



January, 2024

Dear Physician:

Barnes-Jewish Hospital Department of Laboratories is committed to possessing the reliability, honesty, trustworthiness and high degree of business integrity expected of a participant in federally funded healthcare programs. As part of this commitment, our policy concerning profiles and panels is to provide physicians with the flexibility to choose appropriate tests to assure that the convenience of ordering profiles and panels does not distance physicians from making deliberate decisions regarding which tests are truly medically necessary.

To demonstrate our commitment, we provide an annual notice to each of our physician clients advising them that if they order tests for Medicare or Medicaid beneficiaries, they should only order those tests that are medically necessary for each patient. The United States Department of Health and Human Services, Office of Inspector General, takes the position that a physician who orders medically unnecessary tests may be subject to civil penalties. Any clinical laboratory that conforms its conduct to meet the Model Compliance Plan for clinical laboratories established by the Office of the Inspector General as we do, must provide this type of annual notice to its clients.

Explanation of Attachments

As part of this commitment to the government and to you, attached to this letter are lists of the standard organ or disease panels, reflex tests, confirmation tests and profiles available at Barnes-Jewish Hospital Department of Laboratories. The attachment is structured as follows:

1. Attachment 1 lists the American Medical Association’s (AMA) organ or disease panels effective January 1, 2024

The panels are broken out to show the individual test components by name and by CPT code. For your information and convenience, please visit these payers’ websites to obtain their current fee schedules:

- Medicare (http://www.cms.hhs.gov/ClinicalLabFeeSched/02_clinlab.asp#TopOfPage)
- Illinois Medicaid (<https://www.illinois.gov/hfs/MedicalProviders/MedicaidReimbursement/Pages/Practitioner.aspx>)
- Missouri Medicaid or MO Health Net (<https://dss.mo.gov/mhd/providers/fee-for-service-providers.htm>).
- Local and National Coverage Determinations applicable for Barnes-Jewish Hospital can be accessed on the WPS Medicare website under topic center policies: https://www.wpsgha.com/wps/portal/mac/site/home!/ut/p/z1/04_Sj9CPykssy0xPLMnMz0vMAfljo8ziAzw8zDwMLQx8_I18DQwcfid3CjF0tfLzMTUz1wwkpiAJKG-A

The implementation of PAMA required Medicare to pay the weighted median of private payer rates for each separate HCPCS code. Organ or Disease Oriented panels are panels that consist of groups of specified tests. Laboratories shall report the panel tests where appropriate and not report separately the tests that make up that panel. All Medicare coverage rules apply.

The Medicare standard systems must calculate the correct payment amount. The only acceptable Medicare definition for the component tests included in the CPT codes for organ or disease oriented panels is the American Medical Association (AMA) definition of component tests. CMS will not pay for the panel code unless all of the tests in the definition are performed and are medically necessary.

2. Attachment 2 lists our standard tests and profiles that contain a confirmation or a reflex test(s). The list shows the initial test name, the CPT code, the criteria for performing the confirmation or reflex test(s), and the name and CPT code for the confirmation or reflex test(s).
3. Attachments 3 and 4 list certain standard profiles in which every test component is essential to providing a medically valid result. The profiles are broken out to show the individual test components by name and by CPT code.

CPT Coding

Barnes-Jewish Hospital Department of Laboratories bills its test procedures to third party payers, such as Medicare, Medicaid and private insurance, at the same fee it bills patients and in accordance with any specific CPT coding required by the payer. The CPT codes listed in this letter are from the 2024 edition of the Physicians' Current Procedural Terminology, a publication of the AMA. CPT codes are provided for the information of our clients; however, correct coding often varies from one payer to another. Therefore, these codes should not be used without confirming with the appropriate payer that their use is appropriate in each case.

MO HealthNet

Barnes-Jewish Hospital as a MO HealthNet enrolled hospital may bill for outpatient laboratory services if the services are performed:

- in their hospital's laboratory
- by an independent laboratory enrolled as a MO HealthNet provider under an arrangement which documents that the hospital is responsible for billing the services provided by the independent laboratory.
- by an independent laboratory not enrolled as a MO HealthNet provider under an arrangement which documents that the hospital is responsible for billing the services provided by the independent laboratory.

Providers need to keep a copy of this documentation as well as the appropriate CLIA certification on file and be able to provide upon request.

Additionally, MO HealthNet enrolled independent laboratories also have the choice to bill for outpatient laboratory services. However, laboratory services that are billed by the hospital cannot be billed by the independent laboratory and vice versa. This is considered duplicate billing and claims are subject to recoupment. (https://dss.mo.gov/mhd/providers/pdf/bulletin39-53_2017may17.pdf)

Illinois Public Aid

Barnes-Jewish Hospital may not charge Illinois Public Aid for outpatient laboratory testing that is forwarded to an independent referral laboratory for analysis and not performed by Barnes-Jewish Hospital Department of Laboratories unless Barnes-Jewish Hospital has a financial agreement with the independent referral laboratory (<https://www.illinois.gov/hfs/SiteCollectionDocuments/LabPolicyTopicL21012Rev060118.pdf>)

If the independent referral laboratory is not an enrolled provider of Illinois Public Aid and/or there is no financial agreement, only the performing laboratory may submit claims for payment. To achieve compliance with this regulation, it is the responsibility of the physician or the submitting institution to provide the patient's complete insurance information to be forwarded to the performing laboratory for billing to the appropriate state department.

For organizations not doing business in Missouri or Illinois it is the responsibility of the submitting institution to validate the laws governing their state to ensure they comply with billing requirements in regard to referral testing.

Laboratory Date of Service Policy

Barnes-Jewish Hospital Department of Laboratories follows the rules outlined in the CMS Laboratory Date of Service Policy. The policy can be found at <https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/ClinicalLabFeeSched/Clinical-Lab-DOS-Policy>

Specifically, under 42 CFR 414.510(b)(5), in the case of a molecular pathology test performed by a laboratory other than a blood bank or center, a test designated by CMS as an ADLT under paragraph (1) of the definition of an advanced diagnostic laboratory test in 42 CFR 414.502, a test that is a cancer-related protein-based MAAA, or the test described by CPT code 81490,, the date of service of the test must be the date the test was performed. If all of the requirements are met, the DOS of the test must be the date the test was performed, which effectively unbundles the laboratory test from the hospital outpatient encounter. As a result, the test is not considered a hospital outpatient service for which the hospital must bill Medicare and for which the performing laboratory must seek payment from the hospital, but rather a laboratory test under the Clinical Laboratory Fee Schedule for which the performing laboratory must bill Medicare directly.

Please review carefully the panels listed in the Attachments. If you have any questions or would like to discuss this matter with us, please contact Customer Service at the address and phone number listed below. Barnes-Jewish Hospital Laboratory clinical consultant can be contacted as follows: Dr. Ann M. Gronowski (Clinical Laboratory 314-362-0194).

Thank you for your attention to this matter.
Barnes-Jewish Hospital Department of Laboratories
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Attachment(s)

- Attachment 1 - AMA Organ or Disease Panels
- Attachment 2 - Standard Reflex/Confirmation Tests
- Attachments 3 and 4 - Standard Profiles

AMA ORGAN OR DISEASE PANELS – 2024

CPT CODE	DESCRIPTOR and COMPONENTS
80074 86709 86705 87340 86803	<u>Acute Hepatitis Panel</u> Hepatitis A Antibody, IgM Hepatitis B Core Antibody, IgM Hepatitis B Surface Antigen Hepatitis C Antibody
80048 82310 82374 82435 82565 82947 84132 84295 84520	<u>Basic Metabolic Panel (8 Tests)</u> Calcium, Total Carbon Dioxide Chloride Creatinine Glucose Potassium Sodium Urea Nitrogen
80047 82330 82374 82435 82565 82947 84132 84295 84520	<u>Basic Metabolic Panel with Ionized Calcium (8 Tests)</u> Calcium, Ionized Carbon Dioxide Chloride Creatinine Glucose Potassium Sodium Urea Nitrogen
80053 82040 84460 84450 82247 82310 82374 82435 82565 82947 84075 84132 84155 84295 84520	<u>Comprehensive Metabolic Panel (14 Tests)</u> Albumin ALT (SGPT) AST (SGPT) Bilirubin, Total Calcium, Total Carbon Dioxide Chloride Creatinine Glucose Phosphatase, Alkaline Potassium Protein, Total Sodium Urea Nitrogen
80051 82374 82435 84132 84295	<u>Electrolyte Panel</u> Carbon Dioxide Chloride Potassium Sodium

AMA ORGAN OR DISEASE PANELS – 2024

CPT CODE	DESCRIPTOR and COMPONENTS
80076	<u>Hepatic Function Panel (7 Tests)</u>
82040	Albumin
84460	ALT (SGPT)
84450	AST (SGOT)
82247	Bilirubin, Total
82248	Bilirubin, Conjugated
84075	Phosphatase, Alkaline
84155	Protein, Total
80061	<u>Lipid Panel</u>
82465	Cholesterol, Serum Total
83718	Cholesterol, High Density Lipoprotein (HDL)
84478	Triglycerides
	LDL – Calculated
80055	<u>Obstetric Panel</u>
85025	Complete Blood Count (CBC)
87340	Hepatitis B Surface Antigen
86762	Rubella Antibody, IgG
86592	RPR
	<u>Type and Screen</u>
86900	ABO
86901	Rh
86850	Screen
80081	<u>Obstetric Panel with HIV</u>
85025	Complete Blood Count (CBC)
87340	Hepatitis B Surface Antigen
86762	Rubella Antibody, IgG
86592	RPR
87389	HIV-1/HIV-2 Ab + p24 Ag
	<u>Type and Screen</u>
86900	ABO
86901	Rh
86850	Screen
80069	<u>Renal Function Panel (10 Tests)</u>
82040	Albumin
82310	Calcium, Total
82374	Carbon Dioxide
82435	Chloride
82565	Creatinine
82947	Glucose
84100	Phosphorus, Inorganic (Phosphate)
84132	Potassium
84295	Sodium
84520	Urea Nitrogen

URINALYSIS AND HEMATOLOGY – 2024

CPT CODE	DESCRIPTOR and COMPONENTS
81001 81003 81015	<u>Complete Urinalysis</u> Urinalysis, Macroscopic Urinalysis, Microscopic
85025 85048 85041 85018 85014 85049 N/A	<u>Complete Blood Count (CBC)</u> – Includes automated differential White Blood Count Red Blood Count Hemoglobin Hematocrit Platelet Count Automated Differential
85027 85048 85041 85018 85014 85049	<u>CBC - No automated differential</u> White Blood Count Red Blood Count Hemoglobin Hematocrit Platelet Count

BLOOD PRODUCTS– 2024

In order to comply with FDA guidance for the prevention of bacterial contamination in platelets, the Red Cross, which serves as the primary blood supplier for all BJC hospitals, will begin providing only two platelet products starting June 1, 2021: pathogen-reduced (PR) platelets and large-volume delayed-sampling (LVDS) platelets. The FDA considers these products to be equivalent in meeting the universal indication for prevention of bacterial contamination in all patients.”

CPT CODE	DESCRIPTOR and COMPONENTS
P09035 36430 P9100	Platelet Pher Leukoreduced, Non-Irradiated Transfusion Blood/Component Pathogen Test Platelet
P0937 36430 P9100	Platelet Pher Leukoreduced, Irradiated Transfusion Blood/Component Pathogen Test Platelet

STANDARD REFLEX/CONFIRMATION TESTS - 2024

Initial Test	CPT Code	Reflex Criteria	Reflex Test	CPT Code
ABO Type	86900	If ABO discrepancy	Antibody Identification Patient Red Cell Phenotyping	86870 86906
Activated Protein C Resistance (APCR)	85307	Abnormal APCR	Factor V Leiden Molecular Test	81241
Adalimumab QN with Reflex to Ab, S	80145	If Result <= 8 mcg/mL	Adalimumab Ab, S	83520
ADAMTS13 Activity Profile	85397	If activity is ≤20%	ADAMTS13 Inhibitor	85335
Adenovirus DNA Detection by PCR, Qual	87798	If result is positive	Adenovirus DNA Detection by PCR, Quant	87799
Albumin (Microalbumin), Urine/ Creatinine Ratio Urine	82043	If specimen is random (non 24-hour)	Creatinine	82570
Allergic Bronchopulmonary Aspergillosis (ABPA) Cascade	82785	If total IgE is > 417 IU/ml If Aspergillus fumigatus IgE is elevated (>0.35 kUnits/L)	Aspergillus fumigatus IgE Aspergillus fumigatus IgG Ab	86003 86606
Anti-deaminated Gliadin (DGP) IgA	86258	If IgA deficient	Gliadin Ab IgG	86258
Aspergillus Specific IgE	86003	If result is positive	Aspergillus IgG	86606
Alpha-1-Antitrypsin Proteotype S/Z, LC-MS/MS	82542 82103	If MS proteotype and quantitation are discordant	Alpha-1-Antitrypsin Phenotype	82104
AFP Amniotic Fluid	82106	If AFP abnormal	Acetylcholinesterase	82013
Amphetamines, Urine	80307	If screening is positive	Amphetamines Conf MS Urine. The confirmation may identify one or more of the following: Amphetamine, Methamphetamine, MDA, MDE, MDMA, MBDB	80324 (G0480) 80359 (G0480)
Antineutrophil Cytoplasmic Antibody (ANCA)	86036	If ANCA qualitative is positive	ANCA , Confirmation (MPO, PR3) ANCA, Quantitative	83876 83520 86037
Antinuclear Antibody, ANA, Reflex	86038	If ANA qualitative is positive	ANA Quantitative, ENA Screen and DS DNA	86039 86235 86225
Antinuclear Antibody, ANA, Screen	86038	If ANA qualitative is positive	ANA, Quantitative	86039
Antibody Screen, Blood	86850	If screen is positive, an antibody identification will be performed and the following <u>may</u> be performed as required	Antibody Identification Antibody, Titer Absorption Elution Antigen Testing Patient Red Cell Phenotyping Inhibition/Neutralization Pretreatment of RBCs for Antibody with drugs Crossmatch Immediate Spin Crossmatch IgG Crossmatch Electronic Antigen Typing Donor	86870 86886 86978 86860 86905 86906 86977 86970 86920 86922 86923 86902
BCR/ABL major (p210)	81206	New diagnosis that is negative for major translocation	BCR/ABL minor (p190)	81207
Blastomyces Ab by EIA	86612	If result is equivocal or positive	Blastomyces Ab	86612
Brucella Antibody Screen, IgG & IgM	86622 x2	If screening is positive or equivocal	Brucella, Total Ab, Confirmation	86622
CALR Mutation Analysis	81219	Suspected MPN (BCR/ABL neg, JAK2 V617F neg) that are negative for CALR insertions or deletions	MPL Exon 10 Sequencing	81403
Cashew IgE	86003	If >10.0	Cashew Component 3	86003
Celiac Screen	86364 86258	TTG IgA and Gliadin Ab IgA performed. If patient is deficient for IgA.	anti TTG IgG and Gliadin Ab IgG	86364 86258
Clostridium difficile	87449 87324	If Clostridium difficile GDH/Toxin result is invalid	Clostridium difficile PCR	87493
Cocaine Metabolite (Benzoyllecgonine), Urine	80307	If screening is positive	Cocaine Metabolite, Confirmation	80353 (G0480)
Cold Agglutinin Screen	86156	Prior to performing Cold Agglutinin Screen, a Direct Antiglobulin Test, Polyspecific will be performed to rule out false positive reactions. (See also Standard Reflex/ Confirmation for Direct Antiglobulin Test, Polyspecific.) If screening is positive	Cold Agglutinin Titer	86157
Compatibility Antiglobulin	86922	If compatibility testing is required for RBC exchange procedure on a patient with sickle cell disease, red cell antigen typing for C, E and Kell will be performed, if not previously performed or available in patient's blood bank history	Blood Type Non ABO/Rh each antigen	86905
Compatibility Electronic	86923	If compatibility testing is required for RBC exchange procedure on a patient with sickle cell disease, red cell antigen typing for C, E and Kell will be performed, if not previously performed or available in patient's blood bank history	Blood Type Non ABO/Rh each antigen	86905
Compatibility Immediate Spin	86920	If compatibility testing is required for RBC exchange procedure on a patient with sickle cell disease, red cell antigen typing for C, E and Kell will be performed, if not previously performed or available in patient's blood bank history	Blood Type Non ABO/Rh each antigen	86905
Cord Blood Evaluation	86900 86901 86880	If IgG DAT is positive <u>may</u> reflex to	Elution Antibody identification	86860 86870

STANDARD REFLEX/CONFIRMATION TESTS - 2024

Initial Test	CPT Code	Reflex Criteria	Reflex Test	CPT Code
CPAP aPTT Algorithm	85730	aPTT >40 seconds	Thrombin Time; If Thrombin Time <25 seconds then Lupus Anticoagulant with Reflexes, If prolonged screen results then dRVVT Confirm, dilute 50:50 mix, SCT Confirm, SCT50:50. If LA negative or indeterminate and the INR is <2.0 then Factors XI, IX, VIII	85670 85613 85732 85613 x2 85732 x2 85270 85250 85240
Cryoglobulin, Serum	82595	If cryoglobulin has a result other than negative	Immunofixation Cryoglobulin	86334
Cryoglobulin Serum and Plasma	82595 82585	If cryoglobulin has a result other than negative	Immunofixation Cryoglobulin	86334
Cryptococcus Antigen	87899	If latex agglutination is positive	Cryptococcus Titer	87899
CTS CBC Reflex for Pre-Op Cardiac Surgery	85025	If the Hemoglobin is less than 13	Reticulocyte, Ferritin, Iron Profile and Vitamin B12	85046 82728 83540-Iron 83550 Iron Binding Capacity 82607
Culture, Blood	87040	If blood culture is positive for gram positive (organisms) cocci	Multiplex gram positive organism nucleic acid direct probe technique	87800
Cytology, Liquid Based PAP Test	88142	With diagnosis of atypical squamous cells of undetermined significance (ASC-US)	Human Papillomavirus (HPV) Digene Hybrid Capture II (Amplified Probe)	87624
Diabetic Lipid Panel		For all diabetic hospital patients (as indicated by a prescription for insulin or an oral hypoglycemic agent) with no orders for lipid panel in a 6-month range or with a lipid panel with LDL result >100 mg/dL in >3 months a lipid panel will be ordered on an acceptable specimen within 24 hours of admission	Lipid Panel	80061
Diabetic Hemoglobin A1C Panel		For all diabetic hospital patients (as indicated by a prescription for insulin or an oral hypoglycemic agent) with no orders for Hemoglobin A1C in a 60-day range.	Hemoglobin A1C	83036
Direct Antiglobulin Test, Polyspecific	86880	If screening is positive If anti-IgG is positive	Anti-C3 and Anti IgG Elution Antibody Identification	86880 x2 86860 86870
Drug Screen with Confirmation, Ur	80307	If screening is positive for amphetamines, cocaine metabolite, fentanyl, methadone, opiates, oxycodone, or phenycyclidine, perform confirmation	Amphetamines Conf MS Urine Cocaine Metab Conf Fentanyl Conf MS Urine Methadone Conf Opiates Conf MS Urine Oxycodone Conf MS Urine, Phencyclidine Conf These may identify one or more individual drugs within their class.	amphetamines 80324 (G0480) 80359 (G0480) cocaine metab- 80353 (G0480) methadone- 80358 (G0480) opiates- 80361 (G0480) 80365 (G0480) 80356 (G0480) oxycodone- 80365 (G0480) phenycyclidine- 83992 fentanyl 80354 (G0480)
Electrophoresis, Protein, Reflex, Serum	84165	If a paraprotein is detected and an immunotyping has not been performed within the last year or if the protein electrophoresis pattern is different from previous or if gamma globulin is < 0.9 g/dL on initial testing If immunotyping is negative for monoclonal protein	Immunotyping, Serum Immunoglobulin Free Light Chains	86334 83521x2
Encephalopathy Autoimmune Evaluation CSF (See Std Prof Ref Lab)	86255 x 19 86341	If IFA is indeterminate If IFA pattern suggests CRMP-5-IgG If IFA pattern suggests Amphiphysin Ab If IFA pattern suggests NMDA-R and NMDA-R Ab CBA, CSF is positive If IFA pattern suggests AMPA-R and AMPA-R Ab CBA, CSF is positive If IFA pattern suggests GABA-B-R and GABA-B-R Ab CBA, CSF is positive If IFA pattern suggests GFAP Ab If IFA pattern suggests DPPX Ab If IFA pattern suggests mGluR1 Ab If IFA pattern suggests AGNA-1 Ab If IFA pattern suggests ANNA-1 Ab If IFA pattern suggests ANNA-2 Ab If IFA pattern suggests PCA-1 Ab If IFA pattern suggests PCA-Tr Ab If IFA pattern suggests IgLON5 Ab If IFA pattern suggests NIF Ab	CRMP-5-IgG Western blot Amphiphysin Immunoblot NMDA-R Ab IF titer AMPA-R Ab IF titer GABA-B-R Ab IF titer GFAP IFA titer and GFAP CBA DPPX Ab CBA and DPPX titer mGluR1 Ab CBA and mGluR1 titer AGNA-1 immunoblot ANNA-1 immunoblot ANNA-2 immunoblot PCA-1 immunoblot PCA-Tr immunoblot IgLON5 IFA titer and IgLON5 CBA alpha internexin CBA, NIF heavy chain CBA, NIF light chain CBA, and NIF titer	84182 84182 86256 86256 86256 86256 86256 86256 84182 84182 84182 84182 86256 86255 86255 86255 86255 86256 84182 84182 84182 84182 86256 86255 86255 86255 86256 86256
Encephalopathy Autoimmune Evaluation, Serum (See Std Prof Ref Lab)	86255 x 19 86341	If IFA is indeterminate. If IFA pattern suggests CRMP-5-IgG If IFA pattern suggests Amphiphysin Ab If IFA pattern suggests NMDA-R and NMDA-R Ab CBA, Serum is positive If IFA pattern suggests AMPA R and AMPA-R Ab CBA, Serum is positive If IFA pattern suggests GABA B R and GABA B-R Ab, Serum is positive If IFA pattern suggests GFAP Ab If IFA pattern suggests DPPX Ab If IFA pattern suggests mGluR1 Ab If CASPR2 R Ab CBA is positive If IFA pattern suggests AGNA-1 Ab If IFA pattern suggests ANNA 1 Ab If IFA pattern suggests ANNA 2 Ab If IFA pattern suggests PCA-1 Ab If IFA pattern suggests PCA-Tr Ab If IFA pattern suggests IgLON5 Ab If IFA pattern suggests NIF Ab	CRMP-5-IgG Western blot, ACh receptor (muscle) binding Ab Amphiphysin Immunoblot NMDA-R Ab IF titer AMPA-R Ab IF titer, CRMP-5-IgG Western Blot ACh R (muscle) binding Ab GABA-B-R Ab IF titer GFAP IFA titer and GFAP CBA DPPX Ab CBA and DPPX titer mGluR1 Ab CBA and mGluR1 titer CRMP-5-IgG Western Blot, ACh R (muscle) binding Ab AGNA-1 immunoblot ANNA-1 immunoblot ANNA-2 immunoblot PCA-1 immunoblot PCA-Tr immunoblot IgLON5 IFA titer and IgLON5 CBA alpha internexin CBA, NIF heavy chain CBA, NIF light chain CBA, and NIF titer	84182 83519 84182 86256 86256 86256 86256 86256 86256 86256 86256 84182 84182 84182 84182 86256 86255 86255 86255 86256 84182 84182 84182 84182 86256 86255 86255 86255 86256 86256 86256

STANDARD REFLEX/CONFIRMATION TESTS - 2024

Initial Test	CPT Code	Reflex Criteria	Reflex Test	CPT Code
Endomysial Antibodies, Serum	86231	If result is positive	Endomysial Antibody Titer	86231
Ethylene Glycol	82693	If result is greater than or equal to 10 mg/dl on initial testing	Ethylene Glycol Confirmation	82693
Extractable Nuclear Antigens (ENA) Screen	86235	If screen is positive	RNP Ab Scl 70 Jo 1 Sm Ab SSA Ab SSB Ab	86235 86235 86235 86235 86235 86235
Extrinsic Thromboelastography	85396	LY30 \leq 85%	Lysis Inhibited Thromboelastography	85396
Fentanyl, Urine	80307	If screen is positive	Fentanyl Conf MS Urine. The confirmation may identify one or more of the following: Fentanyl, Norfentanyl, Acrylfentanyl, Acetyl fentanyl, Furanyl fentanyl, Xylazine	80354 (G0480)
Fetal Screen (Hemoglobin/RBC Fetal Rosette)	85461	If fetal screen is positive	Fetal Red Cell Percentage by Flow Cytometry	86356
Fetal RBC Screen- Flow	85461	After hours Fetal RBC testing when flow is not available	Kleihauer Betke Prep	85460
Glucose-6-Phosphate Dehydrogenase (G6PD), Screening Blood	82960	Deficient G6PD screen	Glucose-6-Phosphate Dehydrogenase (G6PD) Quant, Erythrocytes	82955
Heavy Metals Screen, with reflex, 24 hour urine (See Std Prof Ref Lab)	82175 82300 83825 83655	If the total Arsenic concentration is 10 mcg/L or greater	Arsenic Fractionation, 24 hour urine	82175
Hemoglobin Analysis	83020	If abnormal C or S fraction is identified, first time patient If other abnormal hemoglobin fraction is identified, first time patient	Acid Gel Electrophoresis Acid Gel Electrophoresis Alkaline Gel Electrophoresis	83020 83020 83020
Hepatitis B Surface Antigen	87340	If Hepatitis B Surface Antigen is positive	Hepatitis B Surface Antigen Confirmation	87341
Hepatitis C Ab (Anti-HCV)	86803	If Hepatitis C Virus serologic testing is reactive	Hepatitis C Virus (HCV) RNA RT-PCR	87522
Hepatitis C Virus (HCV) Genotype	87902	If Hepatitis C Virus has a viral load of >100 copies/mL within last 30 days	Hepatitis C Virus (HCV) RNA Quant.	87522
Herpes Simplex Virus (HSV) Antibody IgM	86694	If HSV Ab IgM is positive	HSV Ab IgM by IFA	86694
HIT-Ab PF4 with Reflex to Serotonin Release Assay (SRA)	86022	If the first HIT-Ab result during a single hospitalization is positive (>1.0 LIA Units)	Serotonin Release Assay	86022
HIV-1 Genotyping Drug Resistance	0219U	If HIV-1 viral load if >1000 copies/mL within last 30 days	HIV-1 DNA Quantitative	87536
HIV-1/HIV-2 Antibody +p24 antigen	87389	If positive	HIV 1 Differentiation Geenius HIV 2 Differentiation Geenius	86701 86702
HLA-B*15:02 typing for carbamazepine sensitivity	81374	Suspected MPN (BCR/ABL neg, JAK2 V617F neg) that are negative for CALR insertions or deletions	HLA B locus high resolution typing	81381
HLA-B*57:01 typing for abacavir sensitivity	81374	If HLA B*57 is present by Low Resolution typing	HLA B locus high resolution typing	81381
HLA-B*58:01 typing for allopurinol sensitivity	81374	If HLA B*58 is present by Low Resolution typing	HLA B locus high resolution typing	81381
HLA-DQB1*06:02 typing for narcolepsy susceptibility	81375	If HLA DQB1*06 is present by Low Resolution typing	HLA DQB1 locus high resolution typing	81383
HLA-typing for vaccine trial eligibility	81374	If HLA antigen is present by Low Resolution typing	HLA A locus high resolution typing	81381
HLA Class I and Class II Single Antigen (SAB) Antibody Screen	86832 86833	If unusual antibody pattern by SAB	HLA Phenotype (PRA) Antibody Screen	86828
HLA Class I and Class II Single Antigen (SAB) Antibody Screen	86832 86833	If a historic serum or surrogate flow crossmatch is required to determine recipient/donor compatibility based upon an unusual single antigen antibody screen pattern	HLA T and B Cell Halfaster Flow Crossmatch	86825 86826
HLA Low Resolution Class I and II DNA Typing	81370 81376 x2	If a renal living donor is selected to donate kidney, high resolution NGS typing is reflexed at the time of final crossmatch	High Resolution Class I and II DNA Typing by NGS	81378 81382x4
HTLV 1-2 Antibody	86790	If HTLV 1-2 Ab is positive	HTLV Confirmation	86689
HPV DNA Detection by PCR, Qualitative	87624	HPV positive	Cytology	88142
HPV High Risk (ID 16,18,45)	87623 87624	If not 16,18,45 then	HPV Genotyping	87625
Infliximab Quantitation with Reflex to Infliximab Antibodies to Infliximab	80230	If Infliximab level <5.1	Infliximab Antibodies	82397
Lipid Panel	80061	If triglyceride is \geq 400	Direct LDL	83721
Lupus Anticoagulant Panel	85670 85613 85732	If there are prolonged screen results	dRVVT 50:50 dRVVT Confirm SCT Confirm SCT 50:50	85613 85613 85732 85732
Lupus Anticoagulant Panel	85670 85613 85732	If, during the anticoagulation rule out, an elevated Thrombin Time does not correct when the Thrombin Time correction is run	Fibrinogen	85384
Lyme Disease Antibody, Serum or CSF (See Std Prof Ref Lab)	86618	If result is reactive	Lyme Disease Antibody, Western Blot	86617 x2

STANDARD REFLEX/CONFIRMATION TESTS - 2024

Initial Test	CPT Code	Reflex Criteria	Reflex Test	CPT Code
Methadone, Urine	80307	If result is positive	Methadone Confirmation	80358 (G0480)
Mitochondrial Antibody	86381	If result is positive	Mitochondrial Ab Titer	86381
MS Profile, CSF and Serum	83521	If kappa free light chain is >0.0600	Oligoclonal Bands	83916 x2
Myasthenia Gravis Evaluation, Adult	83519	If AChR binding Ab is positive If AChR binding Ab is negative	AChR Modulating Ab MuSK Autoantibody	83519 86255
Mycobacterium tuberculosis (MTB), PCR	87556	If PCR is ordered without Mycobacteriology culture	Mycobacteriology culture	87116
Mycoplasma pneumoniae IgM, IgG Serum	86738 x2	If IgM is reactive or equivocal	Mycoplasma pneumoniae, Ab IgM by IFA	86738
Myelin Oligodendrocyte Glycoprotein (MOG FACS, Serum)	86363	If result is positive	MOG FACS Titer, Serum	86363
Neuromyelitis Optica, IgG, CSF (NMO FACS CSF)	86053	When results require further evaluation	NMO/AQP4 FACS Titer, CSF	86053
Neuromyelitis Optica, IgG, Serum (NMO FACS, Serum)	86053	When results require further evaluation	NMO/AQP4 FACS Titer, Serum	86053
Opiates, Urine	80307	If screening is positive	Opiates Conf MS Ur May identify one or more of the following 6-acetylmorphine, codeine, hydrocodone, hydromorphone, morphine	80361(G0480) 80356(G0480)
Oxycodone, Urine	80307	If screening is positive	Oxycodone Conf MS Ur May identify one or more of the following Oxycodone, oxymorphone	80365(G0480)
Paraneoplastic Autoantibody Evaluation, Serum (See Std Prof Ref Lab)	83519 x2 86255 x9 86596	If IFA is indeterminate If IFA pattern suggests CRMP-5-IgG If IFA pattern suggests GAD65 Ab If IFA pattern suggests Amphiphysin Ab If IFA pattern suggests NMDA-R If IFA pattern suggests AMPA-R If IFA pattern suggests GABA-B-R If VGKC >0.00 nmol/L If IFA pattern suggest DPPX If IFA pattern suggests mGluR1 Ab If IFA pattern suggests AGNA-1 Ab If IFA pattern suggests ANNA-1 Ab If IFA pattern suggests ANNA-2 Ab If IFA pattern suggests PCA-1 Ab If IFA pattern suggests PCA-Tr Ab	CRMP-5-IgG Western blot, ACh R (muscle) binding and modulating Ab GAD65 Ab RIA Amphiphysin immunoblot NMDA-R Ab CBA and/or NMDA-R Ab IF titer AMPA-R Ab CBA and/or AMPA-R Ab IF titer GABA-B-R Ab CBA and/or GABA-B-R Ab IF titer LG11-IgG CBA, S and CASPR2-IgG CBA, S DPPX Ab CBA and DPPX Ab titer mGluR1 Ab CBA and mGluR1 Ab titer AGNA-1 Immunoblot ANNA-1 Immunoblot ANNA-2 Immunoblot PCA-1 Immunoblot PCA Tr Immunoblot	84182 83519 86255 86341 84182 86255 86255 86255 86255 86255 x 2 86255 86255 86255 86255 86255 86255 84182 84182 84182 84182
Paraneoplastic Autoantibody Evaluation, Spinal Fluid (See Mayo Std Prof Ref Lab)	86255 x9	If IFA pattern suggests CRMP-5-IgG If IFA pattern suggests GAD65 Ab If IFA pattern suggests Amphiphysin Ab If IFA pattern suggests NMDA-R If IFA pattern suggests AMPA-R If IFA pattern suggests GABA-B-R If IFA pattern suggests neuronal VGKC autoantibody If VGKC > 0.00 nmol/L If IFA pattern suggests DPPX If IFA pattern suggests mGluR1 If IFA pattern suggests AGNA-1 Ab If IFA pattern suggests ANNA-1 Ab If IFA pattern suggests ANNA-2 Ab If IFA pattern suggests PCA-1 Ab If IFA pattern suggests PCA-Tr Ab	CRMP-5-IgG Western blot GAD65 Ab RIA Amphiphysin immunoblot NMDA-R Ab CBA and/or NMDA-R titer AMPA_R Ab CBA and/or AMPA-R titer GABA-B-R Ab CBA and/or GABA B R titer VGKC-Complex Ab RIA LG11 IgG CBA and CASPR2-IgG CBA DPPX Ab CBA and DPPX titer mGluR1 Ab CBA and mGluR1 titer AGNA-1 immunoblot ANNA-1 immunoblot ANNA-2 immunoblot PCA-1 immunoblot PCA-Tr immunoblot	84182 86341 84182 86255 86256 86255 86255 83519 86255 x 2 86255 86255 86255 86255 86255 84182 84182 84182 84182
Partial Thromboplastin Time	85730	Low Delta mAbs (below 15)	Fibrinogen	85384
Peanut IgE	86003	If <5.00	Peanut Component 2	86003
Phencyclidine, Urine	80307	If result is positive	Phencyclidine Confirmation	83992
Porphyryns Total, Plasma	84311	If total porphyrins are > 1.0 mcg/dL	Porphyryns Fractionation Plasma	82542
Prenatal Antibody Screen (Component of Obstetric Panel)	86850	If screen is positive, an antibody identification will be performed and the following may be performed as required	Antibody Identification Antibody Titer Absorption Elution Antigen testing, RBC other than ABO or RhD Patient red cell phenotyping Inhibition/Neutralization Pretreatment of RBCs for antibody id with drugs	86870 86886 86978 86860 86905 86906 86977 86970

STANDARD REFLEX/CONFIRMATION TESTS - 2024

Initial Test	CPT Code	Reflex Criteria	Reflex Test	CPT Code
Protein/Creatinine, Urine	84156	If specimen is random (non 24-hour)	Creatinine	82570
Prothrombin Time	85610	Low Delta mAbs (below 15)	Fibrinogen	85384
Prothrombin Time	85610	First Reflex criteria If INR >9.0 Second Reflex criteria If the TT result is >25 seconds	aPTT Thrombin Time Thrombin Time Correction	85730, 85670 85670
Rotem Thromboelastography	85396	ROTEM testing ordered and no specific tests selected on order	ExTem and FibTem	85396
RPR, Qualitative	86592	If result is reactive	RPR Quantitative Treponemal Ab	86593 86780
Smooth Muscle Antibody	86015	If screen is positive	Smooth Muscle Antibody Titer	86015
Stain, Acid Fast	87206	If stain is positive on a respiratory specimen	Mycobacterium tuberculosis direct amplified probe technique	87556
Stain, Gram	87205	If fungal elements or branching filamentous organisms are seen on Gram stain and fungus culture was not ordered	Culture, Fungal (Mycology)	87102
Thrombin Time	85670	If thrombin time is >25 seconds	Thrombin Time protamine corrected	85670
Thyroglobulin Reflex To MS or IA	86800	If Thyroglobulin Ab is <1.8 IU/mL If Thyroglobulin Ab is > or =1.8 IU/mL	Thyroglobulin performed by IA Thyroglobulin performed by MS	84432 84432
Thyroid Function Cascade	84443	If TSH is < 0.30 or > 4.20	Free T4 Free T3	84439 84481
Toxoplasma IgG, IgM	86777 86778	If Toxoplasma IgM is positive	Toxoplasma IgM Confirmation	86778
Toxoplasma IgM	8.677, 786, 778	If Toxoplasma IgM is positive	Toxoplasma IgM Confirmation	86778
Troponin I	84484	If Troponin I hs Delta result is \geq 20 ng/L or % (significant) for a timed sample (2hr, 4hr, or 6hr) a lipid panel is performed. Any subsequent significant value does not reflex to a lipid panel	Lipid Panel	80061
TTG IgA	86364	If IgA deficient	TTG IgG	86364
Type and Screen	86900 86901 86850	If Barnes-Jewish Hospital patient scheduled for surgery with autologous blood ordered/collected/available in BJH blood bank	Crossmatch Immediate Spin Crossmatch IgG Crossmatch Electronic	86920 86922 86923
Urine Reflex to Microscopic if Indicated B TX RX Immediate BJH	81003	If there are abnormal dipstick findings for Blood, Protein, Nitrite, Leukocyte Esterase	Urine Microscopy	81015
Urine Reflex Microscopic and Culture if Indicated	81003	If there are abnormal dipstick findings (Protein \geq +, any Blood Nitrite or Leukocyte esterase), then #3117 Urine Microscopic will be performed at an additional charge. In patients with ANC < 4, a microscopic and culture will be performed. If ANC \geq 0.4 and WBC's > 10hpf, a #M052 Culture, Routine, AEROBE will be performed at an additional charge.	Urine Microscopy Urine Culture	81015 87086
Macro UA Reflex Microscopic if Indicated	81003	If there are abnormal dipstick findings for Blood, Protein, Nitrite, Leukocyte Esterase	Urine Microscopy	81015
Vasculitis Ab Screen w/ Reflex to ANCA	83876 83520	If MPO or PR3 are \geq 1 AI then Antineutrophil cytoplasmic antibodies (ANCA) will be performed	ANCA qualitative ANCA, Quantitative	86036 86037
VDRL, Qualitative, CSF	86592	If test is reactive, weak reactive, or negative rough,	Quantitation	86593
Vedolizumab Quantitative, Serum	80280	When Vedolizumab results are 15.0 mcg/mL or less	Vedolizumab Antibody	82397
Volatiles Screen, Serum	80320 (84600)	Quantitation of positive analytes	Acetone Quantitation Ethanol Quantitation Isopropanol Quantitation Methanol Quantitation	80320 (84600) 82077 (84600) 80320 (84600) 80320 (84600)
von Willebrand Factor Activity	85245	If screen result is < 50%	VWF GPIIbM Activity	85397

Standard Profiles - Performed at Barnes-Jewish Hospital Laboratory - 2024		
Test Name	Components	CPT Code
ABO/Rh	ABO Typing Rh Typing	86900 86901
ABO Titer	ABO Type Rh Type Indirect Coombs Titer	86900 86901 86886
ACTH (Cortrosyn®) Stimulation Test	ACTH Stimulation Panel Cortisol	80400 82533
ACTH (Cortrosyn®) Stimulation Test, Single Test, Plasma	ACTH Stimulation Panel, Cortisol	82533
Anti-Phospholipid	Cardiolipin IgG Cardiolipin IgM Beta-2 Glycoprotein 1 IgG Beta-2 Glycoprotein 1 IgM	86147 86147 86146 86146
Blood Gas (Umbilical Cord)	Blood Gas Lactate (Whole Blood)	82803 83605
BMT Donor Evaluation (NBTC)	HBSAg HBcAb HCV HIV1/2 HTLV I/II RPR Donor HIV NAT HCV NAT WNV NAT CMV Donor Chagas	87340 86704 86803 86703 86790 86592 87535 87521 87798 86644 86753
Cardiolipin IgG, IgM	Cardiolipin IgG Cardiolipin IgM	86147 86147
Celiac Screen	Anti TTG, IgA Gliadin Ab IgA Anti TTG IgG Gliadin Ab IgG	86364 86258
Clostridium difficile	Glutamate dehydrogenase (GDH) Toxin A and B	87449 87324
Complete Blood Count-Bone Marrow Transplant (CBC BMT) performed on bone marrow transplant patients)	CBC without Diff Manual Differential	85027 85007
Cord Blood Evaluation	ABO Type Rh Type IgG DAT only	86900 86901 86880
Cryptococcal Antigen (CSF)	Fungal Culture Cryptococcal Antigen	87102 87899
Culture, Fungal (Mycology)	Fungal Culture Fungal Stain (based on specimen type)	87102 87210
	Susceptibility (based on organism isolated and antibiotic requested) Disk Diffusion Microdilution Macrobroth Dilution Proportion Method	87184 87186 87188 87190
	Identification Blastomyces PCR, amplified Coccidioides PCR, amplified Histoplasma PCR, amplified Yeast Identification Mold Identification Sequencing PCR Nocardia Identification by other Method	87150 x2 87150 87150 x2 87106 87107 87153 87158
Culture, Fungal (Mycology) (CSF)	Fungal Culture Cryptococcal Antigen	87102 87899
	Susceptibility (based on organism isolated and antibiotic requested) Disk Diffusion Microdilution Macrobroth Dilution Proportion Method	87184 87186 87188 87190
	Identification Blastomyces PCR Coccidioides PCR Histoplasma PCR Yeast Identification Mold Identification Sequencing PCR Nocardia Identification by other Method	87150 x2 87150 87150 x2 87106 87107 87153 87158

Standard Profiles - Performed at Barnes-Jewish Hospital Laboratory - 2024		
Test Name	Components	CPT Code
Culture, Mycobacteriology	Mycobacteriology Culture Concentration (based on specimen type) Acid-Fast Stain (based on specimen type)	87116 87015 87206
	Susceptibility (based on organism isolated and antibiotic requested) Disk Diffusion Microdilution Macrobroth Dilution Proportion Method	87184 87186 87188 87190
	Identification Mycobacterium (based on organism isolated) Biochemical or MALDI PCR Sequencing PCR	87118 87149 87153
Culture, Routine (Aerobe and/or Anaerobe)	Routine Aerobe Culture, Stool Routine Aerobe Culture, Stool (additional) Shiga Toxin Routine Aerobe Culture, Urine Routine Aerobe Culture, any other source Routine Aerobe Culture, Quantitative Anaerobe Culture, any other source Broad Range Bacterial PCR Sequencing (Valve) Gram Stain (based on specimen type)	87045 87046 x2 87899 x2 87086 87070 87071 87801 87798 87150 87075
	Susceptibility (based on organism isolated) Disk Diffusion Agar Dilution Enzyme Detection PBP2a Detection Microdilution Carba-R PCR	87184 87181 87185 87147 87186 87798
	Identification Aerobe Anaerobe Yeast Mold	87077 87076 87106 87107
Culture, Routine (Blood)	Blood Culture	87040
	Susceptibility (based on organism isolated) Disk Diffusion Agar Dilution Enzyme Detection PBP2a Detection Microdilution Carba-R PCR	87184 87181 87185 87147 87186 87798
	Identification Aerobe Anaerobe Yeast Mold	87077 87076 87106 87107
Culture, Candida (yeast)	Candida (yeast) Culture	87102
	Susceptibility (based on organism isolated) Agar Dilution	87186
	Identification Yeast Identification Sequencing PCR	87106 87153
Cytomegalovirus (CMV), IgG and IgM	CMV IgG CMV IgM	86644 86645
Direct Coombs Battery (Direct Antiglobulin Profile)	Direct Coombs IgG Direct Coombs C3	86880 86880
Drug Screen with or without confirmation (Drug of Abuse Screen, Urine)	Amphetamines, class Barbiturates, class Benzodiazepines, class Cannabinoids Cocaine Metabolite Opiates, class Oxycodone Phencyclidine Fentanyl Methadone	80307

Standard Profiles - Performed at Barnes-Jewish Hospital Laboratory - 2024		
Test Name	Components	CPT Code
Electrolyte Panel, Blood	Chloride	82435
	Potassium	84132
	Sodium	84295
	Carbon Dioxide-CO2 (calculated, no charge)	
Electrophoresis, Protein, 24 Hour Urine	Volume measurement	81050
	Electrophoretic fractionation other fluids	84166
	Immunofixation electrophoresis other fluids	86335
Epstein Barr Virus (EBV) Antibody Panel, Serum	EBV Capsid IgG, EBV Capsod IgM, EBV Nuclear Antigen IgG	86665 x2 86664
	Glucose tolerance - 3 specimens	82951
Glucose Tolerance Test, 100 gram, Gestational	Glucose tolerance, each additional specimen	82952
Glucose Tolerance Test, 75 gram, Non-Gestational	Glucose, quantitation	82947
	Glucose, post glucose dose	82950
GC/Chlamydia Nucleic Acid Amplification Test	GC Nucleic Acid Amplification Test	87591
	Chlamydia Nucleic Acid Amplification Test	87491
Hematologic Molecular Algorithm	See provided document for potential testing to be performed on patient's for which this test is ordered	Varies
Immune Competence Assessment	CD3,CD3 ABS	86359
	CD4, CD4 ABS, CD8,CD8 ABS, CD4/CD8 Ratio	86360
	CD19, CD19 ABS	86355
	CD16+CD56, CD 16+56 ABS	86357
Immune Deficiency Assessment	CD4%, CD4 ABS, CD8%, CD8 ABS, CD4/CD8 Ratio	86360
Immunoglobulin Free Light Chains	Kappa free light chain	83521
	Lambda free light chain	83521
	Kappa/Lambda FLC Ratio	
Immunoglobulin Profile	IgG	82784 x3
	IgA	
	IgM	
Intra-petrosal Sinus Sampling	ACTH x15	82024 x15
Iron Profile	Iron	83540
	Iron Binding Capacity	83550
Lupus Anticoagulant Panel with Reflexes	Thrombin Time	85670
	dRVVT Screen	85613
	SCT Screen	85732
Lymphocyte Subpop 7	CD2	86356
	CD3	86359
	CD4, CD8, CD4/CD8 Ratio	86360
	CD16+CD56	86357
	CD19	86355
	HLA-DR (Activated T-Cells), Total HLA-DR	86356
Lymphocyte Subpop 13	CD2	86356 x6
	CD3	86359
	CD4, CD8, CD4/CD8 Ratio	86360
	CD 16, CD16+CD56	86357 x2
	CD19, CD40	86355 x2
	HLA ABC, HLA-DR (Activated T-Cells), TCR-Alpha/Beta, TCR-Gamma/Delta, Total HLA-DR, Beta-2 Microglobulin	86356 x4
	Norovirus serogroup I (GI)	87798 x2
Norovirus Serogroup II (GII)		
Pain Management Profile	Drug Screen	80307
	Targeted Opiod	80364

Standard Profiles - Performed at Barnes-Jewish Hospital Laboratory - 2024		
Test Name	Components	CPT Code
Parasites Complete Microscopic Ova and Parasite Exam	Cryptosporidium Antigen Giardia Antigen	87328 87329
Parasites, Malaria and/or Babesia	Malaria Stain Malaria Antigen	87207 87899
Parasites, Screen for Giardia lamblia and Cryptosporidium species	Cryptosporidium Antigen Giardia Antigen	87328 87329
Partial Thromboplastin Time (PTT) 50 50 Mix	PTT Activated Straight PTT Activated 50 50 PTT 1 Hour Activated 50 50	85730 85732 85732
Platelet Aggregation	Platelet Aggregation, each	85576 x5
Platelet Function Screen	Collagen/Epinephrine Collagen/ADP	85576 85576
Prothrombin Time (PT) 50 50 Mix	Prothrombin Time Prothrombin Time Fractionation	85610 85611
Rh Ig Antenatal	Antibody Screen RBC ABO Typing Rh Typing	86850 86900 86901
Rh Ig Post Partum	Fetal RBC Screen ABO Typing Rh Typing	85461 86900 86901
Stain, Acid Fast	Acid Fast Stain Mycobacteriology Culture Concentration, (based on specimen type)	87206 87116 87015
Stain, Fungal	Fungal Stain Fungus Culture	87210 87102
Stain, Gram	Gram Stain Routine Aerobe Culture, Stool Routine Aerobe Culture, Stool (additional) Routine Aerobe Culture, Urine Routine Aerobe Culture, any other source (non-blood)	87205 87045 87046 x2 87086 87070
Toxoplasma IgG and IgM	Toxoplasma, IgG Toxoplasma, IgM	86777 86778
Type and Screen, Blood	Antibody Screen RBC ABO Typing Rh Typing	86850 86900 86901
24 Hour Urine-Timed Measurement	Urine timed measurement is performed per 24 hour collection	81050

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Barnes-Jewish Hospital

BJC HealthCare

Department of Laboratories

Profile Justification

Test name: Hematologic Molecular Algorithm

Profile Components: See attached algorithm workflows

CPT Code: Varies

Justification for Profile:

All orders submitted to the MDL for inpatient and outpatient hematologic malignancy testing are assessed for appropriateness based on correlation with new and existing clinical data. This approval process applies only to bone marrow aspirates and peripheral blood specimens and only to the specific molecular diagnostic orders detailed within the algorithm below. The laboratory medicine resident or fellow (LMR) will be responsible for the triaging of orders with oversight from the Medical Director.

Summary of Hematologic Molecular Algorithm (HMA) approvals for both inpatients and outpatients:

- A. MyeloSeq will be ordered in
 1. New AML Diagnosis
 2. Prior AML Diagnosis
 - i. With active disease (blasts > 10%) and no prior genetic panel testing
 - ii. With relapse
 3. New MDS Diagnosis

Note: For pre and post-transplant milestones (30d, 100d, 180d, 365d), MyeloSeq must be ordered separately from the HMA
- B. ChromoSeq (inpatient only) will be ordered in
 1. New AML Diagnosis
 2. New Relapse of AML
 3. New High-Risk MDS Diagnosis
- C. *FLT3* will be ordered in
 1. New Diagnosis of AML
 2. New Relapse of AML

Note: *FLT3* is not recommended for monitoring MRD as sensitivity is near 5%.
- D. *BCR/ABL* p210 quantitative PCR will be ordered in
 1. Monitoring of prior p210-positive leukemia
 2. New *BCR/ABL* FISH positive disease (with reflex to p190 if negative)

Note: Specific (non-HMA) *BCR/ABL* p210 orders will not be switched to p190 orders by the lab without approval from the treating team.
- E. *BCR/ABL* p190 quantitative PCR will be ordered in
 1. Monitoring of prior p190-positive leukemia
 2. New *BCR/ABL* FISH positive disease (with negative p210)

Note: Specific (non-HMA) *BCR/ABL* p190 orders will not be switched to p210 orders by the lab without approval from the treating team.

- F. Rearrangement-specific quantitative PCR (currently limited to *PML/RAR α* , *CBFB/MYH11*, *RUNX1/RUNX1T1*) will be ordered in
 1. Monitoring of prior PCR-positive leukemia
 2. New FISH positive disease with indicated rearrangements

- G. ******Nationwide Children's Hematologic Cancer Fusion Analysis (Archer Dx) will be ordered from peripheral blood (preferred) or bone marrow aspirate in
 1. New Philadelphia Negative B-Cell leukemia with >10% blasts
 - i. Additionally requires normal cytogenetics:
 - a. Lack of hyper- or hypodiploidy
 - b. Lack of *CRLF2* or *KMT2A* rearrangements

- H. ******Tempus xT gene panel (currently 648 genes) will be ordered in lymphoid leukemias **without** hyper- or hypodiploidy or FISH rearrangements in *BCR/ABL* or *KMT2A* in cases of a
 1. New diagnosis of B/T-Cell Leukemia
 2. Relapse of B/T-Cell Leukemia
 3. Prior diagnosis of lymphoid leukemia with active disease (blasts > 10%) and no prior panel testing
 4. To investigate *JAK2* Exon 16 variants in *CRLF2* rearranged ALL

- I. *******IGHV* hypermutation by NGS (in-house) and *TP53* sequencing (sent to Versiti) will be ordered in
 1. New diagnosis of CLL only

******If HMA indicates testing for Tempus xT, RNA Fusion Analysis, or *IGHV* hypermutation/*TP53* sequencing, the clinician will be asked for confirmation.

Please see attached HMA ordering flowchart for a graphical summary of this document.

Orders for genomic panels without an HMA order

ClonoSeq

Pt Status	Specimen	Routing	Notes	Ordering
Outpatient	PB	Sent directly by outpatient clinic	If received by lab, will be returned to clinic	All orders and insurance information placed by clinical team in Adaptive Portal. Any test cancelations will be communicated to clinical team.
	BM	Sent to MDL	If BM Biopsy Negative, and indication* met, MDL will send out	
Inpatient	PB		Please use MISC Molecular order (LAB9779)	
	BM	If BM Biopsy Negative, and indication* met, MDL will send out; results scanned into EPIC by MDL		

*Indications

ClonoSeq sent on BM only if

- ALL (B or T) pre-transplant/CAR-T or post (30d, 100d, 180d, 365d) or
- MM pre-transplant or post (100d, 1y, 2y) with VGPR or better

ClonoSeq sent on PB only if

- NHL or DLBCL pre-transplant/CAR-T or post (30d, 100d, 180d, 365d)

MyeloSeq

Pt Status	Specimen	Routing	Approval
Outpatient	PB	Sent directly by outpatient clinic	MDL will auto-approve outpatient testing if received in lab
	BM		
Inpatient**	PB	Sent to MDL	PB not acceptable for pre/post transplant monitoring; Requires confirmation of necessity prior to approval
	BM		If BM Biopsy Negative and milestone indication* met, then MDL will approve

*Only if pre-transplant or post (30d, 100d, 180d, 365d)

** For inpatients at non-milestone time points, MSQ will only be sent on a confirmed diagnosis of AML, relapsed AML, or active AML without prior panel testing. For investigation of unexplained cytopenias or marrow failure, the clinical team must provide justification for inpatient testing.

Tempus xT and Heme Fusion (Nationwide Children's RNA fusion analysis)

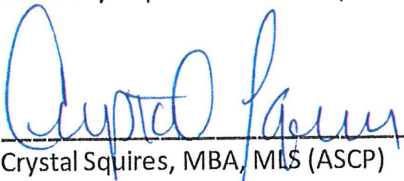
Requires additional justification for inpatients if not clear from progress notes

Hereditary Cancer Panels (University of Chicago)

Sent only on cultured fibroblasts without need for additional justification, unless designated panel does not cover intended targets.

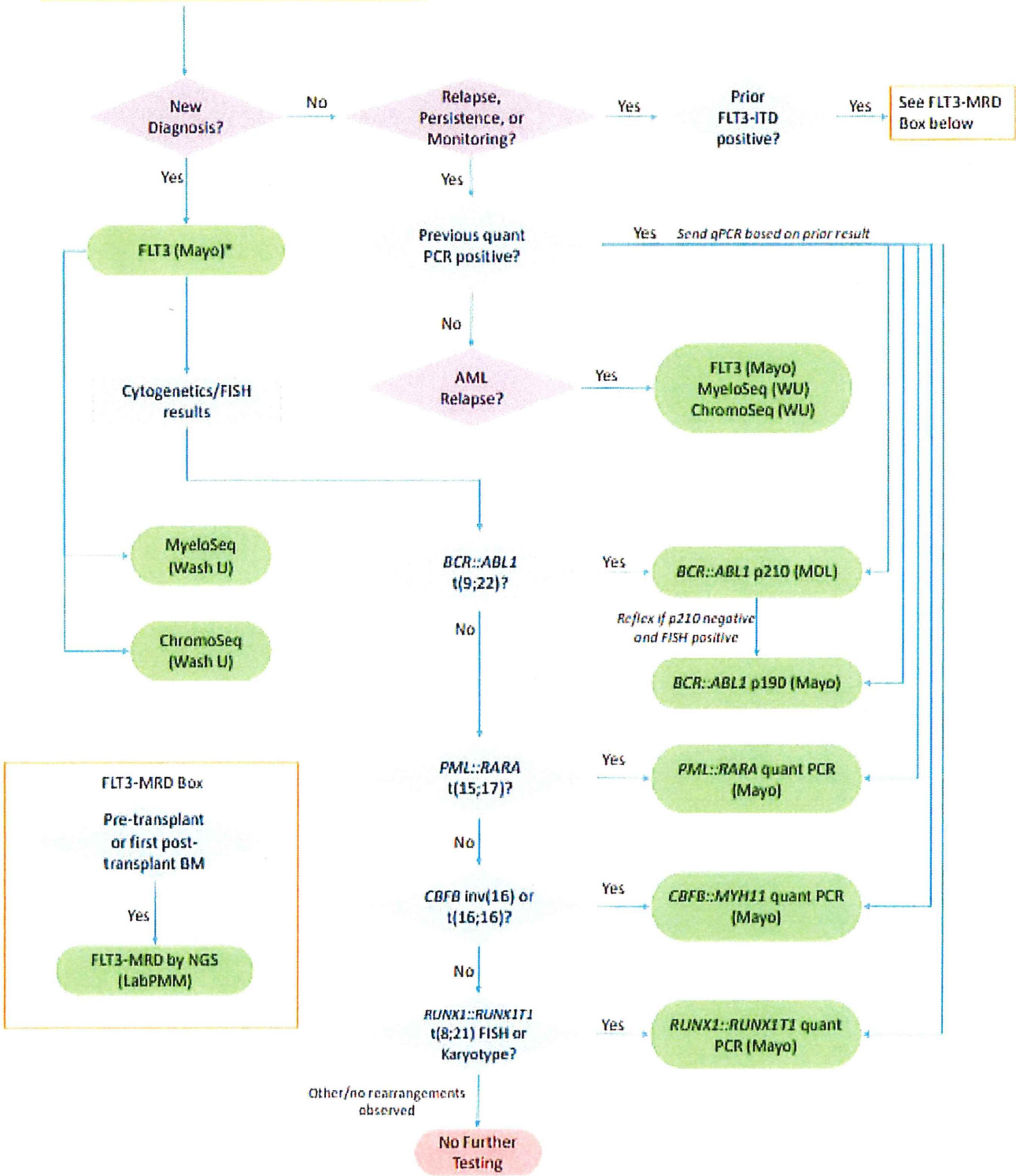
Literature references:

1. Patel JP, Levine RL: How do novel molecular genetic markers influence treatment decisions in acute myeloid leukemia? Hematology Am Soc Hematol Educ Program 2012;2012:28-34
2. Lindsley RC, Ebert BL: The biology and clinical impact of genetic lesions in myeloid malignancies. Blood 2013;23:3741-3748
3. Patel JP, Gonen M, Figueroa ME, et al: Prognostic relevance of integrated genetic profiling in acute myeloid leukemia. N Engl J Med 2012;366:1079-1089
4. Haferlach T, Nagata Y, Grossman V, et al: Landscape of genetic lesions in 944 patients with myelodysplastic syndromes. Leukemia 2014;28:241-247
5. Vainchenker W, Delhommeau F, Constantinescu SN, Bernard OA: New mutations and pathogenesis of myeloproliferative neoplasms. Blood 2011;118:1723-1735

Manager:  _____ Date: 12/13/23
Crystal Squires, MBA, MLS (ASCP)

Medical Director:  _____ Date: 12/13/13
Bijal Parikh, MD, PhD, FCA

Acute Myeloid Leukemia

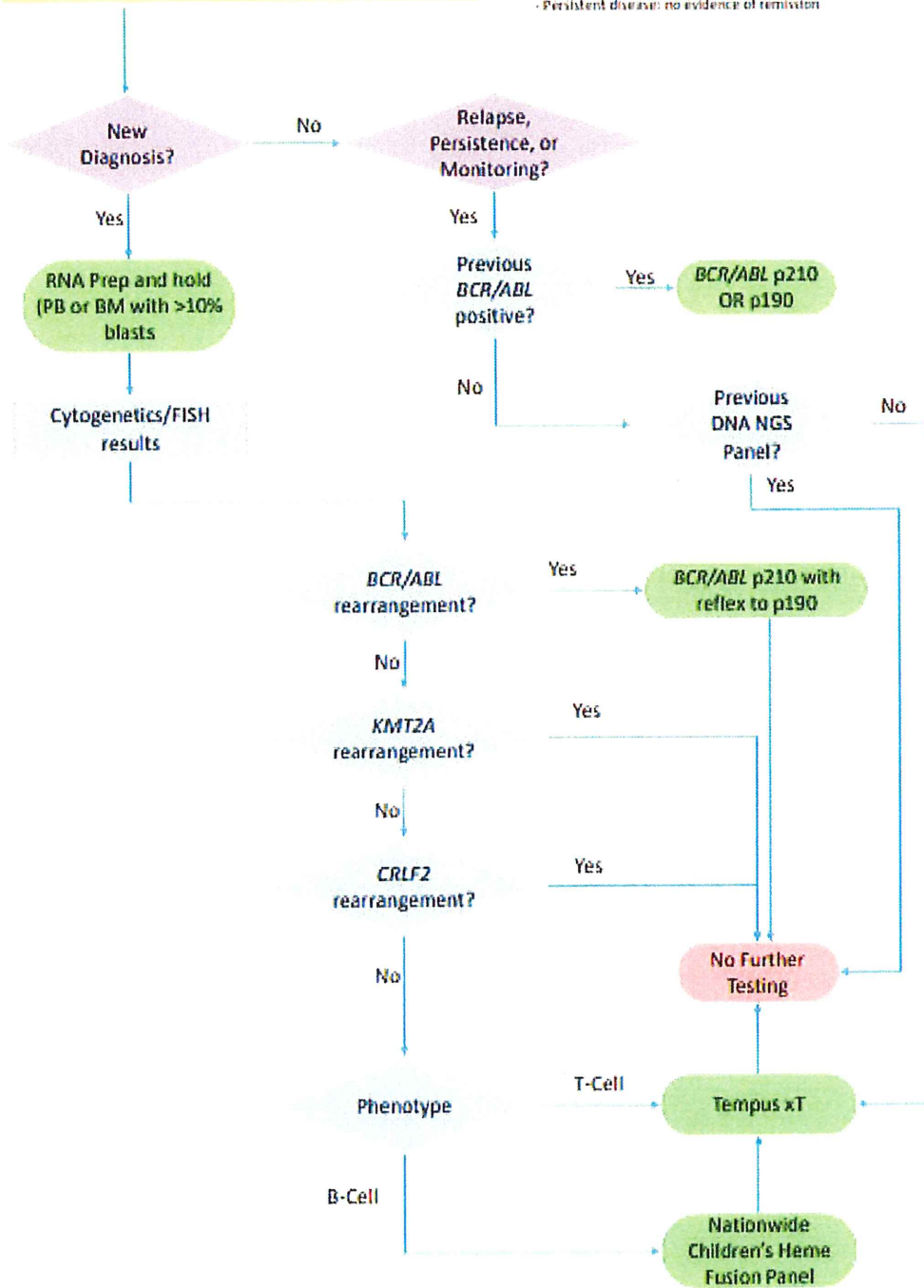


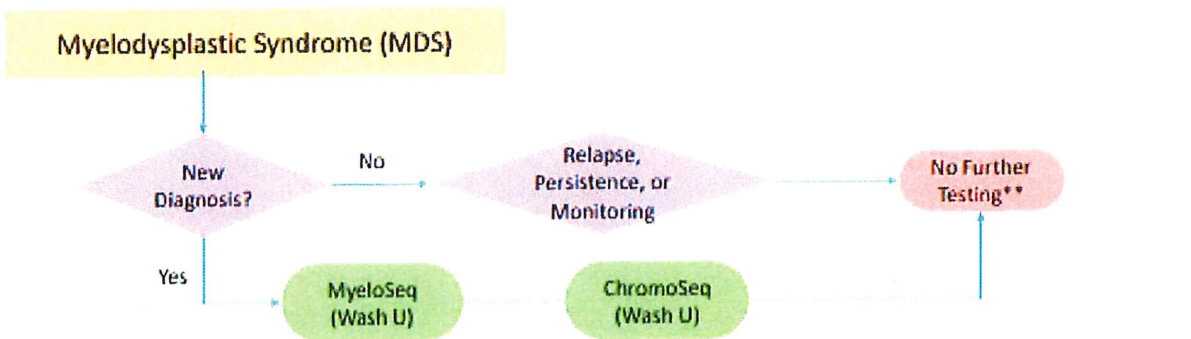
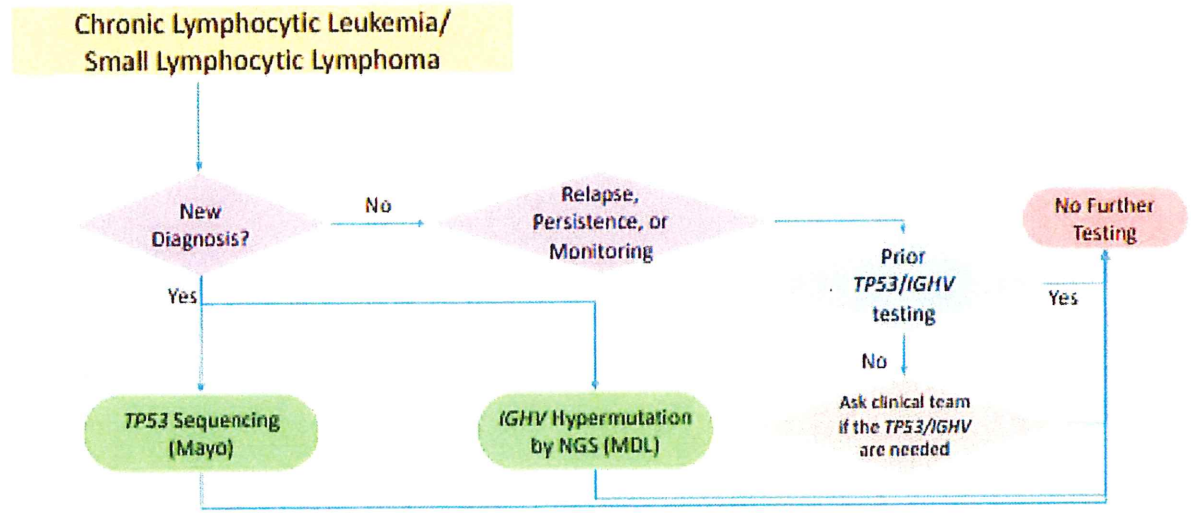
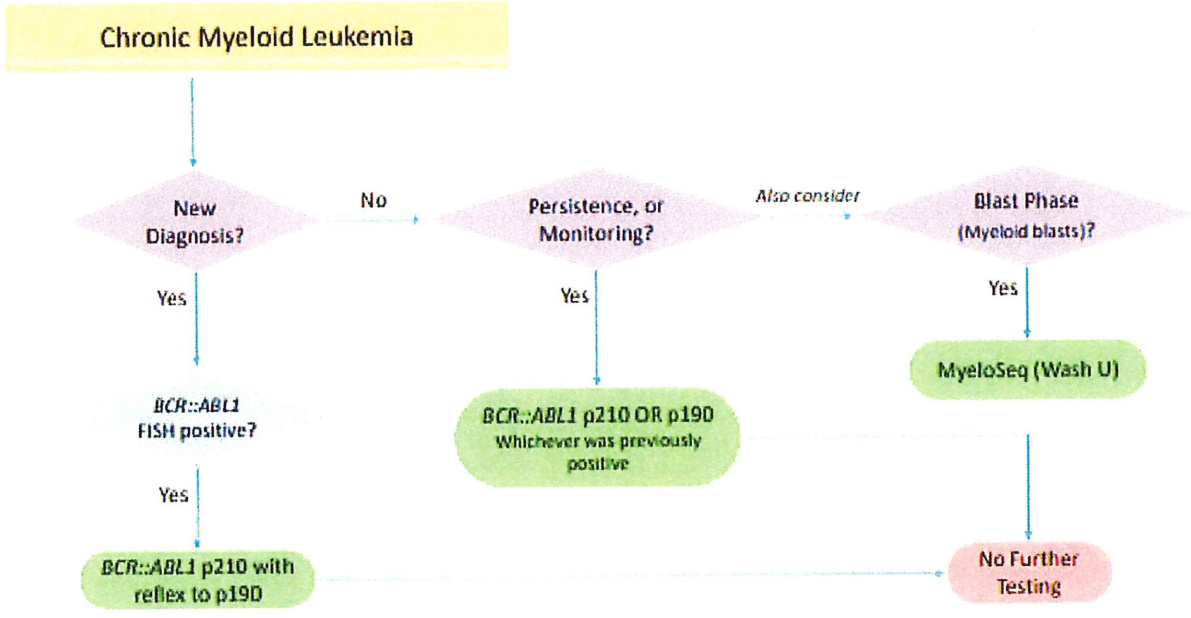
Revised 6/28/23
 Bijal Parikh MD, PhD
 Medical Director, MDL

Acute Lymphoblastic Leukemia

Use Hemepath, Flow, MRD, and Cytogenetic results to guide categorization

- New diagnosis: includes diagnosis at BIC/WashU or OSH, either suspected or confirmed
- Relapse: having previously achieved remission, now with new active disease
- Persistent disease: no evidence of remission





**If MDS progresses to AML, follow AML algorithm

Standard Profiles - Performed at Reference Laboratory - 2024

Test Name	Performing Laboratory	Components	CPT Code
14-3-3 Antigen (Protein or Prion)	National Prion Disease Pathology Surveillance Center, Case Western University	Protein 14-3-3 Tau Protein RT-QulC	84182 86317 0035U
Adalimumab Concentration and Anti-Adalimumab Antibody	Mayo Medical Laboratories (MML)	Adalimumab Adalimumab Antibody (if appropriate)	80145 83520
Alzheimer's Disease Evaluation	Mayo Medical Laboratories (MML)	Phospho-Tau Total-Tau AB-42	83520 x3
Alkaline Phosphatase Isoenzymes	Mayo Medical Laboratories (MML)	Alkaline Phosphatase, Total Alkaline Phosphatase, Isoenzymes	84075 84080
Alpha-1-Antitrypsin Proteotype S/Z, LC-MS/MS	Mayo Medical Laboratories (MML)	Alpha-1-Antitrypsin Quantitative Alpha-1-Antitrypsin proteotype S/Z, LC-MS/MS Alpha-1-Antitrypsin Phenotype (If Appropriate)	82103 82542 82104
Arbovirus Panel, IgG, IgM, CSF	Mayo Medical Laboratories (MML)	California Encephalitis, IgG, IgM St Louis Encephalitis, IgG, IgM Eastern Equine Encephalitis, IgG, IgM Western Equine Encephalitis, IgG, IgM	86651 x2 86653 x2 86652 x2 86654 x2
Avian Antigen Panel	Medical College of Wisconsin	Cockatiel Parrot Macaw Parakeet Pigeon Positive control	86331 x5
Bartonella Antibody Panel, IgG and IgM	Mayo Medical Laboratories (MML)	Bartonella henselae, IgG, IgM Bartonella quintana IgG, IgM	86611 x2 86611 x2
BMT Donor Evaluation	National Blood Testing Collaborative (NBTC)	Hepatitis B Surface Antigen Donor Hepatitis B Core Antibody Donor Hepatitis C Antibody Donor HIV 1-2 Antibody Donor HTLV I/II Donor RPR Donor HIV NAT HCV NAT WNV NAT CMV Donor Chagas HBV NAT	87340 86704 86803 86703 86790 86592 87535 87521 87798 86644 86753 N/A
Brucella Antibody, IgG & IgM	Mayo Medical Laboratories (MML)	IgG, IgM Brucella total antibody, agglutination (if appropriate)	86622 x2 86622
Cathartic Laxatives Profile, Stool	National Medical Services (NMS)	Magnesium Phosphorous	83735 84100
Chlamydia Serology, Serum	Mayo Medical Laboratories (MML)	C.pneumoniae IgG,IgM C trachomatis, IgG,IgM C psittaci IgG,IgM	86631,86632 86631,86632 86631,86632
Coccidioides Antibody, Serum or Spinal Fluid	Mayo Medical Laboratories (MML)	Coccidioidin IgG Complement Fixation Coccidioidin IgG, IgM Immunodiffusion	86635 x3
Cortisol, 24 hour urine, or random urine	Mayo Medical Laboratories (MML)	Cortisol Cortisone	82530 82542
Creatine Kinase (CK) Isoenzyme Electrophoresis	Mayo Medical Laboratories (MML)	CK isoenzymes CK, total	82552 82550
Cryoglobulin, Serum	Mayo Medical Laboratories (MML)	Cryoglobulin, Quantitative Immunofixation if appropriate	82595 86334 if appropriate
Cryoglobulin, Serum and Plasma	Mayo Medical Laboratories (MML)	Cryoglobulin, Quantitative Cryofibrinogen Immunofixation if appropriate	82595 82585 86334 if appropriate
Culture, Chlamydia	Mayo Medical Laboratories (MML)	Chlamydia Culture Fluorescent Typing	87110 87140
Dengue Fever Antibodies, IgG, IgM	Mayo Medical Laboratories (MML)	IgG, IgM	86790 x2
Desmoglein, DSG1 and DSG3	Mayo Medical Laboratories (MML)	DSG1 DSG3	83516 83516

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Test Name	Performing Laboratory	Components	CPT Code		
Electrolytes, Fecal	Mayo Medical Laboratories (MML)	Chloride	82438		
		Magnesium	83735		
		Osmolality	84999		
		Potassium	84999		
		Sodium	84302		
		Phosphorus	84100		
Encephalopathy-Autoimmune Eval, Serum	Mayo Medical Laboratories (MML)	AGNA-1, Amphiphysin, ANNA-1, ANNA-2, ANNA-3, CRMP-5-IgG, PCA-1, PCA-2, PCA-Tr, DPPX Ab, mGluR1 Ab, GFAP, IgLON5, NIF Ab	86255 X19		
		NMDA-R Ab CBA, S	86255		
		GABA-B-R Ab CBA, S	86256		
		AMPA-R Ab CBA, S	84182		
		LG11-IgG CBA, S	84182		
		CASPR2-IgG CBA, S	84182		
		Gad65 Ab Assay	84182		
		ACh R (Muscle) binding Ab (if appropriate)	86255		
		AGNA-1 immunoblot (if appropriate)	86256		
		Alpha Internexin CBA (if appropriate)	86256		
		AMPA-R Ab IF Titer (if appropriate)	86255		
		Amphiphysin immunoblot (if appropriate)	86256		
		ANNA-1 immunoblot (if appropriate)	86255		
		ANNA-2 immunoblot (if appropriate)	86256		
		CRMP-5-IgG Western blot (if appropriate)	86255		
		DPPX Ab CBA (if appropriate)	86256		
		DPPX Ab IF Titer (if appropriate)	86255		
		GABA-B-R Ab IF titer (if appropriate)	86256		
		GFAP CBA (if appropriate)	86255		
		GFAP IFA Titer (if appropriate)	86256		
		IgLON5 CBA (if appropriate)	84182		
		IgLON5 IFA Titer (if appropriate)	84182		
		mGluR1 Ab CBA (if appropriate)			
		mGluR1 Ab IFA Titer (if appropriate)			
		NIF heavy chain CBA (if appropriate)			
		NIF IFA Titer (if appropriate)			
		NIF light chain CBA (if appropriate)			
		NMDA-R Ab IF Titer (if appropriate)			
		PCA-1 immunoblot (if appropriate)			
		PCA-Tr immunoblot (if appropriate)			
		Encephalopathy-Autoimmune Eval, CSF	Mayo Medical Laboratories (MML)	AGN-1, Amphiphysin, ANNA-1, ANNA-2, ANNA-3 CRMP-5-IgG, PCA-1, PCA-2, PCA-Tr, DPPX, mGluR1, GFAP, IgLON5, NIF Ab	86255 X19
				NMDA-R Ab CBA, CSF	86255
				GABA-B-R Ab CBA, CSF	86256
				AMPA-R Ab CBA, CSF	84182
LG11-IgG CBA, CSF	84182				
CASPR2-IgG CBA, CSF	84182				
Gad65 Ab Assay, CSF	84182				
AGNA-1 immunoblot, CSF (if appropriate)	86255				
Alpha internexin CBA, CSF (if appropriate)	86256				
AMPA-R Ab IF titer, CSF (if appropriate)	86256				
Amphiphysin immunoblot, CSF (if appropriate)	86255				
ANNA-1 immunoblot, CSF (if appropriate)	86256				
ANNA-2 immunoblot, CSF (if appropriate)	86255				
CRMP-5 Western blot, CSF (if appropriate)	86256				
DPPX Ab CBA, CSF (if appropriate)	86255				
DPPX Ab IFA titer, CSF (if appropriate)	86256				
GABA-B-R Ab IF titer, CSF (if appropriate)	86255				
GFAP CBA, CSF (if appropriate)	86256				
GFAP IFA titer, CSF (if appropriate)	86255				
IgLON5 CBA, CSF (if appropriate)	86256				
IgLON5 IFA titer, CSF (if appropriate)	84182				
mGluR1 Ab CBA, CSF (if appropriate)	84182				
mGluR1 Ab IFA titer, CSF (if appropriate)					
NIF Heavy chain CBA, CSF (if appropriate)					
NIF IFA titer, CSF (if appropriate)					
NIF Light chain CBA, CSF (if appropriate)					
NMDA-R Ab IF titer, CSF (if appropriate)					
PCA-1 immunoblot, CSF (if appropriate)					
PCA-Tr immunoblot, CSF (if appropriate)					

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Test Name	Performing Laboratory	Components	CPT Code
Food Screen Allergen Panel (RAST®), Serum	St. Louis Children's Hospital Reference Lab	IgE for chicken meat, egg white, milk, orange, peanut, potato, sesame seed, soybean, tomato, tuna, wheat	86003 x11
Hypersensitivity Pneumonitis Panel	Viracor Eurofins Clinical Diagnosis	Thermoactinomyces vulgaris IgG Micropolyspora faeni IgG Aureobasidium pullulans IgG Aspergillus fumigatus IgG Alternaria tenuis/alternata IgG Penicillium Chrysogenum IgG Phoma betae IgG Trichoderma viride IgG	86001 x8
Heavy Metals Screen, Urine, Blood	Mayo Medical Laboratories (MML)	Arsenic Cadmium Lead Mercury	82175 82300 83655 83825
Helicobacter pylori Culture	Focus Diagnostics	Culture Tissue Processing Organism Identification (if isolated) Susceptibility (if organism isolated)	87081 87176 87077 87186
Hexosaminidase A and Total Hexosaminidase, Leukocytes/Molecular Reflex	Mayo Medical Laboratories (MML)	Hexosaminidase A Hexosaminidase, total HEXA gene analysis	83080 83080 81255
Histoplasma Antibody, CSF	Mayo Medical Laboratories (MML)	Histoplasma, Immunodiffusion Histoplasma Mycelial, Complement Fixation Histoplasma Yeast, Complement Fixation	86698 x3
Histoplasma Antibody, Serum (Confirmation)	Mayo Medical Laboratories (MML)	Mycelial Yeast Immunodiffusion	86698 x3
Hypersensitivity Pneumonitis IgG Ab	Mayo Medical Laboratories (MML)	Aspergillus fumigatus Bacterium not elsewhere specified	86606 86609 x2
IgG Subclasses	Mayo Medical Laboratories (MML)	IgG Total IgG Subclasses	82784 82787 x4
Immunoglobulin Heavy and Light Chain Pairs, IgA Kappa and IgA Lambda.	Mayo Medical Laboratories (MML)	IgA Kappa IgA Lambda	83883 x2
Infliximab Quantitation with Reflex to Infliximab Antibodies to Infliximab	Mayo Medical Laboratories (MML)	Infliximab Antibodies	80230 82397
Inhibin A and B	Mayo Medical Laboratories (MML)	Inhibin A, Tumor marker Inhibin B	86336 83520
Lactate/Pyruvate Panel, Blood or CSF	St. Louis Children's Hospital Reference Lab	Lactate Pyruvate	83605 84210
Lactate Dehydrogenase (LD) Isoenzymes	Mayo Medical Laboratories (MML)	LD Isoenzymes LD, total	83625 83615
Lyme Disease Antibody, Western Blot (Serum or CSF) Reflex Testing	Mayo Medical Laboratories (MML)	Lyme diseases AB, IgG, IgM	86617x2
Lymphocytic Choriomeningitis (LCM) Virus Antibody, IFA (CSF)	ARUP	IgG, IgM	86727 x2
Lysosomal Enzyme, Leukocytes	Jefferson Medical College	Enzyme Activity (non radioactive substrate) Enzyme Activity (radioactive substrate)	82657 86258
Measles (Rubeola), IgG, IgM	Mayo Medical Laboratories (MML)	IgG, IgM	86765 x2
Missouri-Illinois Regional Allergen Panel (RAST®), Serum	St. Louis Children's Hospital Reference Lab	Alternaria Tenuis, Bermuda Grass, Cat Dander, Cladosporium Herbaum, Common Ragweed, Dermatoph. Farinae, Dermatoph. Pteronyssinus, Dog Dander, Elm Tree, House Dust (Hollister-Stier), Maple (Box Elder), Oak Tree, Rye, Timothy Grass	86003 x14
MS Profile	Mayo Medical Laboratories (MML)	Kappa Free Light Chain Olig Band CSF & Serum	83521 83916 x2
Mumps Virus Antibody, IgG and IgM	Mayo Medical Laboratories (MML)	IgG, IgM	86735 x2
Mycoplasma pneumoniae, IgM, IgG Serum	Mayo Medical Laboratories (MML)	IgG, IgM Indirect IFA (if appropriate)	86738 x2 86738

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Test Name	Performing Laboratory	Components	CPT Code
Poliovirus AB	Quest Diagnostics Infectious Disease	Poliovirus Type 1-3	86382 x2
Porphyrins, Quantitative, Urine	Mayo Medical Laboratories (MML)	Porphobilinogen, Quantitative Porphyrins, Quantitation and Fractionation	84110 84120
Primidone & Phenobarbital	Mayo Medical Laboratories (MML)	Phenobarbital Primidone	80184 80188
Thiopurine Metabolites	Mayo Medical Laboratories (MML)	6-TGN, 6-MMPN	80299
Prostate Specific Antigen (PSA), Total and Free	Mayo Medical Laboratories (MML)	Total PSA Free PSA	84153 84154
Q Fever Antibody, IgG, IgM	Mayo Medical Laboratories (MML)	IgG, Phase I and Phase II IgM, Phase I and Phase II	86638 x2 86638 x2
RMSF (Spotted Fever Group, IgG, IgM)	Mayo Medical Laboratories (MML)	IgG, IgM	86757 x2
Rubeola (Measles) Antibodies, IgG and IgM, Serum, CSF	Mayo Medical Laboratories (MML)	IgG IgM	86765 86765
Serum Drugs of Abuse Screen, 10 Panel	NMS Lab	Amphetamine Screen Barbiturate Screen Benzodiazepine Screen Cocaine Screen Opiate Screen Oxycodones PCP Screen Cannabinoid Screen Methadone Screen	80307
Streptococcal Antibodies Profile	Mayo Medical Laboratories (MML)	ASO Titer Dnase B Titer	86060 86215
Streptococcus Pneumoniae IgG Antibody 23 Serotypes	Mayo Medical Laboratories (MML)	S pneumoniae IgG serotypes 23	86317 x23
Testosterone, Total and Free	Mayo Medical Laboratories (MML)	Testosterone, Free Testosterone, Total	84402 84403
Thyroglobulin Reflex To MS or IA	Mayo Medical Laboratories (MML)	Thyroglobulin Antibody Thyroglobulin IA Thyroglobulin MS	86800 84432 84432
Ureaplasma, PCR	Mayo Medical Laboratories (MML)	Ureaplasma urealyticum PCR Ureaplasma parvum PCR	87798 87798
Vancella-Zoster Virus (VZV) Antibody, Total and IgM, CSF	Quest Diagnostics	Total IgM	86787 X2
Varicella-Zoster Virus (VZV) Antibody, IgG and IgM	Mayo Medical Laboratories (MML)	IgG IgM	86787 86787
West Nile Virus IgG, IgM, Serum and CSF	Mayo Medical Laboratories (MML)	IgG IgM	86789 86788