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Reflex testing is a necessary follow-up for the testing listed below. This testing is required to confirm quantitative positive preliminary testing and/or specified screening tests, or to provide Pathology Physician review and interpretation with written report.

Test	Condition(s)		Reflex Test(s)
IMMUNOLOGY & FLOW CYTOMETRY			
Anti-Mitochondrial Antibody (AMA)	Positive		AMA Titer
Anti-Smooth Muscle Antibody (ASMA)	Positive		ASMA Titer
Anti-Parietal Cell Antibody (APCA)	Positive		APCA Titer
Protein Electrophoresis (PEP)	Suspicious Pattern		Immunofixation Electrophoresis (IFE)
Flow Cytometry	All		Pathologist Interpretation
Protein Electrophoresis (PEP)	All		Pathologist Interpretation
Immunofixation Electrophoresis (IFE)	All		Pathologist Interpretation
HEMATOLOGY & HEMOSTASIS			
Hemoglobin Screen	Abnormal		Gel Electrophoresis and/or KB, Solubility, Peripheral Blood Smear, Send out for Hemoglobin Analysis confirmation using an alternative method per SOP.
Gel Electrophoresis	Abnormal		KB and/or Solubility, Peripheral Blood Smear, Send out for Hemoglobin Analysis confirmation using an alternate method per SOP
Hemoglobin Analysis, No Interpretation	First time abnormal hemoglobin analysis		Pathologist Interpretation
Rapid Malaria Screen	Positive		Blood parasite screen
ADAMTS-13 activity	<30%		ADAMTS-13 inhibitor assay/titer
ADAMTS-13 inhibitor	< 0.7 Inhibitor Units		ADAMTS-13 Antibody
Coagulation profile studies	Bleeding or thrombophilia work-ups		Pathologist Interpretation
Dilute Russell's Viper Venom Time (DRVVT) Screen	Prolonged		DRVVT Confirmation test
Thrombin Time	Prolonged		Protamine Correction or Plasma Mixing Test
Von Willebrand Disease Testing	Per Pathologist discretion based on results and clinical history.		VWF multimer
CBC with Diff	Abnormal		Manual Differential
Fluid Studies	Synovial Fluid	All	Pathologist Interpretation
	CSF	Previous or current diagnosis of leukemia/lymphoma	Pathologist Interpretation

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Test	Condition(s)		Reflex Test(s)
		or suspicious cell(s) in differential	
	Body Fluid	Suspicious cell(s) in differential	Pathologist Interpretation
Fluid Studies	First time malignant, blasts or "other" cells seen		Cytology
Peripheral Blood Smear	Abnormal		Pathologist Interpretation
Heparin Induced Thrombocytopenia (HIT)	Positive		Serotonin Release Assay (SRA)- Send Out
TRANSFUSION SERVICES			
Antibody Screen	Positive		Antibody Identification (ID), Red Cell Antigen phenotype, Direct Coombs (DAT), Select Cell Antibody Screen, Titer (OB patient), Pathologist Review; Send out ABID; Weak D analysis; Partial D analysis, Genotyping, Elution
Blood Type (ABO/Rh)	Blood Type Discrepancy		A1 lectin, DAT, Antibody Screen, Red Cell Antigen Typing (phenotype/genotype); Weak D analysis, Partial D analysis, Pathologist Review
Fetal Bleed Screen	Positive		Kleihauer-Betke, Pathologist Review
Direct Coombs (DAT) Comprehensive	Positive		Antibody Screen, Elution, Antibody ID; Red Cell Antigen Genotyping, Pathologist Review
Cord Blood Test	Incompatibility between Mom & Baby (ABO and/or Non- ABO)		MAIS, Antibody Screen, Antibody ID, Red Cell Antigen phenotype, Pathologist Review
Transfusion Reaction Panel (TR Post)	Suspected transfusion reaction		Pathologist Review; DAT comprehensive, Transfusion RXN LG/SML VOL, GS
AB ID (Antibody Identification)	Antibody detected and/or difficult crossmatch		Pathologist Review, Patient Antigen phenotyping
Miscellaneous Blood Bank Processes	Examples include use of rare antisera beyond expiration date; transfusion of Rh incompatible units; use of outdated blood, Evaluation of special testing or blood product requirements, Market withdrawal/Lookback from blood supplier		Pathologist Review antigen phenotyping, QA review for Market withdrawal
Serologic Crossmatch	Incompatible crossmatch or auto control positive		Pathologist Review; DAT; Send Out ABID
Blood Type (Bone Marrow & HPC Allogeneic Transplants)	ABO/Rh Incompatibility between donor and recipient. Known alloantibodies		ABO and/or Alloantibody Titer(s)/ Isoagglutinin titers, Pathologist Review, antigen phenotyping
Blood Type (Rh)	Weak D		Weak D analysis; Partial D analysis, Pathologist Review
CHEMISTRY			
Hepatitis B Surface Antigen	Reactive		Neutralization Test
Hepatitis B Core Antibody, Total, Reflex	Reactive		Hepatitis B Core Antibody, IgM
Urinalysis-Complete	Color other than "none" or "yellow", clarity other than "clear", trace or greater for leukocyte esterase, blood, protein, or positive for nitrite		Microscopic Analysis
HIV Antibody/Antigen	Reactive		HIV Confirmation

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Test	Condition(s)	Reflex Test(s)
Combo Test		
ED Preg Syphilis Screen	Reactive	Syphilis IgG/IgM Ab with Reflex
Syphilis IgG/IgM Ab with Reflex	Reactive	Confirmation by RPR and/or TPPA
Amphetamine Screen, Urine	Positive except ED patient	Amphetamine/ Methamphetamine Confirmation
Acid/Neutral & Basic Blood Drug Screen GC	Positive	Confirmation by Gas Chromatography and/or Mass Spectrometry
Toxicology Basic Urine Drug Screen	Positive	Confirmation by Gas Chromatography and/or Mass Spectrometry
Comprehensive Urine Drug Screen	Positive	Confirmation by Gas Chromatography and/or Mass Spectrometry
Anti-DNA Ab, IgG w/reflex to IFA titer	Positive	DsDNA (Crithidia luciliae) Ab IgG by IFA
CYTOLOGY		
ThinPrep© PAP	Age >=25 & is Atypical Squamous Cells of Undetermined Significance (ASCUS)	HPV
MICROBIOLOGY		
Ova & Larva Helminth Test	Potential parasite seen, non-helminth ova or larva.	Parasite Stain for identification or send specimen to reference lab for identification
GI (Gastrointestinal) Panel	Positive- Bacterial pathogen	Stool Culture and susceptibility testing when appropriate per protocol
GI (Gastrointestinal) Panel	Positive C. diff target	C. difficile Diagnostic Test when appropriate per protocol
Group B Strep PCR	Detected in patient with penicillin allergy	Susceptibility testing performed per protocol
Cryptococcal Antigen, CSF Source	Initial Positive	Culture Bacterial (includes gram stain) and Culture Fungal.
Cryptococcal Antigen	Positive	Cryptococcal Antigen Titer
Culture, Bacti/Fungal/AFB	Potential pathogen as detailed in protocols by specimen source	Pathogen identification and/or susceptibility testing
Culture, Bacti/Fungal/AFB	Growth of organism demonstrating unusual or concerning antimicrobial resistance	Test by alternate susceptibility or PCR method in house or send isolate to reference lab for confirmation
Culture, Bacti/Fungal/AFB	Growth of organism not identified by routine laboratory methods	Test by alternate method in house or send isolate to reference lab for identification
Culture, Bacti	Specimen is lower respiratory, body fluid, tissue, wound, or other miscellaneous source	Gram Stain
Culture, Bacti	Specimen is Bronchial Brushing, Transtracheal/ Percutaneous Lung Aspirate, Lung Biopsy Tissue, Bronchial Alveolar Lavage(BAL), or swab from any of the above sources	Culture, Legionella
Culture, Blood	Growth of bacteria or yeast	Blood Culture ID by PCR and/or susceptibility testing when appropriate per protocol

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Culture/Smear, AFB	Smear positive for AFB	MTb Nucleic Acid Amplification Test performed on all first-time smear positive patients OR 6 months from previous assay
MTB, PCR	All	AFB Smear and Culture
MOLECULAR PATHOLOGY		
Cystic Fibrosis mutation analysis	All	Pathologist Interpretation
Hereditary Hemochromatosis	All	Pathologist Interpretation
HER2 FISH	All	Pathologist Interpretation
CLL FISH	All	Pathologist Interpretation
HPV DNA Primary Screening	HPV (16,18, and/or High-Risk Group) positives	Cytology Gyn (PAP test)
SURGICAL PATHOLOGY		
Surgical Pathology Cases	Any Solid Tumor Malignancy	HER2 IHC
	New diagnosis of primary or metastatic breast cancer Diagnosis of breast cancer after neoadjuvant chemotherapy	ER, PR, AR, Ki67 and HER2/neu by IHC; Her2 FISH for invasive cancers
	New Diagnosis of colon cancer	DNA Mismatch repair testing by IHC (MLH1, MSH2, MSH6, PMS2); testing for BRAF if MLH1 and/or PMS2 is abnormal.
	Small bowel carcinoma	MMR IHC
	Squamous Cell Carcinoma of Oropharynx, Head, and neck (primary, recurrent, and metastatic).	P16, HER2 IHC, PD-L1 IHC
	Squamous Cell Carcinoma or Dysplasia of Anogenital Region (including cervix, vulva, anus, penis)	P16
	Heart Biopsy- Transplant	Trichrome (HISTO), CD68 (IHC), and C4D (IF)
	New diagnosis of primary or metastatic lung cancer	PD-L1 (IHC)
	Kidney-Biopsy Native	PAS, Jones, Trichrome (HISTO) IgG, IgA, IgM, C3, C1q, kappa, lambda, fibrinogen, albumin, and FS-H&E Electron Microscopy (Send-Out)
	Kidneys-Biopsy Transplant	PAS and Trichrome (HISTO) IgG, IgA, IgM, C3, C1q, fibrinogen, albumin, FS-H&E, C4d (IF), and SV40
	Muscle Biopsies	FS-Trichrome, FS-PAS, FS-H&E, Oil Red O, NADH, ATPase pH 4.3, ATPase pH 9.4, COX/SDH (combined stain), Acid Phosphatase, NSE(non-specific esterase), Myophosphorylase, Alkaline phosphatase, SDH, ATPase pH4.6
	Nerve Biopsies	Toluidine blue stain of glutaraldehyde fixed tissue on thick section (Send-Out)
	Neuroblastoma	N-MYC FISH (Send-Out)
	All Gliomas	IDH1, ATRX, p53, Ki67

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Test	Condition(s)	Reflex Test(s)
	All pituitary adenomas	Ki67, cam5.2 (In house) Pit1, TPit, SF1, GH, Prolactin, TSH, ACTH (Send-Out)
	Ependymomas of Posterior Fossa	H3K27me3 (IHC Send-Out)
	All Meningiomas	Ki67
	Liver Biopsy	Reticulin, Trichrome, Iron, PAS and PASD Stains. (HISTO)
	New diagnosis of endometrial cancer	DNA Mismatch repair testing by IHC (MLH1, MSH2, MSH6, PMS2); testing for promoter methylation if MLH1 and/or PMS2 is abnormal, p53 (IHC)
	Sentinel lymph nodes, Melanoma of skin	Melan-A (IHC) or HMB-45 (IHC) or SOX10 (IHC) each block
	Sentinel lymph nodes, gynecologic tract cancer	Pancytokeratins (IHC, x2; ultrastaging)
	Endometrial Carcinoma	For Non-Serous Carcinoma: p53 and MMR (IHC). POLE Sequencing (Stanford Send-Out) For Serous Carcinoma: HER2/neu (IHC and FISH)
	New Diagnosis of primary or metastatic melanoma (any tissue)	BRAF-V600E
	Carcinoma of the ovary	P53 and Mismatch repair analysis by IHC for all endometrioid and clear cell carcinomas POLE Sequencing (Stanford Send-Out), HER2 IHC
	Vulvar Carcinoma	P16 and p53 (IHC)
	Mucinous neoplasm of ovary	P53 or HER2 (IHC and FISH)
	Tenosynovial biopsy, Positive Congo red stain for amyloid.	Send-out to Mayo Clinic for subtyping by mass spectrometry
	Non-small cell carcinoma of lung.	HER2 IHC
	Bone Marrow	Bone Marrow Clot Section: Iron, Reticulin Bone Marrow Core Biopsy: PAS and Reticulin
	Fingernail and Toenail	Alcian Blue-PAS
	Temporal Artery, Biopsy	Elastic-EVG
MGMT promoter methylation (Send-Out)	All	Pathologist Interpretation
TERT Mutation (Send-Out)	All	Pathologist Interpretation
IDH1/IDH2 Mutation Analysis (Send-Out)	All	Pathologist Interpretation
CDKN2A FISH (Send-Out)	All	Pathologist Interpretation
BRAF V600E Mutation Analysis (Send-Out)	All	Pathologist Interpretation
H3K27M Mutation	All	Pathologist Interpretation

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Test	Condition(s)	Reflex Test(s)
(IHC) (Send-Out)		
H3K27me3 (IHC) (Send-Out)	All	Pathologist Interpretation
H3G34 R/V (IHC) (Send-Out)	All	Pathologist Interpretation
EWSR FISH (Send-Out)	All	Pathologist Interpretation
DDIT3 FISH (Send-Out)	All	Pathologist Interpretation
SYT FISH (Send-Out)	All	Pathologist Interpretation
USP6 FISH (Send-Out)	All	Pathologist Interpretation
POLE Sequencing (Stanford Send-Out)	All	Pathologist Interpretation

This list of reflex testing has been reviewed and approved by the UCDMC Medical Staff Executive Committee.

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4/16/2025

Sarah E. Barnhard, MD
Chair, Medical Staff Executive Committee

Date