin Detection				■									
33	SMAD3 Gene Sequencing				■									
33	Stool Culture/EIA				■									
33	T-Cell Receptor Delta Using BIOMED2 Primers				■									
29	Theophylline					■	■		■			■		
29	Tobramycin, Post Dose					■	■		■			■		
30	Tobramycin, Pre Dose					■	■		■			■		
30	Tobramycin, Random					■	■		■			■		
30	Toxicology Screen, Urine					■			■					
30	Type and Screen						■							
30	Valproic Acid					■	■		■			■		
31	Vancomycin					■	■		■			■		
31	Varicella Zoster IgG Ab, CSF					■	■							
31	Zinc						■							

Test Changes

Test Name	Order Code	Change	Effective Date
Acetaminophen	ACETM	**Special Information: Do not collect in a gel separator tube.** **Clinical Information: The Rumack–Matthew nomogram can be used to estimate the probability of hepatotoxicity via the relationship of plasma acetaminophen concentration to the post–ingestion interval (Rumack and Matthew. *Pediatrics.* 1975; 55:871-876 and Rumack et al. *Arch Intern Med.* 1981; 141: 380-385).** **Specimen Requirement:** 1 mL plasma from a **lithium heparin green top tube;** Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer plasma to a CCL tube and refrigerate;** Refrigerated *OR* 1 mL plasma from an **EDTA lavender top tube;** Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer plasma to a CCL tube and refrigerate;** Refrigerated *OR* 1 mL serum from a **red top tube with no additive;** Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer serum to a CCL tube and refrigerate;** Refrigerated **Stability:** Ambient: **After separation from cells: 24 hours** Refrigerated: After separation from cells: **7 days** Frozen: After separation from cells: **6 months** **Methodology: Colorimetry** **Reference Range:** 0–99 Years: 10–**30 µg/mL**	12/28/17
Acetylcholine Receptor Blocking Ab	ACEBLC	**Stability:** Ambient: **1 day** Refrigerated: **7 days** Frozen: **720 days**	11/6/17
ADmark ApoE Genotype (Symptomatic)	APOALZ	**Special Information:** Higher blood volumes ensure adequate DNA quantity, which varies with WBC, specimen condition, and need for confirmatory testing. **This test requires physician attestation that patient consent has been received.** **Clinical Information:** This test should only be ordered for individuals with symptoms of dementia. Test will not be performed on individuals less than 18 years of age. **Pre-test and post-test genetic counseling is strongly recommended. Clinically significant for detection of ApoE2, E3 and E4 alleles.** **Stability:** Ambient: 10 days Refrigerated: 10 days Frozen: **90 days** **Days Performed: Varies** **Reported: 8**–15 days	11/27/17
ADmark PS-1 Analysis, Symptomatic	PS1SY	**Stability:** Ambient: 10 days Refrigerated: 10 days Frozen: **Unacceptable** **Methodology: Next Gen Sequencing** **Days Performed: Varies** **Reported: 22**–29 days	11/27/17
Aldosterone, Urine	UALDO1	**Stability:** Ambient: 24 hours Refrigerated: **5** days (with boric acid preservative) Frozen: 4 weeks (with boric acid preservative)	11/6/17
Aldosterone, Urine 24 Hour	UALDOS	**Stability:** Ambient: 24 hours Refrigerated: **5** days (with boric acid preservative) Frozen: 4 weeks (with boric acid preservative)	11/6/17

Test Changes (Cont.)

Test Name	Order Code	Change	Effective Date
Allergen, Acacia IgE	ACACIA	**Specimen Requirement: 0.5 mL** serum from a serum separator (gold) tube; Minimum: **0.3 mL; Submitting the minimum volume will not allow for repeat testing or add-ons; Required volume of 0.5 mL is preferred when possible; An extra 50 µL will be required for each additional allergen ordered;** Refrigerated *OR* **0.5 mL plasma from an EDTA lavender top tube;** Minimum: **0.3 mL; Submitting the minimum volume will not allow for repeat testing or add-ons; Required volume of 0.5 mL is preferred when possible;** Refrigerated *OR* **0.5 mL** plasma from a lithium heparin (light green) plasma separator tube (PST); Minimum: **0.3 mL; Submitting the minimum volume will not allow for repeat testing or add-ons; Required volume of 0.5 mL is preferred when possible;** Refrigerated **Stability:** Ambient: **1 day** Refrigerated: 7 days Frozen: **14 days**	1/4/18
Allergen, Candida albicans IgE	CNDIDA	**Specimen Requirement: 0.5 mL** serum from a serum separator (gold) tube; Minimum: **0.3 mL; Submitting the minimum volume will not allow for repeat testing or add-ons; Required volume of 0.5 mL is preferred when possible; An extra 50 µL will be required for each additional allergen ordered;** Refrigerated *OR* **0.5 mL** plasma from an **EDTA lavender top tube;** Minimum: **0.3 mL; Submitting the minimum volume will not allow for repeat testing or add-ons; Required volume of 0.5 mL is preferred when possible;** Refrigerated *OR* **0.5 mL** plasma from a lithium heparin (light green) plasma separator tube (PST); Minimum: **0.3 mL; Submitting the minimum volume will not allow for repeat testing or add-ons; Required volume of 0.5 mL is preferred when possible;** Refrigerated **Stability:** Ambient: **1 day** Refrigerated: 7 days Frozen: **14 days**	1/4/18
Allergen, Perch IgE	PERCH	**Special Information: Hemolyzed, icteric or lipemic specimens are unacceptable. Include an additional 0.1 mL serum for each additional allergen ordered. This test is New York DOH approved.** **Specimen Requirement:** 0.5 mL serum from a serum separator (gold) tube; Minimum: **0.34 mL, Note: Add 0.04 mL for each additional allergen ordered; Separate serum from cells ASAP or within 2 hours of collection; Transfer 0.5 mL serum plus 0.1 mL for each additional allergen ordered to a standard aliquot tube;** Ambient *OR* 0.5 mL serum from a red top tube with no additive; Minimum: **0.34 mL, Note: Add 0.04 mL for each additional allergen ordered; Separate serum from cells ASAP or within 2 hours of collection; Transfer 0.5 mL serum plus 0.1 mL for each additional allergen ordered to a standard aliquot tube;** Ambient **Methodology: Enzyme Immunoassay (EIA)**	Effective immediately
Allergen, Respiratory Region 8	RESPR8	**Specimen Requirement:** 3 mL serum from a serum separator (gold) tube; Minimum: **1.8 mL; Submitting the minimum volume will not allow for repeat testing or add-ons; Required volume of 3 mL is preferred when possible;** Refrigerated *OR* 3 mL plasma from a lithium heparin (light green) plasma separator tube (PST); Minimum: **1.8 mL; Submitting the minimum volume will not allow for repeat testing or add-ons; Required volume of 3 mL is preferred when possible;** Refrigerated *OR* 3 mL **plasma from an EDTA lavender top tube;** Minimum: **1.8 mL; Submitting the minimum volume will not allow for repeat testing or add-ons; Required volume of 3 mL is preferred when possible;** Refrigerated **Stability:** Ambient: **1 day** Refrigerated: 7 days Frozen: **14 days**	1/4/18

Test Changes (Cont.)

Test Name	Order Code	Change	Effective Date
Alpha-1 Antitrypsin Genotyping	HA1AT	**CPT:** 81332 x 1, G0452 x 1	Effective immediately
Amikacin, Post Dose	AMIKPO	**Special Information: Do not collect in a gel separator tube.** **Clinical Information: Draw 30 minutes after completion of infusion.** **Specimen Requirement:** 1 mL plasma from a sodium or lithium heparin green top tube; Minimum: 0.5 mL; **Do not collect in a gel separator tube;** Centrifuge and transfer plasma to a **CCL tube and freeze; Frozen** *OR* 1 mL serum from a **red top tube with no additive;** Minimum: 0.5 mL; **Do not collect in a gel separator tube;** Centrifuge and transfer serum to a **CCL tube** and refrigerate; Freeze if storage/transport time exceeds **48** hours; Refrigerated *OR* 1 mL plasma from an **EDTA lavender top tube;** Minimum: 0.5 mL; **Do not collect in a gel separator tube;** Centrifuge and transfer plasma to a **CCL tube** and refrigerate; Freeze if storage/transport time exceeds **48** hours; Refrigerated **Stability:** Ambient: **After separation from cells:** 8 hours Refrigerated: After separation from cells: 48 hours Frozen: After separation from cells: **4 weeks** **Methodology: Kinetic Interaction of Microparticles in a Solution**	12/28/17
Amikacin, Pre Dose	AMIKPR	**Special Information: Do not collect in a gel separator tube.** **Clinical Information: Draw just prior to next infusion.** **Specimen Requirement:** 1 mL plasma from a sodium or lithium heparin green top tube; Minimum: 0.5 mL; **Do not collect in a gel separator tube;** Centrifuge and transfer plasma to a **CCL tube and freeze; Frozen** *OR* 1 mL serum from a **red top tube with no additive;** Minimum: 0.5 mL; **Do not collect in a gel separator tube;** Centrifuge and transfer serum to a **CCL tube** and refrigerate; Freeze if storage/transport time exceeds **48** hours; Refrigerated *OR* 1 mL plasma from an **EDTA lavender top tube;** Minimum: 0.5 mL; **Do not collect in a gel separator tube;** Centrifuge and transfer plasma to a **CCL tube** and refrigerate; Freeze if storage/transport time exceeds **48** hours; Refrigerated **Stability:** Ambient: **After separation from cells:** 8 hours Refrigerated: After separation from cells: 48 hours Frozen: After separation from cells: **4 weeks** **Methodology: Kinetic Interaction of Microparticles in a Solution**	12/28/17
Amikacin, Random	AMIKRA	**Special Information: Do not collect in a gel separator tube.** **Specimen Requirement:** 1 mL plasma from a sodium or lithium heparin green top tube; Minimum: 0.5 mL; **Do not collect in a gel separator tube;** Centrifuge and transfer plasma to a **CCL tube and freeze; Frozen** *OR* 1 mL serum from a **red top tube with no additive;** Minimum: 0.5 mL; **Do not collect in a gel separator tube;** Centrifuge and transfer serum to a **CCL tube** and refrigerate; Freeze if storage/transport time exceeds **48** hours; Refrigerated *OR* 1 mL plasma from an **EDTA lavender top tube;** Minimum: 0.5 mL; **Do not collect in a gel separator tube;** Centrifuge and transfer plasma to a **CCL tube** and refrigerate; Freeze if storage/transport time exceeds **48** hours; Refrigerated **Stability:** Ambient: **After separation from cells:** 8 hours Refrigerated: After separation from cells: 48 hours Frozen: After separation from cells: **4 weeks** **Methodology: Kinetic Interaction of Microparticles in a Solution**	12/28/17
Ammonia	NH3	**Specimen Requirement:** 1 mL plasma from an EDTA lavender top tube; Minimum: 0.5 mL; Centrifuge, aliquot and freeze plasma within **30** minutes of collection into a **CCL tube** **Stability:** Ambient: **Not Acceptable** Refrigerated: After separation from cells: **2** hours Frozen: **After separation from cells: 21 days** **Reference Range:** Male: **16–60 µmol/L** Female: 11–**51 µmol/L**	12/28/17

Test Changes (Cont.)

Test Name	Order Code	Change	Effective Date
Angiotensin Converting Enzyme, CSF	CACE	**Special Information:** Hemolyzed **or xanthochromic** samples will be rejected. **This test is New York DOH approved.** **Clinical Information: Support diagnosis of neurosarcoidosis. May be used to evaluate treatment response.** **Specimen Requirement:** 1 mL cerebrospinal fluid (CSF) in a clean container; Minimum: **0.5 mL; Separate from cells within one hour of collection and transfer CSF to standard aliquot tube;** Frozen	11/13/17
Arsenic, Urine 24 Hr	UARSND	**Special Information:** Indicate total volume. Provide all required demographics to meet State Health Department requirements. Patient preparation: Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, nonessential over-the-counter medications (upon the advice of their physician), and avoid shellfish and seafood for 48–72 hours. High concentrations of iodine may interfere with elemental testing. Abstinence from iodine-containing medications or contrast agents for at least one month prior to collecting specimens for elemental testing is recommended. Urine specimens collected within 48 hours after administration of gadolinium (Gd) contrast media and acid preserved samples are unacceptable. Specimens contaminated with blood or fecal material or specimens transported in non-trace element-free transport tubes (with the exception of the original device) are unacceptable. **ARUP studies indicate that refrigeration of urine alone, during and after collection, preserves specimens adequately if tested within 14 days of collection. This test is New York DOH approved.** **Clinical Information: Preferred test for the assessment of acute or chronic arsenic exposure.** If total arsenic concentration is between 35–2000 µg/L, then Arsenic, Fractionated, will be added to determine the proportion of organic, inorganic, and methylated forms. Additional charges apply. The ACGIH Biological Exposure Index is 35 µg/L, for the sum of the inorganic and methylated forms of arsenic. If low-level chronic poisoning is suspected, the µg/gCRT ratio may be more sensitive than the total arsenic concentration. It may be appropriate to fractionate specimens with a µg/gCRT ratio > 30 µg/gCRT despite a total arsenic concentration < 35 µg/L; the laboratory will perform this on request. **Reference Range:** Arsenic–**per volume** (µg/L) 0–99 Years: **0.0–34.9 µg/L (Based on Biological Exposure Index)** Arsenic–**per24h** (µg/day) 0–99 Years: **0.0–49.9 µg/d** Arsenic–**ratio to CRT** (µg/g CRT) 0–99 Years: **0.0–29.9 µg/g crt** **Days Performed: Sunday–Saturday** **Reported:** 2–6 days	11/13/17
Benzene Quantitation, Whole Blood	BENZE	**Special Information: This test is New York DOH approved.** **Specimen Requirement:** 2 mL whole blood in an EDTA lavender top tube; Minimum: 0.7 mL; **Send whole blood in original collection tube;** Refrigerated *OR* 2 mL whole blood in a potassium oxalate/sodium fluoride (gray) tube; Minimum: 0.7 mL; **Send whole blood in original collection tube;** Refrigerated **Stability:** Ambient: Unacceptable Refrigerated: 2 **months** Frozen: 3 weeks **Days Performed:** Varies **Reported:** 4–**11** days	Effective immediately

Test Changes (Cont.)

Test Name	Order Code	Change	Effective Date
Beta hCG Quant Tumor Marker	BHCG	**Special Information: Allow specimen to clot completely at room temperature. Specimens left to clot at 2–8 °C or specimens subjected to repeated freeze/thaw cycles are not acceptable. Cerebrospinal fluid (CSF) is unacceptable. This test is New York DOH approved.** **Clinical Information: Human chorionic gonadotropin (hCG) is a valuable aid in the management of patients with trophoblastic tumors, nonseminomatous testicular tumors, and seminomas when used in conjunction with information available from the clinical evaluation and other diagnostic procedures. Increased serum hCG concentrations have also been observed in melanoma, carcinomas of the breast, gastrointestinal tract, lung, and ovaries, and in benign conditions, including cirrhosis, duodenal ulcer, and inflammatory bowel disease. This result cannot be interpreted as absolute evidence of the presence or absence of malignant disease. This result is not interpretable as a tumor marker in pregnant females. The combination of the specific monoclonal antibodies used in the Roche Beta HCG electrochemiluminescent immunoassay recognize the holo-hormone, "nicked" forms of hCG, the beta-core fragment, and the free beta-subunit. Results obtained with different test methods or kits cannot be used interchangeably. Although this assay is FDA cleared for use in the detection of pregnancy, it is not labeled for use as a tumor marker.** **Specimen Requirement:** 1 mL serum from a serum separator (gold) tube; Minimum: **0.4 mL; Allow specimen to clot completely at room temperature;** Separate serum from cells ASAP or within 2 hours of collection; **Transfer serum to standard aliquot tube;** Refrigerated *OR* 1 mL plasma from an EDTA lavender top tube; Minimum: **0.4 mL;** Separate plasma from cells within 2 hours of collection **and transfer to standard aliquot tube;** Refrigerated *OR* 1 mL plasma from a sodium or lithium heparin green top tube; Minimum: **0.4 mL;** Separate plasma from cells within 2 hours of collection **and transfer to standard aliquot tube;** Refrigerated **Stability:** Ambient: **After separation from cells: 5 days** Refrigerated: After separation from cells: **2 weeks** Frozen: After separation from cells: **1 year** **Methodology: Electro Chemiluminescence Immunoassay (ECLIA)** **Reference Range:** Male: **0–3 IU/L** Female: **0–5 IU/L** **Days Performed: Sunday**–Saturday **Reported: 2**–3 days	12/28/17
Cadasil DNA test	CADASL	**Special Information: Higher blood volumes ensure adequate DNA quantity, which varies with WBC, specimen condition, and need for confirmatory testing. This test requires physician attestation that patient consent has been received.** **Clinical Information:** Detects sequence variants in the Notch3 gene **in patients with CADASIL (Cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy).** **Days Performed: Varies** **Reported:** 29–**36** days	Effective immediately

Test Changes (Cont.)

Test Name	Order Code	Change	Effective Date
Cadmium Exposure Panel, OSHA	CADEXR	**Special Information:** Both blood and urine must be submitted for testing. **Patient Preparation: To avoid contamination, please collect specimens at the beginning of work shift. Blood and urine should be collected the same day.** Urine collected within 48 hours after administration of a gadolinium (Gd) containing contrast media is unacceptable. **Urine containing blood or fecal materials, and samples transported in non-trace element-free tubes (with the exception of the original device) are unacceptable. This test is New York DOH approved.** **Specimen Requirement: 40 mL** random urine in a clean container; Minimum: **4 mL; Collect urine using spot technique (single void) in an open-top urine collection cup;** Container must be trace metal free; Pour off three aliquots from random specimen; For B-2-Microglobulin pour off 3 mL urine, adjust pH to 6–8 using 1 M HCl or 5% NaOH, label for B-2-Microglobulin testing, and freeze ASAP; Refrigerate other two aliquots; label one 7 mL aliquot for Cadmium **(using trace element-free tube, ARUP supply #43116)** and one 2 mL aliquot for Creatinine testing *AND* 7 mL whole blood in an **EDTA royal blue top tube;** Minimum: 0.5 mL; MULTIPLE SPECIMEN TYPES ARE REQUIRED FOR THIS TEST; (Both urine and blood should be collected on the same day); Refrigerated **Stability:** Ambient: **Blood: Indefinitely; Urine for Beta-2-Microglobulin: 8 hours; Urine for Cadmium: 1 week; Urine for Creatinine: 2 days** Refrigerated: **Blood: Indefinitely; Urine for Beta-2-Microglobulin: 48 hours; Urine for Cadmium: 2 weeks; Urine for Creatinine: 6 days** Frozen: **Blood: Indefinitely; Urine for Beta-2-Microglobulin: 2 months; Urine for Cadmium: 1 year; Urine for Creatinine: 6 months** **Reference Range:** Creatinine Urine per volume: Not established Cadmium Urine per Volume (µg/L) 0–99 Years: **0.0–1.0 µg/L** Cadmium Ur Ratio to CRT 0–99 Years: **0.0–3.2 µg/g crt** Beta-2-Microglobulin, Ur µg/L 0–99 Years: 0–300 µg/L Beta-2-Microglobulin Ratio to CRT 0–99 Years: 0–300 µg/g crt Cadmium, Blood 0–99 Years: 0.0–5.0 µg/L	11/13/17
Cadmium, Urine	URCAD	**Special Information:** Collection volume and interval MUST be indicated. Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, and nonessential over-the-counter medications (upon the advice of their physician). High concentrations of iodine may interfere with elemental testing. Abstinence from iodine-containing medications or contrast agents for at least one month prior to collecting specimens is recommended. ARUP studies indicate that refrigeration of urine alone, during and after collection, preserves specimens adequately, if tested within 14 days of collection. Urine collected within 48 hours after administration of a gadolinium (Gd) containing contrast media (may occur with MRI studies) and acid preserved specimens are unacceptable. **Specimens contaminated with blood or fecal material, and specimens transported in non-trace element-free transport tubes (with the exception of the original device) are unacceptable. This test is New York DOH approved.** **Clinical Information:** Assess cadmium exposure **and useful in determination of cadmium body burden. In chronic exposures, the kidneys are the primary target organ. Symptoms associated with cadmium toxicity vary based upon route of exposure and may include tubular proteinuria, fever, headache, dyspnea, chest pain, conjunctivitis, rhinitis, sore throat and cough. Ingestion of cadmium in high concentration may cause vomiting, diarrhea, salivation, cramps, and abdominal pain.** **Reference Range:** Cadmium, Urine–per volume 0–99 Years: **0.0–1.0 µg/L** Cadmium, Urine–per 24 hour 0–99 Years: **0.0–3.2 µg/d** Cadmium, Urine–ratio to CRT 0–99 Years: **0.0–3.2 µg/g crt** Creatinine (24 hour): Refer to report **Days Performed: Sunday**–Saturday **Reported:** 2–4 days	11/13/17

Test Changes (Cont.)

Test Name	Order Code	Change	Effective Date
Carbamazepine	CARBAM	**Special Information: Do not collect in a gel separator tube.** **Specimen Requirement:** 1 mL plasma from a sodium or lithium heparin green top tube; Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer plasma to a CCL tube and refrigerate;** Refrigerated *OR* 1 mL serum from a **red top tube with no additive;** Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer serum to a CCL tube and refrigerate;** Refrigerated *OR* 1 mL **plasma from an EDTA lavender top tube;** Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer plasma to a CCL tube and refrigerate;** Refrigerated **Stability:** Ambient: **After separation from cells: 2 days** Refrigerated: After separation from cells: **7 days** Frozen: After separation from cells: **4 weeks** **Methodology: Kinetic Interaction of Microparticles in a Solution** **Reference Range: 4.0**–12.0 **µg/mL**	12/28/17
Ceruloplasmin	CERULO	**Specimen Requirement:** 1 mL plasma from a lithium heparin (light green) plasma separator tube (PST); Minimum: 0.5 mL; **If collected in a non-gel separator tube; Centrifuge and transfer plasma to a CCL tube and refrigerate; Refrigerated** *OR* 1 mL serum from a serum separator (gold) tube; Minimum: 0.5 mL; **If collected in a non-gel separator tube; Centrifuge and transfer serum to a CCL tube and refrigerate; Refrigerated** **Stability:** Ambient: After separation from cells: **8 days** Refrigerated: After separation from cells: **2 weeks** Frozen: After separation from cells: **1 year**	12/28/17
Chromium, Urine	UCHRO	**Clinical Information:** Chromium urine levels may be used to monitor short term exposure. **The form of chromium greatly influences distribution. Trivalent chromium resides in the plasma and is usually not of clinical importance. Hexavalent chromium is considered highly toxic. Symptoms associated with chromium toxicity vary based upon route of exposure and dose and may include dermatitis, impairment of pulmonary function, gastroenteritis, hepatic necrosis, bleeding, and acute tubular necrosis. The ACGIH Biological Exposure Index for daily exposure of hexavalent chromium is an increase of 10 µg/gCRT between pre-shift and post-shift urine collections. The ACGIH Biological Exposure Index for long and short-term hexavalent chromium is an end-of-shift concentration of 30 µg/gCRT at the end of the work week.** **Specimen Requirement:** 8 mL 24-hour urine (well-mixed) in a clean container; Minimum: 1 mL; Refrigerate during collection; **Must collect in plastic container; Record total volume and collection time interval;** Submit specimen in two trace element-free transport tubes (ARUP supply #43116); Refrigerated *OR* 8 mL random urine in a clean container; Minimum: 1 mL; **Must collect in plastic container; Record total volume;** Submit specimen in two trace element-free transport tubes (ARUP supply #43116); Refrigerated **Reference Range:** Chromium, urine–**per volume:** 0.0–**0.9 µg/L** Chromium, urine (24hrs): 0.0–**0.9 µg/d** Chromium, Urine ratio to CRT: **0.0–0.9 µg/g crt**	11/13/17

Test Changes (Cont.)

Test Name	Order Code	Change	Effective Date
Chromogranin A	CHROMA	**Special Information:** Plasma is not acceptable. **Grossly hemolyzed samples will be rejected.** **Clinical Limitation: Samples displaying cloudiness, hemolysis, or containing fibrin may give inaccurate results. Chromogranin A is a calcium binding protein, and its circulating levels are affected by the Ca++ concentration.** **Specimen Requirement:** 1 mL serum from a serum separator (gold) tube; Minimum: 0.5 mL; **Refrigerated** *OR* 1 mL serum from a red top tube with no additive; Minimum: 0.5 mL; **Refrigerated** **Stability:** Ambient: **1 day** Refrigerated: **7 days** Frozen: **14 days** **Methodology:** Enzyme-**Linked Immunosorbent Assay (ELISA)** **Reference Range: < 98 ng/mL** **Days Performed:** Monday, **Thursday** **Reported: 7** days	1/10/18
Coccidioides IgG and IgM Antibodies	COCIMG	**Special Information:** Severely lipemic, contaminated or hemolyzed samples are unacceptable. **This test is New York DOH approved.** **Clinical Information: May aid in the diagnosis of coccidioidomycosis (Valley fever).** Negative fungal serology does not rule out the possibility of current infection. **Specimen Requirement:** 2 mL serum from a serum separator (gold) tube; Minimum: **0.15 mL;** Separate serum from cells ASAP **or within 2 hours of collection and transfer serum to standard aliquot tube; Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens; Please mark specimens plainly as 'acute' or 'convalescent;'** Refrigerated **Reference Range:** Coccidioides IgG Antibody Negative: **0.9 IV or less; No significant level of Coccidioides IgG antibody detected** Equivocal: 1.0–1.4 IV; **Questionable presence of Coccidioides IgG antibody detected; Repeat testing in 10-14 days may be helpful** Positive: **1.5 IV or greater; Presence of IgG antibody to Coccidioides detected, suggestive of current or past infection** Coccidioides IgM Antibody Negative: **0.9 IV or less; No significant level of Coccidioides IgM antibody detected** Equivocal: 1.0–1.4 IV; **Questionable presence of Coccidioides IgM antibody detected; Repeat testing in 10-14 days may be helpful** Positive: **1.5 IV or greater; Presence of IgM antibody to Coccidioides detected, suggestive of current or recent infection** **Days Performed: Sunday–Saturday** **Reported:** 2–**4** days	11/13/17
Copper	COPPER	**Note:** ***Only plasma specimens from EDTA navy blue top tubes will be accepted. Serum is not acceptable.*** **Specimen Requirement:** 1 mL plasma from an EDTA navy blue top tube; Minimum: 0.5 mL; Do not allow specimen to come into contact with polystyrene, metal or rubber; Centrifuge and transfer plasma to a polypropylene tube using a plastic transfer pipette; Do not use glass pipettes; Refrigerated	Effective immediately
Copper/Zinc	CUZN	**Note:** ***Only plasma specimens from EDTA navy blue top tubes will be accepted. Serum is not acceptable.*** **Specimen Requirement:** 1 mL plasma from an EDTA navy blue top tube; Minimum: 0.5 mL; Do not allow plasma to remain on red cells; Do not allow specimen to come into contact with polystyrene, glass, metal or rubber; Centrifuge and transfer plasma to a polypropylene tube using a plastic transfer pipette; Refrigerated	Effective immediately

Test Changes (Cont.)

Test Name	Order Code	Change	Effective Date
Cortisol, Saliva	SCORT	**For Interfaced Clients Only: Test build may need to be modified** **Special Information: Patient Preparation: Do not collect specimen within 60 minutes after eating a meal, within 12 hours after consuming alcohol, immediately after brushing teeth or after any activity that may cause gums to bleed. Rinse mouth thoroughly with water 10 minutes before collecting specimen.** Recommended collection time is between 11:00 p.m.–**1:00 a.m. Specimens not collected using the Salivette® collection device, and specimens visibly contaminated with blood, cellular debris, food particles, or mucus are not acceptable. Specimens with pH values > 9.0 or < 3.5 must be recollected. Sodium azide preservative is unacceptable.** This test is New York DOH approved. **Clinical Limitation: Bovine hormones normally present in dairy products can cross-react with anti-cortisol antibodies and cause false results. Acidic or high sugar foods can compromise assay performance by lowering sample pH and influencing bacterial growth.** **Clinical Information: Rule out Cushing syndrome. Screen for thymic and bronchial carcinoid tumors. For a collection at 11 p.m., the normal cortisol concentration is less than 0.112 μg/dL. Patients with Cushing's Syndrome have concentrations of 0.112 μg/dL or greater.** **Specimen Requirement:** Swab of **entire collection** of saliva; **Transfer saturated swab to plain (non-citric acid) cotton Salivette® collection device (ARUP Supply #52056); Swab must be completely saturated to ensure sufficient volume for testing;** Record collection time on container and requisition; **Patient Preparation: Do not collect specimen within 60 minutes after eating a meal, within 12 hours after consuming alcohol, immediately after brushing teeth or after any activity that may cause gums to bleed;** Recommended collection time is between 11:00 p.m.–**1:00 a.m.;** Refrigerated **Stability:** Ambient: 1 week Refrigerated: **3 weeks** Frozen: **6 months** **Methodology: Enzyme Immunoassay (EIA)** **Reference Range: Refer to report** **Days Performed:** Monday, Wednesday, Friday **Reported: 2**–5 days	12/28/17
Cryptococcus Ag Detection	CAD	**Specimen Requirement:** 10 mL serum from a serum separator (gold) tube; Refrigerated *OR* 2 mL cerebrospinal fluid (CSF) in a sterile container; Minimum: 1 mL; **Transport recommendations: Ambient or refrigerated–48 hours, Frozen–indefinitely** **Stability:** Ambient: Serum: 6 hours; CSF: **48** hours Refrigerated: Serum separated from clot: 1 week; Serum not separated from clot: 48 hours; CSF: **48** hours Frozen: Serum: Indefinitely; CSF: Indefinitely	12/21/17
Cytomegalovirus IgG Avidity	CMVAVI	**Special Information: Hemolyzed specimens will be rejected.** **Specimen Requirement:** 0.5 mL serum from a serum separator (gold) tube; Minimum: **0.25 mL; Ambient** *OR* 0.5 mL serum from a red top tube with no additive; Minimum: **0.25 mL; Ambient** **Stability:** Ambient: **7 days** Refrigerated: **14 days** Frozen: **30 days** **Days Performed: Tuesday, Thursday, Friday** **Reported:** 2–**6** days	Effective immediately

Test Changes (Cont.)

Test Name	Order Code	Change	Effective Date
DHEA	DHEA	**Special Information: This test is New York DOH approved.** **Clinical Information: Adjunct test for investigating hyperandrogenic and adrenal disorders. Not recommended for initial evaluation of polycystic ovarian syndrome.** **Specimen Requirement:** 1 mL serum from a serum separator (gold) tube; Minimum: **0.3 mL;** Collect between 6–10 a.m.; Separate serum from cells **ASAP or** within 2 hours of collection; **Transfer serum to standard aliquot tube;** Refrigerated *OR* 1 mL plasma from a sodium or lithium heparin green top tube; Minimum: **0.3 mL;** Collect between 6–10 a.m.; Separate plasma from cells **ASAP or** within 2 hours of collection; **Transfer plasma to standard aliquot tube;** Refrigerated *OR* 1 mL **plasma from an EDTA lavender top tube;** Minimum: **0.3 mL;** Collect between 6–10 a.m.; Separate plasma from cells **ASAP or** within 2 hours of collection; **Transfer plasma to standard aliquot tube;** Refrigerated **Stability:** Ambient: **After separation from cells: 24 hours** Refrigerated: After separation from cells: 1 week Frozen: After separation from cells: **6 months** **Methodology: High Performance** Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) **Reference Range:** Premature: < 40 ng/mL 0–1 Days: < 11 ng/mL 2–6 Days: < 8.7 ng/mL 7–30 Days: < 5.8 ng/mL 1–5 Months: < 2.9 ng/mL Female 6–24 Months: < 1.99 ng/mL 2–3 Years: < 0.85 ng/mL 4–5 Years: < 1.03 ng/mL 6–7 Years: < 1.79 ng/mL 8–9 Years: 0.14–2.35 ng/mL 10–11 Years: 0.43–3.78 ng/mL 12–13 Years: 0.89–6.21 ng/mL 14–15 Years: 1.22–7.01 ng/mL 16–17 Years: 1.42–9.00 ng/mL 18–39 Years: 1.33–7.78 ng/mL 40–99 Years: 0.63–4.70 ng/mL Postmenopausal: 0.63–5.73 ng/mL Tanner Stage I: 0.14–2.76 ng/mL Tanner Stage II: 0.83–4.87 ng/mL Tanner Stage III: 1.08–7.56 ng/mL **Tanner Stage IV–V: 1.24–7.88 ng/mL** Male 6–24 Months: < 2.5 ng/mL 2–3 Years: < 0.63 ng/mL 4–5 Years: < 0.95 ng/mL 6–7 Years: 0.06–1.93 ng/mL 8–9 Years: 0.10–2.08 ng/mL 10–11 Years: 0.32–3.08 ng/mL 12–13 Years: 0.57–4.10 ng/mL 14–15 Years: 0.93–6.04 ng/mL 16–17 Years: 1.17–6.52 ng/mL 18–39 Years: 1.33–7.78 ng/mL 40–99 Years: 0.63–4.70 ng/mL Tanner Stage I: 0.11–2.37 ng/mL Tanner Stage II: 0.37–3.66 ng/mL Tanner Stage III: 0.75-5.24 ng/mL **Tanner Stage IV–V: 1.22–6.73 ng/mL** **Days Performed: Sunday–Saturday** **Reported: 2–5** days	12/28/17

Test Changes (Cont.)

Test Name	Order Code	Change	Effective Date
Digoxin	DIG	**Special Information: Do not collect in a gel separator tube.** **Specimen Requirement:** 1 mL plasma from a lithium heparin green top tube; Minimum: 0.3 mL; **Do not collect in a gel separator tube; Centrifuge and transfer plasma to a CCL tube and freeze; Frozen** *OR* 1 mL plasma from an **EDTA lavender top tube;** Minimum: 0.3 mL; **Do not collect in a gel separator tube; Centrifuge and transfer plasma to a CCL tube and refrigerate; Freeze if storage/transportation time exceeds 24 hours; Refrigerated** *OR* 1 mL serum from a **red top tube with no additive;** Minimum: 0.3 mL; **Do not collect in a gel separator tube; Centrifuge and transfer serum to a CCL tube and refrigerate; Freeze if storage/transportation time exceeds 24 hours; Refrigerated** **Stability:** Ambient: **Unacceptable** Refrigerated: After separation from cells: 24 hours Frozen: After separation from cells: 1–2 weeks **Reference Range:** 0–99 Years: **0.6–1.2 ng/mL** **Methodology: Kinetic Interaction of Microparticles in a Solution**	12/28/17
Duchenne/Becker Muscular Dystrophy (DMD) Deletion/ Duplication with Reflex to Sequencing	DBMDYS	**Clinical Information: Preferred test for confirming carrier status or diagnosis** of Duchenne and Becker Muscular Dystrophy (DMD/BMD).	11/13/17
Echinococcus Ab, IgG	ECHINO	**Special Information: Contaminated or severely lipemic specimens are unacceptable. This test is New York DOH approved.** **Clinical Information: Adjunct to other diagnostic tests (e.g., imaging) for echinococcosis. Patient's travel history is necessary to aid in test interpretation.** Patients with collagen vascular diseases, hepatic cirrhosis, schistosomiasis, and other parasitic infections can produce false-positive results. There is a strong cross-reaction between echinococcosis and cysticercosis-positive sera. Seroconversion between acute and convalescent sera is considered strong evidence of recent infection. The best evidence for infection is a significant change on two appropriately timed specimens where both tests are done in the same laboratory at the same time. **Specimen Requirement:** 1 mL serum from a serum separator (gold) tube; Minimum: **0.15 mL;** Separate serum from cells ASAP or within 2 hours of collection **and transfer serum to standard aliquot tube; Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of acute specimens; Mark specimens plainly as 'acute' or 'convalescent;'** Refrigerated **Reference Range:** Negative: **0.000-0.890 IV- No significant level of Echinococcus IgG antibody detected** Equivocal (repeat in 10-14 days may be helpful): **0.900-1.109 IV–Questionable presence of Echinococcus IgG antibody detected** Positive (current or past infection): **1.210 IV or greater–Presence of IgG antibody to Echinococcus detected**	Effective immediately
Enterovirus by PCR, Nasopharyngeal Swab	ENTNAS	**Special Information: Specimen source required. This test is New York DOH approved.** **Methodology: Qualitative** Polymerase Chain Reaction	11/13/17
Erb-b2		**CPT: 88360 x 1**	1/10/18
Ethanol	ALCO	**Special Information: Do not use alcohol or other volatile disinfectants at the site of venipuncture. Aqueous Zephiran (benzalkonium chloride), aqueous Merthiolate (thimerosal), or povidone-iodine may be used.** **Specimen Requirement:** 1 mL plasma from a lithium heparin green top tube; Minimum: 0.5 mL; **Do not collect in a gel separator tube; Prepare venipuncture site with aqueous Zephiran (benzalkonium chloride), aqueous Merthiolate (thimerosal), or povidone-iodine; Samples must be tightly closed;** Refrigerated *(continued on page 15)*	12/28/17

Test Changes (Cont.)

Test Name	Order Code	Change	Effective Date
Ethanol *(continued from page 14)*		*OR* 1 mL plasma from an EDTA lavender top tube; Minimum: 0.5 mL; **Do not collect in a gel separator tube; Prepare venipuncture site with aqueous Zephiran (benzalkonium chloride), aqueous Merthiolate (thimerosal), or povidone-iodine; Samples must be tightly closed;** Refrigerated *OR* 1 mL serum from a **red top tube with no additive;** Minimum: 0.5 mL; **Do not collect in a gel separator tube; Prepare venipuncture site with aqueous Zephiran (benzalkonium chloride), aqueous Merthiolate (thimerosal), or povidone-iodine; Samples must be tightly closed;** Refrigerated *OR* 1 mL plasma from a potassium oxalate/sodium fluoride (gray) tube; Minimum: 0.5 mL; **Do not collect in a gel separator tube; Prepare venipuncture site with aqueous Zephiran (benzalkonium chloride), aqueous Merthiolate (thimerosal), or povidone-iodine; Samples must be tightly closed; Stability: Ambient: 2 weeks, Refrigerated: 3 months, Frozen: 6 months;** Refrigerated **Stability:** Ambient: **After separation from cells: 2 days** Refrigerated: **After separation from cells: 2 weeks** Frozen: **After separation from cells: 4 weeks** **Methodology: Enzymatic**	
Fatty Acids, Free (Non-Esterified)	FFA	**Special Information: Critical Frozen. Serum must be separated from cells and frozen immediately, otherwise lipase continues to break down triglycerides, giving rise to elevated levels of nonesterified (free) fatty acids. Overnight fasting preferred. Specimens collected in EDTA,** heparin, **sodium fluoride/potassium oxalate, sodium citrate, or ammonium oxalate are unacceptable. Non-frozen specimens are not acceptable. This test is New York DOH approved.** **Specimen Requirement: 1 mL** serum from a serum separator (gold) tube; Minimum: **0.2 mL; Place specimen on ice after draw; Overnight fasting specimen is preferred; Allow serum specimen to clot completely on ice;** Separate serum from cells, **aliquot into standard transport tube** and freeze **immediately; Separate specimens must be submitted when multiple tests are ordered; Critical Frozen** **Stability:** Ambient: **After separation from cells: Unacceptable** Refrigerated: **After separation from cells: 4 hours** Frozen: **After separation from cells: 1 month** **Methodology: Spectrophotometry** **Reference Range:** **0–5 Months: ≤ 0.73 mmol/L** **6 Months–1 Year: ≤ 0.99 mmol/L** **2–17 Years: ≤ 1.78 mmol/L** **18 Years or older: ≤ 0.78 mmol/L** **Days Performed: Monday,** Wednesday, **Friday** **Reported:** 2–**5** days	12/28/17
FibroSpect II	FS2	**Clinical Information: Useful for detecting, staging and monitoring liver fibrosis in hepatitis C (HCV) patients. The test is a non-invasive, serum diagnostic that provides a quantitative fibrosis score to help physicians risk stratify and monitor patients based on three clinically relevant biomarkers.** **Specimen Requirement:** 2 mL serum from a serum separator (gold) tube; Minimum: **0.5 mL;** Refrigerated *OR* 2 mL serum from a red top tube with no additive; Minimum: **0.5 mL;** Refrigerated **Methodology:** **Chemiluminescence (CL)** Enzyme-Linked Immunosorbent Assay (ELISA) Nephelometry (NEPH) **Days Performed: Twice per week** **Reported:** 6–**9** days	Effective immediately

Test Changes (Cont.)

Test Name	Order Code	Change	Effective Date
FLT3 Mutation Detection by PCR	FLT3MD	**Special Information:** Must indicate specimen type. **Separate specimens must be submitted when multiple tests are ordered.** Unacceptable conditions: Grossly hemolyzed or clotted specimens. This test is New York DOH approved. **Clinical Information: Aid in the assessment of acute myeloid leukemia patients for whom midostaurin (RYDAPT) treatment is being considered.** **Specimen Requirement:** 5 mL whole blood in a **sodium or lithium heparin green top tube;** Minimum: 5 mL; Separate specimens must be submitted when multiple tests are ordered; **Specimen type required;** Refrigerated *OR* 3 mL bone marrow in a sodium or lithium heparin green top tube; Minimum: 3 mL; Separate specimens must be submitted when multiple tests are ordered; **Specimen type required;** Refrigerated **Stability:** Ambient: 72 hours Refrigerated: 1 week Frozen: Unacceptable **Days Performed:** Varies **Reported: 4–6** days	11/13/17
Fungal Antibodies by CF, CSF	FABCSF	**Special Information: Unacceptable Conditions: Other body fluids. Contaminated, hemolyzed, xanthochromic, or severely lipemic specimens. This test is New York DOH approved.** **Specimen Requirement:** 1 mL cerebrospinal fluid (CSF) in a **clean container;** Minimum: **0.35 mL;** Unacceptable Conditions: **Other body fluids, contaminated,** hemolyzed, **xanthochromic, or severely lipemic specimens; Transfer 1 mL CSF to standard aliquot tube;** Refrigerated **Days Performed:** Sunday–**Saturday** **Reported:** 3–5 days	11/13/17
Fungitell Assay for (1,3)-B-D-Glucan	BDGLUC	**Special Information:** Hemolyzed, icteric, or lipemic specimens are unacceptable. **This test is New York DOH approved.** **Clinical Information: The Fungitell test aids in the diagnosis of invasive/ disseminated fungal infections (e.g., P. jirovecii, Aspergillus, or Candida)** and should be used in conjunction with other diagnostic procedures. This test does not detect certain fungal species such as Cryptococcus, which produce very low levels of (1,3)-beta-D-glucan. This test will not detect the zygomycetes, such as Absidia, Mucor, and Rhizopus, which are not known to produce (1,3)-beta-D-glucan. **In addition, the yeast phase of Blastomyces dermatitidis produces little (1,3)-beta-D-glucan and may not be detected by the assay. Reference ranges for pediatric patients under the age of 18 have not been established. Assay ranges were validated in adult subjects.** **Specimen Requirement:** 2 mL serum from a serum separator (gold) tube; Minimum: **0.5 mL;** Separate serum from cells within 2 hours of collection; **Transfer 2 mL serum to sterile aliquot tube; Refrigerated** *OR* 2 mL serum from a **red top tube with no additive;** Minimum: **0.5 mL;** Separate serum from cells within 2 hours of collection; **Transfer 2 mL serum to sterile aliquot tube; Refrigerated** **Stability:** Ambient: Unacceptable Refrigerated: **2 weeks** Frozen: **2 weeks** **Methodology: Colorimetry** **Days Performed:** Monday–**Friday** **Reported:** 4–**5** days	12/28/17
Fungus CSF Culture/ CAD	FUNCSF	**Stability:** Ambient: **< 6 hours is optimal; Lab will reject if > 48 hours** Refrigerated: 12 hours Frozen: Unacceptable	12/21/17

Test Changes (Cont.)

Test Name	Order Code	Change	Effective Date
Fungus Screen	FUNGSC	**Specimen Requirement: 3 mL** random urine in a **BD Vacutainer C&S Preservative tube (gray); Preferred collection is 3 mL urine in a BD gray top preservative tube; Alternatively,** collect 50 mL of first morning void in sterile container; Patient prep: Usual preparation for clean catch mid-void urine; **Refrigerated transport is preferred with stability of 48 hours if preserved, 24 hours nonpreserved; Ambient temperature can be used although stability is decreased (2 hours if unpreserved, 48 hours if preserved); Refrigerated** *OR* One swab in **Amies or Stuart's media without charcoal; Transport at ambient or refrigerated temperature for up to 72 hours; Refrigerated** **Stability:** Ambient: Urine **unpreserved:** 2 hours; **Urine preserved: 48 hours; Upper Respiratory swabs: 72 hours; Genital (vaginal, cervical) swabs: 72 hours; Catheter tips: 24 hours** Refrigerated: **72** hours Frozen: Unacceptable	12/21/17
G-6-PD Quantitative	G6PDQT	**Days Performed:** Monday–Friday, excluding major holidays **Reported:** 2–**4** days	11/1/17
Gentamicin, Post Dose	GENTPO	**Special Information: Do not collect in a gel separator tube.** **Clinical Information: Draw 30 minutes after completion of infusion.** **Specimen Requirement:** 1 mL plasma from a sodium or lithium heparin green top tube; Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer plasma to a CCL tube and refrigerate;** Refrigerated *OR* 1 mL serum from a **red top tube with no additive;** Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer serum to a CCL tube and refrigerate;** Refrigerated *OR* 1 mL plasma from an **EDTA lavender top tube;** Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer plasma to a CCL tube and refrigerate;** Refrigerated **Stability:** Ambient: Immediately Refrigerated: After separation from cells: 1 week Frozen: After separation from cells: **2** weeks **Methodology: Kinetic Interaction of Microparticles in a Solution**	12/28/17
Gentamicin, Pre Dose	GENTPR	**Special Information: Do not collect in a gel separator tube.** **Clinical Information: Draw just prior to next infusion.** **Specimen Requirement:** 1 mL plasma from a sodium or lithium heparin green top tube; Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer plasma to a CCL tube and refrigerate;** Refrigerated *OR* 1 mL serum from a **red top tube with no additive;** Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer serum to a CCL tube and refrigerate;** Refrigerated *OR* 1 mL plasma from an **EDTA lavender top tube;** Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer plasma to a CCL tube and refrigerate;** Refrigerated **Stability:** Ambient: Immediately Refrigerated: After separation from cells: 1 week Frozen: After separation from cells: **2** weeks **Methodology: Kinetic Interaction of Microparticles in a Solution**	12/28/17

Test Changes (Cont.)

Test Name	Order Code	Change	Effective Date
Gentamicin, Random	GENTRA	**Special Information: Do not collect in a gel separator tube.** **Specimen Requirement:** 1 mL plasma from a sodium or lithium heparin green top tube; Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer plasma to a CCL tube and refrigerate;** Refrigerated *OR* 1 mL serum from a **red top tube with no additive;** Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer serum to a CCL tube and refrigerate;** Refrigerated *OR* 1 mL plasma from an **EDTA lavender top tube;** Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer plasma to a CCL tube and refrigerate;** Refrigerated **Stability:** Ambient: Immediately Refrigerated: After separation from cells: 1 week Frozen: After separation from cells: **2** weeks **Methodology: Kinetic Interaction of Microparticles in a Solution**	12/28/17
Heavy Metals, Urine	UTXM3	**Special Information:** Specimens with a total arsenic concentration between 35–2000 µg/L will be fractionated at an additional cost to determine the proportion of organic, inorganic, and methylated forms of arsenic present. PATIENT PREP: Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, non-essential over-the-counter medications (upon the advice of their physician), and avoid shellfish and seafood for 48–72 hours. High concentrations of iodine may interfere with elemental testing. Abstinence from iodine-containing medications or contrast agents for at least one month prior to collecting specimens for elemental testing is recommended. Urine specimens collected within 48 hours after administration of gadolinium (Gd) containing contrast media are not acceptable. **Acid preserved urine, specimens contaminated with blood or fecal material, and specimens transported in non-trace element-free transport tubes (with the exception of the original device) are unacceptable. ARUP studies indicate that refrigeration of urine alone, during and after collection, preserves specimens adequately if tested within 14 days of collection. This test is New York DOH approved.** **Clinical Information: Useful in the assessment of acute and chronic exposure to arsenic, mercury and lead. Quantification of urine excretion rates before or after chelation therapy has been used as an indicator of lead exposure. Urinary excretion of > 125 mg of lead per 24 hours is usually associated with related evidence of lead toxicity. Urinary mercury levels predominantly reflect acute or chronic elemental or inorganic mercury exposure. Urine concentrations in unexposed individuals are typically less than 10 µg/L. 24-hour urine concentrations of 30 to 100 µg/L may be associated with subclinical neuropsychiatric symptoms and tremor while concentrations greater than 100 µg/L can be associated with overt neuropsychiatric disturbances and tremors. Urine mercury levels may be useful in monitoring chelation therapy.** The ACGIH Biological Exposure Index (BEI) for arsenic in urine is 35 µg/L. The ACGIH BEI is based on the sum of inorganic and methylated species. For specimens with a total arsenic concentration between 35–2000 µg/L, fractionation is automatically performed to determine the proportions of inorganic, methylated and organic species. It may be appropriate to request fractionation for specimens with a **total arsenic** greater than 30 µg/gCRT despite a total arsenic concentration less than 35 µg/L. If low-level chronic poisoning is suspected, the µg/gCRT ratio may be a more sensitive indicator of arsenic exposure than the total arsenic concentration. **Reference Range:** Creatinine Urine per volume: Not established Creatinine, per 24 hour Female 3–8 Years: 140–700 mg/d 9–12 Years: 300–1300 mg/d 13–17 Years: 400–1600 mg/d 18–50 Years: 700–1600 mg/d 51–80 Years: 500–1400 mg/d 81–99 Years: 400–1300 mg/d *(continued on page 19)*	11/13/17

Test Changes (Cont.)

Test Name	Order Code	Change	Effective Date
Heavy Metals, Urine *(continued from page 18)*		Male 3–8 Years: 140–700 mg/d 9–12 Years: 300–1300 mg/d 13–17 Years: 500–2300 mg/d 18–50 Years: 1000–2500 mg/d 51–80 Years: 800–2100 mg/d 81–99 Years: 600–2000 mg/d Arsenic–**per volume** (µg/L) 0–99 Years: **0.0–34.9 µg/L (Based on Biological Exposure Index)** Arsenic–**per24h** (µg/day) 0–99 Years: **0.0–49.9 µg/d** Arsenic–**ratio to CRT** (µg/g CRT) 0–99 Years: **0.0–29.9 µg/g crt** Mercury, Urine per volume: **0.0–1.9 µg/L** Mercury, Urine per 24 hours: **0.0–2.9 µg/d** Mercury, Urine ratio to creatinine (0–99 Years): **0.0–20.0 µg/g crt** Lead, **ratio to creatinine** (µg/g CRT): **0.0–1.4 µg/g crt** Lead, **per 24h** (µg/day): **0.0–8.1 µg/d** Lead, **per volume (µg/L): 0.0–1.4 µg/L** Arsenic Fractionated, Organic: Refer to report Arsenic Fractionated, Total Inorganic: Refer to report Arsenic Fractionated, Methylated: Refer to report **Days Performed: Sunday**–Saturday **Reported:** 2–5 days	
Heavy Metals with Cadmium, Ur	UTXM4	**Special Information:** Specimens with a total arsenic concentration between 35–2000 µg/L, will be fractionated at an additional cost to determine the proportion of organic, inorganic, and methylated forms of arsenic present. PATIENT PREP: Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, non-essential over-the-counter medications (upon the advice of their physician), and avoid shellfish and seafood for 48–72 hours. High concentrations of iodine may interfere with elemental testing. Abstinence from iodine-containing medications or contrast agents for at least one month prior to collecting specimens for elemental testing is recommended. Urine specimens collected within 48 hours after administration of gadolinium (Gd) containing contrast media are not acceptable. **Acid preserved urine, specimens contaminated with blood or fecal material, and specimens transported in non-trace element-free transport tubes (with the exception of the original device) are unacceptable. ARUP studies indicate that refrigeration of urine alone, during and after collection, preserves specimens adequately if tested within 14 days of collection. This test is New York DOH approved.** **Clinical Information: Useful in the assessment of acute and chronic exposure to arsenic, cadmium, mercury, and lead. Urine cadmium levels can be used to assess cadmium body burden. In chronic exposures, the kidneys are the primary target organ. Symptoms associated with cadmium toxicity vary based upon route of exposure and may include tubular proteinuria, fever, headache, dyspnea, chest pain, conjunctivitis, rhinitis, sore throat and cough. Ingestion of cadmium in high concentration may cause vomiting, diarrhea, salivation, cramps, and abdominal pain.** **Quantification of urine excretion rates before or after chelation therapy has been used as an indicator of lead exposure. Urinary excretion of > 125 mg of lead per 24 hours is usually associated with related evidence of lead toxicity. Urinary mercury levels predominantly reflect acute or chronic elemental or inorganic mercury exposure. Urine concentrations in unexposed individuals are typically less than 10 µg/L. 24-hour urine concentrations of 30 to 100 µg/L may be associated with subclinical neuropsychiatric symptoms and tremor while concentrations greater than 100 µg/L can be associated with overt neuropsychiatric disturbances and tremors. Urine mercury levels may be useful in monitoring chelation therapy.** The ACGIH Biological Exposure Index (BEI) for arsenic in urine is 35 µg/L. The ACGIH BEI is based on the sum of inorganic and methylated species. For specimens with a total arsenic concentration between 35–2000 µg/L, fractionation is automatically performed to determine the proportions of inorganic, methylated and organic species. It may be appropriate to request fractionation for specimens with a **total arsenic** greater than 30 µg/gCRT despite a total arsenic concentration less than 35 µg/L. If low-level chronic poisoning is suspected, the µg/gCRT ratio may be a more sensitive indicator of arsenic exposure than the total arsenic concentration. *(continued on page 20)*	11/13/17

Test Changes (Cont.)

Test Name	Order Code	Change	Effective Date
Heavy Metals with Cadmium, Ur *(continued from page 19)*		**Reference Range:** Creatinine Urine per volume: Not established Creatinine, per 24 hour Female 3–8 Years: 140–700 mg/d 9–12 Years: 300–1300 mg/d 13–17 Years: 400–1600 mg/d 18–50 Years: 700–1600 mg/d 51–80 Years: 500–1400 mg/d 81–99 Years: 400–1300 mg/d Male 3–8 Years: 140–700 mg/d 9–12 Years: 300–1300 mg/d 13–17 Years: 500–2300 mg/d 18–50 Years: 1000–2500 mg/d 51–80 Years: 800–2100 mg/d 81–99 Years: 600–2000 mg/d Arsenic–**per volume** (µg/L) 0–99 Years: **0.0–34.9 µg/L (Based on Biological Exposure Index)** Arsenic–**per24h** (µg/day) 0–99 Years: **0.0–49.9 µg/d** Arsenic–**ratio to CRT** (µg/g CRT) 0–99 Years: **0.0–29.9 µg/g crt** Cadmium Urine per Volume (µg/L) 0–99 Years: 0.0–**1.0 µg/L** Cadmium, Urine–per 24 hour 0–99 Years: **0.0–3.2 µg/d** Cadmium, Urine–ratio to CRT 0–99 Years: **0.0–3.2 µg/g crt** Mercury, Urine per volume: **0.0–1.9 µg/L** Mercury, Urine per 24 hours: **0.0–2.9 µg/d** Mercury, Urine ratio to creatinine (0–99 Years): **0.0–20.0 µg/g crt** Lead, **ratio to creatinine (µg/g CRT): 0.0–1.4 µg/g crt** Lead, **per 24h** (µg/day): **0.0–8.1 µg/d** Lead, **per volume (µg/L): 0.0–1.4 µg/L** Arsenic Fractionated, Organic: Refer to report Arsenic Fractionated, Total Inorganic: Refer to report Arsenic Fractionated, Methylated: Refer to report **Days Performed: Sunday**–Saturday **Reported:** 2–5 days	
Hemiplegic Migraine Evaluation	HEMMIG	**Special Information:** Higher blood volumes ensure adequate DNA quantity, which varies with WBC, specimen condition, and need for confirmatory testing. Patients 0–3 years of age have higher WBC, yielding more DNA per mL of blood. **This test requires physician attestation that patient consent has been received.** **Clinical Information: Detects sequence variants in the CACNA1A, ATP1A2 and SCN1A genes in patients with migraine, migraine with aura, reversible hemiparesis, atypical migraine, and family history of migraine, seizures.** **Specimen Requirement:** 8 mL whole blood in an EDTA lavender top tube; Minimum: 6 mL, **For pediatric patients 0–3 years of age, 2 mL is preferred volume and 1 mL is minimum volume; Collect 2 EDTA lavender top tubes to ensure adequate specimen volume;** Send to Cleveland Clinic Laboratories ASAP after collection to optimize DNA quality and quantity; Ambient **Days Performed: Varies** **Reported:** 29–**36** days **CPT:** 81406 x 1, 81407 **x 2**	Effective immediately

Test Changes (Cont.)

Test Name	Order Code	Change	Effective Date
Hepatitis Be Antibody	AHBE	**Special Information: Specimens containing particulate material or collected in citrate-based anticoagulant are not acceptable. Heat-inactivated,** grossly hemolyzed or lipemic specimens are unacceptable. This test is New York DOH approved. **Clinical Information: Useful for monitoring HBV therapy. Order along with HBV DNA, HBV surface antigen, HBV surface antibody and HBe antigen.** **Specimen Requirement:** 1 mL serum from a serum separator (gold) tube; Minimum: 0.5 mL; **Separate serum from cells ASAP or within 2 hours of collection;** Transfer serum to standard aliquot tube; **Refrigerated** *OR* 1 mL **plasma from an EDTA lavender top tube;** Minimum: 0.5 mL; **Separate plasma from cells ASAP or within 2 hours of collection;** Transfer plasma to standard aliquot tube; **Refrigerated** **Stability:** Ambient: **After separation from cells: Unacceptable** Refrigerated: **After separation from cells: 6** days Frozen: **After separation from cells: Indefinitely (Avoid repeated freeze/thaw cycles)** **Methodology: Enzyme Immunoassay (EIA)** **Days Performed: Sunday**–Saturday **Reported:** 2–3 days	12/28/17
Hepatitis B Virus Genotyping	HBVGEN	**Special Information:** Please submit most recent viral load and test date, if available. This test may be unsuccessful if the HBV viral load is less than log 3.0 or 1,000 IU/mL of plasma. **Heparinized specimens are unacceptable. This test is New York DOH approved.** **Clinical Information: Determine antiviral drug resistance by DNA sequencing.** Both the HBV RT polymerase and the HBsAg encoding regions are sequenced. Resistance and surface antigen mutations are reported. In addition, the major HBV genotypes are identified. Mutations in viral sub-populations below 20% of total may not be detected. **Specimen Requirement:** 2 mL serum from a serum separator (gold) tube; Minimum: 0.5 mL; **Separate serum from cells within 24 hours; Transfer 2 mL serum to standard aliquot tube;** Frozen *OR* 2 mL plasma from an EDTA lavender top tube; Minimum: 0.5 mL; **Separate plasma from cells within 24 hours; Transfer 2 mL plasma to standard aliquot tube;** Frozen *OR* 2 mL plasma from an **EDTA white plasma preparation tube (PPT);** Minimum: 0.5 mL; **Separate plasma from cells within 24 hours; Transfer 2 mL plasma to standard aliquot tube;** Frozen **Days Performed:** Tuesday, **Friday** **Reported:** 11–**12** days	11/13/17
Herpes Simplex Virus by PCR, CSF	HSPCRC	**Stability:** Ambient: CSF: Unacceptable Refrigerated: CSF: **Up to 7 days** Frozen: CSF: 1 month **Days Performed: 7** days per week **Reported: 1**–3 days	1/16/18
Human Metapneumovirus by PCR	MPVPCR	**Test Name:** Previously Human Metapneumovirus by RT-PCR **Special Information: Specimen source required. This test is New York DOH approved.** **Clinical Information: Order to detect human metapneumovirus (hMPV) in children and immunocompromised adults if suspicion remains in spite of negative hMPV DFA test.** **Specimen Requirement:** 1 mL bronchoalveolar lavage (BAL) specimen in a sterile container; Minimum: **0.5 mL; Specimen source required;** Frozen *(continued on page 22)*	11/13/17

Test Changes (Cont.)

Test Name	Order Code	Change	Effective Date
Human Metapneumovirus by PCR *(continued from page 21)*		*OR* 1 mL sputum in a sterile container; Minimum: **0.5 mL; Specimen source required;** Frozen *OR* 1 mL pleural fluid in a sterile container; Minimum: **0.5 mL; Specimen source required;** Frozen *OR* 1 mL nasopharyngeal washings in a sterile container; Minimum: **0.5 mL; Specimen source required;** Frozen *OR* Nasopharyngeal swab in M4 media; Minimum: **0.5 mL; Specimen source required;** Frozen *OR* Throat swab in M4 media; Minimum: **0.5 mL; Specimen source required;** Frozen	
Hydroxylase-21 Antibody	21OHAB	**Special Information: Hemolyzed specimens are unacceptable. This test is New York DOH approved.** **Clinical Information: Useful as a secondary test to diagnose autoimmune disease after adrenal insufficiency is confirmed. A value greater than 1.0 Kronus Units/mL is considered positive for 21-OH Antibody. Kronus units are arbitrary. Kronus Units = U/mL. The 21-Hydroxylase Antibody assay is intended for the semi-quantitative determination of antibodies to steroid 21-hydroxylase in human serum. The presence of antibodies to 21-hydroxylase** (greater than 1.0 U/mL) is indicative of **primary adrenal insufficiency** (Addison disease). **Results should be interpreted in the context of clinical symptoms, including functional adrenal testing.** **Specimen Requirement:** 1 mL serum from a red top tube with no additive; Minimum: 0.2 mL; **Transfer 1 mL serum to standard aliquot tube;** Refrigerated **Stability:** Ambient: **After separation from cells:** Unacceptable Refrigerated: After separation from cells: 1 week Frozen: After separation from cells: 6 months **Methodology: Semi-Quantitative** Radioimmunoassay **Reference Range:** 0–99 Years: **0.0–1.0 U/mL**	11/13/17
Infliximab Activity and Neutralizing Antibody	IFXNEU	**Special Information:** This test measures the capacity of infliximab to neutralize TNF-activity. Additionally, infliximab neutralizing antibodies (Nab) are titered (reporting the highest dilution of patient sera in which Nab activity is detected). **Contaminated, hemolyzed, icteric, or lipemic specimens are unacceptable. This test is New York DOH approved.** **Clinical Information:** This test is used to evaluate secondary response failures to infliximab therapy. Secondary response failure is defined as loss of clinical response **after initial improvement of clinical signs and symptoms. Therapeutic decision should rest on both the clinical response** and the knowledge of the fate of the drug including emergence of immunogenicity in individual patients. Circulating infliximab levels have been shown to vary considerably between patients. These differences relate to route and frequency of administration and patient-related features such as age, gender, weight, drug metabolism and concomitant medications such as methotrexate and other immunosuppressants. **Specimen Requirement:** 1 mL serum from a serum separator (gold) tube; Minimum: **0.5 mL; Collect specimens before infliximab treatment;** Separate serum from cells ASAP or within 2 hours of collection; **Transfer 1 mL serum to standard aliquot tube;** Refrigerated **Methodology:** **Cell** Culture Quantitative Chemiluminescent Immunoassay Semi-Quantitative Chemiluminescent Immunoassay	11/13/17
Lactose Tolerance Test	LACTT	**Specimen Requirement:** 1 mL plasma from a potassium oxalate/sodium fluoride (gray) tube; Minimum: 0.3 mL; **Aliquot into CCL aliquot tube; Centrifuge and refrigerate** **Stability:** Ambient: **24 hours** Refrigerated: **After removed from cells: 72 hours** Frozen: **Unacceptable** **Reference Range:** Glucose Baseline 0–99 Years: **74–99 mg/dL**	Effective immediately

Test Changes (Cont.)

Test Name	Order Code	Change	Effective Date
Lead, Urine 24 Hour	ULEADQ	**Special Information:** Indicate total volume **and collection time interval (if applicable) on tube and** requisition. Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, nonessential over-the-counter medications (upon the advice of their physician). High concentrations of iodine may interfere with elemental testing. Abstinence from iodine-containing medications or contrast agents for at least one month prior to collecting specimens is recommended. ARUP studies indicate that refrigeration of urine alone, during and after collection, preserves specimens adequately, if tested within 14 days of collection. Urine collected within 48 hours after administration of a gadolinium (Gd) containing contrast media (may occur with MRI studies) and acid preserved samples are unacceptable. **Specimens contaminated with blood or fecal material, and specimens transported in non-trace element-free transport tubes (with the exception of the original device) are unacceptable. This test is New York DOH approved.** **Clinical Information: Quantification of urine excretion rates before or after chelation therapy has been used as an indicator of lead exposure. Urinary excretion of > 125 mg of lead per 24 hours is usually associated with related evidence of** lead toxicity. **Specimen Requirement:** 8 mL 24-hour urine (well-mixed) in a clean container; Minimum: 1 mL; Refrigerate during collection; Collect in plastic container, then aliquot into a trace metal transport tube (ARUP #43116); **Submit Heavy Metals Form with specimen;** Refrigerated *OR* 8 mL random urine in a clean container; Minimum: 1 mL; Refrigerate during collection; Collect in plastic container, then aliquot into a trace metal transport tube (ARUP #43116); **Submit Heavy Metals Form with specimen;** Refrigerated **Reference Range:** Lead, **per volume (µg/L): 0.0–1.4 µg/L** Lead, **per 24h** (µg/day): **0.0–8.1 µg/d** Lead, **ratio to creatinine** (µg/g CRT): **0.0–1.4 µg/g crt** Creatinine, 24–Hour Urine Male 3–8 Years: 140–700 mg/d 9–12 Years: 300–1300 mg/d 13–17 Years: 500–2300 mg/d 18–50 Years: 1000–2500 mg/d 51–80 Years: 800–2100 mg/d 81–99 Years: 600–2000 mg/d Female 3–8 Years: 140–700 mg/d 9–12 Years: 300–1300 mg/d 13–17 Years: 400–1600 mg/d 18–50 Years: 700–1600 mg/d 51–80 Years: 500–1400 mg/d 81–99 Years: 400–1300 mg/d	11/13/17
Lithium	LI	**Specimen Requirement:** 1 mL **plasma from a sodium heparin green top tube;** Minimum: **0.5 mL; If collected in a non-gel separator tube; Centrifuge and transfer plasma to a CCL tube and refrigerate;** Refrigerated *OR* 1 mL serum from a serum separator (gold) tube; Minimum: **0.5 mL; Centrifuge and transfer serum to a CCL tube and refrigerate;** Refrigerated *OR* 1 mL plasma from an **EDTA lavender top tube;** Minimum: **0.5 mL; If collected in a non-gel separator tube; Centrifuge and transfer plasma to a CCL tube and refrigerate;** Refrigerated **Stability:** Ambient: **After separation from cells:** 1 day Refrigerated: After separation from cells: 7 days Frozen: **After separation from cells: 6 months** **Methodology: Colorimetry** **Reference Range: 0.6-1.2 mmol/L**	12/28/17

Test Changes (Cont.)

Test Name	Order Code	Change	Effective Date
Liver Kidney Microsome IgG Autoabs	LKM	**Special Information: Severely hemolyzed or lipemic specimens are unacceptable. This test is New York DOH approved.** **Clinical Information: Differential evaluation of autoimmune liver disease of unknown etiology, especially autoimmune hepatitis (AIH) of childhood onset. Liver-Kidney Microsome IgG antibody (anti-LKM), as detected by indirect immunofluorescent antibody (IFA) techniques, may be observed in patients with autoimmune hepatitis type 2 (AIH-2), AIH-2 associated with autoimmune polyendocrinopathy-candidiasis-ectodermal dystrophy (APECED), viral hepatitis C or D, and some forms of drug-induced hepatitis. This IFA does not differentiate among the four types of LKM antibodies (LKM-1, LKM-2, LKM-3, and a fourth type that recognizes CYP1A2 and CYP2A6 antigens). Of these, anti-LKM-1 (cytochrome P450IID6) IgG antibodies are considered specific for AIH-2.** **Specimen Requirement: 1 mL** serum from a serum separator (gold) tube; Minimum: **0.15 mL; Transfer 1 mL serum to standard aliquot tube;** Refrigerated **Stability:** Ambient: **After separation from cells: 48 hours** Refrigerated: **After separation from cells: 2 weeks** Frozen: **After separation from cells: 1 year (Avoid repeated freeze/thaw cycles)** **Methodology: Semi-Quantitative Indirect Fluorescent Antibody** **Reference Range:** **Normal:** < 1:20 **Days Performed:** Monday–Saturday **Reported: 2**–4 days	12/28/17
LTT Mitogen Screen	LTTMS	**Special Information:** Specimens should be sent only Monday through Thursday by 4:00 p.m. EST. **Specimen must remain at ambient temperature. Do not refrigerate. Do not freeze.** Specimens may be cancelled if they arrive in lab greater than 24 hours post collection. Please call the lab to set up order. If shipping specimen, make sure it is in an ambient mailer and marked as 'critical specimen.' **Specimen Requirement:** 20 mL whole blood in a sodium heparin green top tube; Minimum: 10 mL; Collect Monday–Thursday only; Deliver the specimen to Cleveland Clinic Laboratories within 24 hours post collection; **Do not aliquot; Specimen must remain at ambient temperature; Do not refrigerate; Do not freeze;** Ambient	12/27/17
Lymphocyte Transformation Test	LTT	**Special Information:** Specimens should be sent only Monday through Thursday by 4:00 p.m. EST. **Specimen must remain at ambient temperature. Do not refrigerate. Do not freeze.** Specimens may be cancelled if they arrive in lab greater than 24 hours post collection. Please call the lab to set up order. If shipping specimen, make sure it is in an ambient mailer and marked as 'critical specimen.' **Specimen Requirement:** 20 mL whole blood in a sodium heparin green top tube; Collect Monday–Thursday only; Deliver the specimen to Cleveland Clinic Laboratories within 24 hours post collection; **Do not aliquot; Specimen must remain at ambient temperature; Do not refrigerate; Do not freeze;** Ambient	12/27/17
Magnesium RBC	MAGRBC	**Special Information: Frozen, clotted or grossly hemolyzed specimens are unacceptable.** This test is New York DOH approved. **Clinical Information: May be useful in the assessment of tissue stores. RBC magnesium results reflect the intracellular stores and general homeostasis of magnesium. Results may be falsely low if RBCs in the submitted specimen are lysed or not promptly separated from plasma. To convert to mg/dL, multiply mmol/L by 2.43.** **Specimen Requirement: 2 mL red blood cells from an EDTA royal blue top tube;** Minimum: **0.6 mL** red blood cells; **Centrifuge whole blood and separate RBCs from plasma within 2 hours of collection; Transfer 2 mL RBCs to an ARUP trace element-free transport tube (ARUP supply #43116); Ambient** **Stability:** Ambient: **After separation from plasma:** 1 week Refrigerated: **After separation from plasma: 2 weeks** Frozen: **After separation from plasma:** Unacceptable **Reference Range: 1.5–3.1 mmol/L** **Days Performed: Monday, Wednesday**–Saturday **Reported: 2–4** days	12/28/17

Test Changes (Cont.)

Test Name	Order Code	Change	Effective Date
Meconium Drug Screen 9	MECDS9	**Special Information:** If the specimen screens positive, then Confirmation/ Quantitation by **LC-MS/MS** will be added to confirm result. Additional charges apply. Unless otherwise notified, reflex confirmation testing will be performed in the following order of priority: Amphetamines (0.125 g sample required), Cocaine (**0.25 g** sample required), Opiates (0.125 g sample required), Buprenorphine (0.125 g sample required), Marijuana (0.125 g sample required), Benzodiazepines (**0.125 g** sample required), Methadone (0.125 g sample required), Phencyclidine-PCP (**0.25 g** sample required), Barbiturates (**0.25 g** sample required). **This test is New York DOH approved.** **Specimen Requirement:** 4 g meconium in a clean container; Minimum: 2 g (or 3/4 inch cube on each side); All meconium (blackish material) excreted until milk/formula based stool (yellow-green) appears; **Transport all available meconium (4 g is preferred); Ambient**	11/13/17
Melanocyte Stimulation Hormone, Alpha (a-MSH)	MSHA	**Stability:** Ambient: Unacceptable Refrigerated: 24 hours Frozen: **1 month** **Days Performed:** Varies **Reported: 11–14** days	11/13/17
Mercury, Urine 24 Hour	UMERC3	**Special Information:** Total volume **and collection time interval** must be indicated. Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, nonessential over-the-counter medication (upon the advice of their physician), and avoid shellfish and seafood for 48-72 hours. High concentrations of iodine may interfere with the elemental testing. Abstinence from iodine-containing medications or contrast agents for at least one month prior to collecting specimen is recommended. ARUP studies indicate that refrigeration of urine alone, during and after collection, preserves specimen adequately, if tested within 14 days of collection. Urine collected within 48 hours after administration of gadolinium (Gd) containing contrast media (may occur with MRI studies) and acid preserved samples are unacceptable. **Specimens contaminated with blood or fecal material, and specimens transported in non-trace element-free transport tubes (with the exception of the original device) are unacceptable. This test is New York DOH approved.** **Clinical Information: Urinary mercury levels predominantly reflect acute or chronic elemental or** inorganic mercury exposure. **Urine concentrations in unexposed individuals are typically less than 10 µg/L. 24 hour urine concentrations of 30 to 100 µg/L may be associated with subclinical neuropsychiatric symptoms and tremor while concentrations greater than 100 µg/L can be associated with overt neuropsychiatric disturbances and tremors.** Urine mercury levels may be useful in monitoring chelation therapy. **Reference Range:** Mercury, Urine per volume: **0.0–1.9 µg/L** Mercury, Urine per 24 hours: **0.0–2.9 µg/d** Mercury, Urine ratio to creatinine (0–99 Years): **0.0–20.0 µg/g crt** **Days Performed: Sunday**–Saturday **Reported:** 2–5 days	11/13/17
Mycophenolic Acid	MYCOPH	**Special Information: Do not collect in a gel separator tube.** **Specimen Requirement:** 1 mL serum from a **red top tube with no additive;** Minimum: 0.5 mL; **Do not collect in a gel separator tube; Centrifuge and transfer serum to a CCL tube and refrigerate;** Refrigerated *OR* 1 mL plasma from an EDTA lavender top tube; Minimum: 0.5 mL; **Do not collect in a gel separator tube; Centrifuge and transfer plasma to a CCL tube and refrigerate;** Refrigerated **Stability:** Ambient: **After separation from cells:** 8 hours Refrigerated: After separation from cells: 96 hours Frozen: After separation from cells: 11 months **Reference Range: 1.0–3.5 µg/mL**	12/28/17

Test Changes (Cont.)

Test Name	Order Code	Change	Effective Date
Nuclear Antibody by IFA, IgG	ANAIGG	**Special Information: Plasma is unacceptable. Contaminated, hemolyzed, or severely lipemic specimens are also unacceptable. This test is New York DOH approved.** **Clinical Information: Presence of** antinuclear antibodies (ANA) **is a hallmark feature** of systemic **autoimmune** rheumatic diseases **(SARD). ANA lacks diagnostic specificity, and is associated with a variety of diseases (cancers, autoimmune, infectious, and inflammatory conditions) and occurs in healthy individuals in varying prevalence. The lack of diagnostic specificity requires confirmation of positive ANA by more specific serologic tests, which may be guided by the pattern(s) observed. Negative results do not necessarily rule out SARD. ANA are determined by indirect fluorescence assay (IFA) using HEp-2 substrate and IgG-specific conjugate at a screening dilution of 1:80. If positive, patterns reported include homogeneous, speckled, centromere, nucleolar, nuclear dots, or cytoplasmic. All positive results are reported with endpoint titers.** **Specimen Requirement:** 1 mL serum from a serum separator (gold) tube; Minimum: **0.15 mL;** Separate serum from cells ASAP **and transfer serum to standard aliquot tube;** Refrigerated **Reference Range: Less than 1:80**	11/13/17
Osmolality	OSM	**Specimen Requirement:** 1 mL serum from a serum separator (gold) tube; Minimum: **0.5 mL; Submit in original tube or aliquot into CCL aliquot tube; Centrifuge and refrigerate** *OR* 1 mL plasma from a sodium or lithium heparin green top tube; Minimum: **0.5 mL; Centrifuge and refrigerate** **Stability:** Ambient: **After separation from cells:** 1 week Refrigerated: **After separation from cells:** 1 week Frozen: **After separation from cells:** 1 week	11/16/17
Osmotic Fragility, Erythrocyte	OSMFER	**Special Information: Grossly hemolyzed specimens are unacceptable. This test is New York DOH approved.** **Clinical Information: Functional testing of red blood cell sensitivity to osmotic stress; do not use to distinguish between spherocytes in hereditary spherocytosis and acquired autoimmune hemolytic anemia.** For patients with acute hemolysis, a normal red cell osmotic fragility test result cannot exclude an osmotic fragility abnormality since the osmotically labile cells may be hemolyzed and not present. Recommend testing during a state of prolonged homeostasis with stable hematocrit. **Specimen Requirement:** 5 mL whole blood in an EDTA lavender top tube; Minimum: 1 mL whole blood, **2 smears made from the blood submitted;** Submit 2 unfixed, air-dried, and unstained smears **AND 5 mL whole blood;** Specimens should be refrigerated within 30 minutes after collection; **Place both slides and whole blood specimens in an osmotic fragility transport kit (ARUP supply #53821);** Refrigerated *OR* 5 mL whole blood in a sodium or lithium heparin green top tube; Minimum: 1 mL whole blood, **2 smears made from the blood submitted;** Submit 2 unfixed, air-dried, and unstained smears **AND 5 mL whole blood;** Specimens should be refrigerated within 30 minutes after collection; **Place both slides and whole blood specimens in an osmotic fragility transport kit (ARUP supply #53821);** Refrigerated	11/13/17

Test Changes (Cont.)

Test Name	Order Code	Change	Effective Date
Phenobarbital	PHEN	**Special Information: Do not collect in a gel separator tube.** **Specimen Requirement:** 1 mL plasma from a sodium or lithium heparin green top tube; Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer plasma to a CCL tube and transport ambient; Ambient** *OR* 1 mL plasma from an **EDTA lavender top tube;** Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer plasma to a CCL tube and transport ambient; Ambient** *OR* 1 mL serum from a red top tube with no additive; Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer serum to a CCL tube and transport ambient; Ambient** **Stability:** Ambient: **After separation from cells: 7 days** Refrigerated: After separation from cells: **7 days** Frozen: After separation from cells: **1 year** **Methodology: Kinetic Interaction of Microparticles in a Solution** **Reference Range:** 0–99 Years: **10.0**–40.0 **µg/mL**	12/28/17
Phenytoin	PHT	**Special Information: Do not collect in a gel separator tube.** **Specimen Requirement:** 1 mL plasma from a sodium or lithium heparin green top tube; Minimum: 0.5 mL; **Do not collect in a gel separator tube; Centrifuge and transfer plasma to a CCL tube and refrigerate;** Refrigerated *OR* 1 mL serum from a **red top tube with no additive;** Minimum: 0.5 mL; **Do not collect in a gel separator tube; Centrifuge and transfer serum to a CCL tube and refrigerate;** Refrigerated *OR* 1 mL plasma from an **EDTA lavender top tube;** Minimum: 0.5 mL; **Do not collect in a gel separator tube; Centrifuge and transfer plasma to a CCL tube and refrigerate;** Refrigerated **Stability:** Ambient: **After separation from cells: 4 days** Refrigerated: After separation from cells: **4 days** Frozen: After separation from cells: **1 month** **Methodology: Kinetic Interaction of Microparticles in a Solution**	12/28/17
Pseudocholine-sterase Phenotype	PCHEP	**For Interfaced Clients Only: Test build may need to be modified** **Includes:** Pseudocholinesterase, Total Dibucaine Number **Special Information:** Specimen must be drawn prior to surgery or at least > 2 days post surgery. **Do not draw in recovery room.** Specimens should be collected 48 hours after the administration of succinylcholine. **Sodium citrate (light blue) or oxalate/fluoride (gray) tubes are unacceptable. Whole blood is not acceptable. This test is New York DOH approved.** **Specimen Requirement:** 1 mL serum from a serum separator (gold) tube; Minimum: **0.25 mL; Allow specimen to clot completely at room temperature;** Separate serum from cells ASAP **or within 2 hours of collection;** Refrigerated *OR* 1 mL plasma from an EDTA lavender top tube; Minimum: **0.25 mL; Separate plasma from cells ASAP or within 2 hours of collection;** Refrigerated *OR* 1 mL plasma from a sodium or lithium heparin green top tube; Minimum: **0.25 mL; Separate plasma from cells ASAP or within 2 hours of collection;** Refrigerated **Reference Range:** Pseudocholinesterase, Total (0–99 Years): 2900-7100 U/L Dibucaine Number: Refer to report	11/13/17

Test Changes (Cont.)

Test Name	Order Code	Change	Effective Date
PTH Related Peptide	PTHPEP	**Special Information: Grossly hemolyzed specimens are unacceptable. This test is New York DOH approved.** **Clinical Information: Aids in the evaluation of unexplained hypercalcemia, particularly in suspected hypercalcemia of malignancy. Amino (N)- and carboxy (C)-terminus PTHrP fragments, such as those produced by some patients with renal insufficiency, do not interfere with this assay.** **Specimen Requirement: 1.5 mL** plasma **collected using Protease Inhibitor tube;** Minimum: **0.7 mL; Collect using Protease Inhibitor tube (PPACK; Phe-Pro-Arg-chloromethylketone) (ARUP supply #49662); A winged collection set must be used; Mix well; Separate from cells within one hour of collection; Transfer 1.5 mL plasma to standard aliquot tube and freeze immediately; Separate specimens must be submitted when multiple tests are ordered;** Centrifuge, aliquot and freeze ASAP **Stability:** Ambient: **After separation from cells:** Unacceptable Refrigerated: **After separation from cells:** Unacceptable Frozen: **After separation from cells: 3 months** **Methodology: High Performance Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)** **Reference Range:** **Male** **Under 18 Years: Not established** **18 Years and older: 0.0–2.3 pmol/L** **Female** **Under 18 Years: Not established** **18 Years and older: 0.0–3.4 pmol/L** **Days Performed: Sunday,** Monday, **Wednesday,** Friday **Reported:** 3–**7** days **CPT: 82542 x 1**	12/28/17
Reverse T3	T3REV	**Special Information: Grossly hemolyzed specimens are not acceptable. Allow serum specimen to clot completely at room temperature before centrifuging. This test is New York DOH approved.** **Clinical Information: Generally not recommended for routine evaluation of thyroid disorders, although may be considered in pregnant women.**	Effective immediately
Rheumatoid Factor IgM, IgG & IgA	RHEUMA	**Special Information: Contaminated, hemolyzed, icteric, or lipemic specimens are unacceptable. This test is New York DOH approved.** **Specimen Requirement:** 0.5 mL serum from a serum separator (gold) tube; Minimum: 0.3 mL; Separate serum from cells **ASAP or** within 2 hours of collection; **Transfer serum to standard aliquot tube;** Refrigerated **Methodology: Semi Quantitative** Enzyme Linked Immunosorbent Assay **CPT:** 83516 **x 3**	11/13/17
Rubella IgM Antibody	RUBIGM	**Special Information:** Acute and convalescent specimens must be labeled as such; parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of acute specimens. Please label specimen plainly as 'acute' or 'convalescent.' **Contaminated, heat-inactivated, or grossly hemolyzed specimens are unacceptable. This test is New York DOH approved.** **Clinical Information: Not recommended as a stand-alone test. Testing immediately post-exposure is of no value without a later convalescent specimen. While the presence of IgM antibodies suggests current or recent infection, low levels of IgM antibodies may occasionally persist for more than 12 months post-infection or immunization. The magnitude of the measured result is not indicative of the amount of antibody present.** **Specimen Requirement:** 1 mL serum from a serum separator (gold) tube; Minimum: 0.5 mL; **Allow specimen to clot completely at room temperature;** Separate serum from cells ASAP or within 2 hours of collection; **Transfer 1 mL serum to standard aliquot tube; Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of acute specimens; Label specimens plainly as 'acute' or 'convalescent;'** Refrigerated **Methodology: Semi-Quantitative** Chemiluminescent Immunoassay	

Test Changes (Cont.)

Test Name	Order Code	Change	Effective Date
Salicylate	SALI	**Clinical Information: Therapeutic range for anti-pyretic: 3.0–10.0 mg/dL. Therapeutic range for anti-inflammatory/rheumatic fever: 15.0–30.0 mg/dL** **Specimen Requirement:** 1 mL plasma from a **lithium heparin green top tube;** Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer plasma to a CCL tube and refrigerate; Refrigerated** *OR* 1 mL serum from a **red top tube with no additive;** Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer serum to a CCL tube and refrigerate; Refrigerated** *OR* 1 mL plasma from an **EDTA lavender top tube;** Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer plasma to a CCL tube and refrigerate; Refrigerated** **Stability:** Ambient: **Unacceptable** Refrigerated: After separation from cells: 2 weeks Frozen: **Unacceptable** **Methodology: Enzymatic** **Reference Range:** 0–99 Years: **3–30 mg/dL (See Clinical Information)**	12/28/17
Theophylline	THEO	**Special Information: Do not collect in a gel separator tube.** **Specimen Requirement:** 1 mL plasma from a sodium or lithium heparin green top tube; Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer plasma to a CCL tube and refrigerate;** Refrigerated *OR* 1 mL serum from a **red top tube with no additive;** Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer serum to a CCL tube and refrigerate;** Refrigerated *OR* 1 mL plasma from an **EDTA lavender top tube;** Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer plasma to a CCL tube and refrigerate;** Refrigerated **Stability:** Ambient: **Unacceptable** Refrigerated: After separation from cells: 1 week Frozen: After separation from cells: 60 days **Methodology: Kinetic Interaction of Microparticles in a Solution**	12/28/17
Tobramycin, Post Dose	TOBRPO	**Special Information: Do not collect in a gel separator tube.** **Clinical Information: Draw 30 minutes after completion of infusion.** **Specimen Requirement:** 1 mL plasma from a sodium or lithium heparin green top tube; Minimum: 0.5 mL; **Do not collect in a gel separator tube;** Centrifuge and transfer plasma to a **CCL tube and freeze; Frozen** *OR* 1 mL serum from a **red top tube with no additive;** Minimum: 0.5 mL; **Do not collect in a gel separator tube;** Centrifuge and transfer serum to a **CCL tube** and refrigerate; Freeze if storage/transport time exceeds **72** hours; Refrigerated *OR* 1 mL plasma from an **EDTA lavender top tube;** Minimum: 0.5 mL; **Do not collect in a gel separator tube;** Centrifuge and transfer plasma to a **CCL tube** and refrigerate; Freeze if storage/transport time exceeds **72** hours; Refrigerated **Stability:** Ambient: **Unacceptable** Refrigerated: After separation from cells: 3 days Frozen: After separation from cells: 1 month **Methodology: Homogenous Enzyme Immunoassay (HEIA)**	12/28/17

Test Changes (Cont.)

Test Name	Order Code	Change	Effective Date
Tobramycin, Pre Dose	TOBRPR	**Special Information: Do not collect in a gel separator tube.** **Clinical Information: Draw just prior to next infusion.** **Specimen Requirement:** 1 mL plasma from a sodium or lithium heparin green top tube; Minimum: 0.5 mL; **Do not collect in a gel separator tube;** Centrifuge and transfer plasma to a **CCL tube and freeze; Frozen** *OR* 1 mL serum from a **red top tube with no additive;** Minimum: 0.5 mL; **Do not collect in a gel separator tube;** Centrifuge and transfer serum to a **CCL tube** and refrigerate; Freeze if storage/transport time exceeds **72** hours; Refrigerated *OR* 1 mL plasma from an **EDTA lavender top tube;** Minimum: 0.5 mL; **Do not collect in a gel separator tube;** Centrifuge and transfer plasma to a **CCL tube** and refrigerate; Freeze if storage/transport time exceeds **72** hours; Refrigerated **Stability:** Ambient: **Unacceptable** Refrigerated: After separation from cells: 3 days Frozen: After separation from cells: 1 month **Methodology: Homogenous Enzyme Immunoassay (HEIA)**	12/28/17
Tobramycin, Random	TOBRA	**Special Information: Do not collect in a gel separator tube.** **Specimen Requirement:** 1 mL plasma from a sodium or lithium heparin green top tube; Minimum: 0.5 mL; **Do not collect in a gel separator tube;** Centrifuge and transfer plasma to a **CCL tube and freeze; Frozen** *OR* 1 mL serum from a **red top tube with no additive;** Minimum: 0.5 mL; **Do not collect in a gel separator tube;** Centrifuge and transfer serum to a **CCL tube** and refrigerate; Freeze if storage/transport time exceeds **72** hours; Refrigerated *OR* 1 mL plasma from an **EDTA lavender top tube;** Minimum: 0.5 mL; **Do not collect in a gel separator tube;** Centrifuge and transfer plasma to a **CCL tube** and refrigerate; Freeze if storage/transport time exceeds **72** hours; Refrigerated **Stability:** Ambient: **Unacceptable** Refrigerated: After separation from cells: 3 days Frozen: After separation from cells: 1 month **Methodology: Homogenous Enzyme Immunoassay (HEIA)**	12/28/17
Toxicology Screen, Urine	UTOX2	**Special Information: Preliminary positive results should be confirmed by another method.** **Methodology:** **Enzymatic** **Kinetic Interaction of Microparticles in a Solution**	Effective immediately
Type and Screen	TSCR	**Specimen Requirement:** 5 mL whole blood in an EDTA pink top tube; Minimum: 3 mL; All blood bank specimens must be labeled with the date, **time** and initials of the phlebotomist drawing the specimen; Do not use serum separator tubes; Ambient *OR* 5 mL whole blood in an EDTA lavender top tube; Minimum: 3 mL; All blood bank specimens must be labeled with the date, **time** and initials of the phlebotomist drawing the specimen; Ambient	12/7/17
Valproic Acid	VPA	**Special Information: Do not collect in a gel separator tube.** **Specimen Requirement:** 1 mL plasma from a sodium or lithium heparin green top tube; Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer plasma to a CCL tube and refrigerate;** Refrigerated *OR* 1 mL serum from a **red top tube with no additive;** Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer serum to a CCL tube and refrigerate;** Refrigerated *OR* 1 mL plasma from an **EDTA lavender top tube;** Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer plasma to a CCL tube and refrigerate;** Refrigerated **Stability:** Ambient: **After separation from cells:** 2 days Refrigerated: After separation from cells: 7 days Frozen: After separation from cells: 3 months **Methodology: Homogenous Enzyme Immunoassay (HEIA)**	12/28/17

Test Changes (Cont.)

Test Name	Order Code	Change	Effective Date
Vancomycin	VANCRA	**Special Information: Do not collect in a gel separator tube.** **Specimen Requirement:** 1 mL plasma from a lithium heparin green top tube; Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer plasma to a CCL tube and refrigerate;** Refrigerated *OR* 1 mL serum from a **red top tube with no additive;** Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer serum to a CCL tube and refrigerate;** Refrigerated *OR* 1 mL plasma from an **EDTA lavender top tube;** Minimum: **0.5 mL; Do not collect in a gel separator tube; Centrifuge and transfer plasma to a CCL tube and refrigerate;** Refrigerated **Stability:** Ambient: **After separation from cells: 48 hours** Refrigerated: After separation from cells: **14 days** Frozen: After separation from cells: **12 months** **Methodology: Kinetic Interaction of Microparticles in a Solution**	12/28/17
Varicella Zoster IgG Ab, CSF	CVZVG	**Special Information:** Unacceptable conditions: Specimens other than cerebrospinal fluid (CSF). Contaminated, heat-inactivated, hemolyzed or **xanthochromic specimens** **Specimen Requirement:** 0.5 mL cerebrospinal fluid (CSF) in a clean container; Minimum: 0.3 mL; **Transfer 0.5 mL CSF to standard aliquot tube;** Refrigerated	11/13/17
Zinc	ZINC	**Note:** ***Only plasma specimens from EDTA navy blue top tubes will be accepted. Serum is not acceptable.*** **Specimen Requirement:** 1 mL plasma from an EDTA navy blue top tube; Minimum: 0.5 mL; Do not allow specimen to come into contact with polystyrene, glass, metal or rubber; Centrifuge and transfer plasma to a polypropylene tube; Do not allow plasma to remain on red cells; Refrigerated	Effective immediately

New Tests

Test Name	Order Code	Change	Effective Date
Enteric Bacterial Panel by PCR	STLPCR	**Special Information:** Requests for testing on patients who have been in the hospital > 3 days will be rejected since there is a low likelihood of the enteric pathogens screened for in this test causing diarrhea in this population. Rectal swabs, stool received in any transport media other than Cary-Blair, or stool received frozen will be rejected. Specimens positive for Shigella spp. or Salmonella spp. will be reflexed to culture to allow susceptibility testing and/or epidemiologic investigation to be performed if indicated. Salmonella isolates and specimens positive for shiga-toxin genes will be submitted to ODH laboratory for further characterization. **Clinical Information:** This PCR assay replaces routine stool culture by detecting Salmonella spp., Shigella spp., Campylobacter jejuni/coli, and shiga-toxin (stx1 and stx2) genes. Stool specimens from symptomatic patients with suspected acute gastroenteritis, enteritis or colitis should be submitted. Cultures to detect Vibrio (VIBCUL), Yersinia (YERCUL), and Aeromonas/Plesiomonas (AERPLE) are available as separate test orders. **Specimen Requirement:** One stool specimen in a Cary-Blair kit; Protect against freezing or exposure to excessive heat; Ambient *OR* One stool specimen in a sterile container; Protect against freezing or exposure to excessive heat; Ambient **Stability:** Ambient: Specimens in Cary-Blair transport media or unpreserved stool in a sterile container can be stored up to 24 hours at 2 - 25 °C before testing Refrigerated: Specimens in Cary-Blair transport media or unpreserved stool in a sterile container can be stored up to 5 days at 2 - 8 °C before testing Frozen: Specimens in Cary-Blair transport media or unpreserved stool in a sterile container cannot be frozen; Specimens received frozen will be rejected **Methodology:** Qualitative Polymerase Chain Reaction **Days Performed:** 7 days per week **Reported:** 1–3 days **CPT:** 87505 x 1	1/9/18
FISH for ALK Cyto Block	ALKCB	**Note:** *This test was previously announced in the October 2017 Technical Update.* **Price:** $760.00 (non-discountable)	11/20/17
FISH for RET Cyto Block	RETCB	**Note:** *This test was previously announced in the October 2017 Technical Update.* **Price:** $640.00 (non-discountable)	11/20/17
FISH for ROS1 Cyto Block	ROS1CB	**Note:** *This test was previously announced in the October 2017 Technical Update.* **Price:** $640.00 (non-discountable)	11/20/17

Fee Reductions

Test Name	Order Code	List Fee	CPT Code	Effective Date
Chromogranin A	CHROMA	$84.00	86316	1/10/18
Hemiplegic Migraine Evaluation	HEMMIG	$3300.00 (non-discountable)	81406, 81407 x 2	Effective immediately
Herpes Simplex Virus by PCR, CSF	HSPCRC	$245.00 (non-discountable)	87529 x 2	1/16/18
Organism Identification, Anaerobic	OIDANA	$92.00	87076	11/21/17

Discontinued Tests

Test Name	Order Code	Test Information	Effective Date
Brodifacoum	BRODIF	This test will no longer be available.	10/30/17
Caffeine	CAFF	This test will no longer be available.	12/27/17
Fetal Fibronectin	FFIBRO	This test will no longer be available.	12/27/17
Lamellar Body Count	LMBDCT	This test will no longer be available.	12/27/17
Protein, Synovial Fluid	SFPROT	This test will no longer be available.	1/4/18
Shiga Toxin Detection	SHIGAT	This test will no longer be available. Suggest ordering Enteric Bacterial Panel by PCR (STLPCR).	1/9/18
SMAD3 Gene Sequencing	SMAD3	This test will no longer be available.	12/27/17
Stool Culture/EIA	STCUL	This test will no longer be available. Suggest ordering Enteric Bacterial Panel by PCR (STLPCR).	1/9/18
T-Cell Receptor Delta Using BIOMED2 Primers	TCRD	This test will no longer be available.	1/15/18