

2026 Critical and Urgent Value Changes

Critical Values:

- Updated language for Hematology to clarify that PLTs are called once per 24 hours for non-CCBD patients
- Body fluids – separate components will now be reported for Blasts to clarify tumor cell or lymphoma cells
- PJP – testing no longer performed in CHCO laboratory, no longer a critical value
- Lactate – new critical value of greater than 3.9 mmol/L, notified to provider once per 24 hours. Go live date of critical value is to be determined, and will be announced on Provider Updates notification.

Approval of Laboratory Reflex Testing 2026

The laboratory performs additional testing or alters ordered testing when indicated for medical interpretation or as a screening step before, or in place of, the ordered laboratory test. These changes/additions to physician orders can be because of laboratory “standards of practice” or regulatory requirements. Testing will be charged for accordingly.

Blood Bank

1. **Newborn workup** for patients less than 4 months of age, consisting of ABO, Rh, Antibody Screen, DAT and IAT to detect ABO incompatibility with the mother (if baby is non- Group O).
2. **Irradiation of all cellular blood products** for all Children’s Hospital Colorado patients
3. **Irradiation for all Directed Donation** blood products
4. **Antibody identification** for any patient with a positive antibody screen, DAT, or other indication of unexpected antibodies.
5. **Confirmatory ABO** (no charge)
6. **Human Erythrocyte Antigen (HEA) Molecular testing** for patients who have the potential for red cell antibody formation that inhibits testing or patient populations that have developed antibodies and are at risk of developing additional antibodies

Biochemical Genetics

1. **Glutaryl-CoA Dehydrogenase (GCDH) Enzyme Activity, Fibroblast:** Mycoplasma testing (unless documentation of testing previously performed is provided) and expansion of fibroblast culture are performed in addition to the assay requested.

Chemistry

1. **HIV Testing:** HIV Screen that is reactive will be reflexed to an immunochromatographic assay HIV-1/HIV-2 differentiation and/or HIV-NAT testing for confirmation.
2. **Hepatitis BsAg neutralization confirmation** performed on repeat positive screening test for Hepatitis BsAg.
3. **Sweat Na** – performed when the Sweat Cl is ≥ 30 mmol/L
4. **T4 Free (FT4)** testing reflexed following a Thyroid Stimulating Hormone (TSH) result outside of normal reference intervals.
5. **Direct low-density lipoproteins (LDL)** performed on samples with Triglycerides >400 mg/dL.
6. **Celiac panel (tTG IgA, tTG IgG, Glia IgA, Glia IgG)** will be performed if the immunoglobulin A (IgA) is greater than or equal to 1.0 mg/dL but lower than the reference interval, or if the total IgA is less than mg/dL. Celiac panel orders with a normal IgA will only have a tTG IgA performed.
- 7.

Hematology

1. **Platelet Function Assay (PFA):** initially perform a PFA-EPI if abnormal reflex to PFA-ADP.
2. **CSF Cell Count with differential:** if fewer than 5 WBC no differential performed.
3. **CSF Cell Count ordered without differential** reflexes to include differential if greater than 5 WBC

4. **PTT performed** when PTT 1:1 correction ordered, and correction performed only if abnormal.
5. **PT performed** when PT 1:1 correction ordered, and correction performed only if abnormal.
6. **PTT Mixing Study** include PTT Hepzyme test if indicated to rule out anticoagulant interference.
7. **Peanut Allergen Reflex Profile:** If the peanut allergen is above reference range, reflex testing for peanut allergen components will occur, including ARA h1, h2, h3, h8-PR10, h9-LTP.

Immunopathology & Hematopathology Lab

1. **Lymphocyte Subset Phenotyping (TBNK):** If the difference between %CD3 and the sum of %CD4 and %CD8 is greater than 10%, and %NKT cells do not account for this discrepancy, then reflex to the TCR panel for analysis of elevated TCR gamma/delta T cells will occur.
2. **Anti-nuclear antibodies (ANA) Screen:** If the screen is positive, then reflex to ANA titer will occur.
3. **Anti-neutrophil cytoplasmic autoantibody (ANCA) Screen:** ANCA testing by immunofluorescence is unable to be utilized when an anti-nuclear antibody is also present in a patient's serum. If ANA interference is suspected during ANCA testing, an ANA Screen will be reflexed if not performed within the last 30 days. In patients with positive ANA results, Myeloperoxidase IgG and Serine Protease 3 IgG antibody detection by chemiluminescent immunoassay will be reflexed if not performed within the last 30 days.

Mitochondrial Labs

1. **Blue Native Page, Fibroblast: Respiratory Chain, Fibroblast; Complex I, Fibroblast; Pyruvate Dehydrogenase Enzyme Assay, Fibroblasts:** Mycoplasma testing (unless documentation of testing previously performed is provided) and expansion of fibroblast culture are performed in addition to the assay requested.

Microbiology/Molecular Microbiology

Some tests are one order that will generate multiple billable tests.

Reflex Tests: automatic tests generated from the result of a prior test.

Bacteriology, Mycology and Mycobacteriology

1. **Aerobic Bacterial Culture:** this order can be placed for a variety of specimen types. Additional billables will reflex automatically based on the Specimen Type and Source:
 - a. **Aspirate/Fluid Workup:** includes aerobic bacterial culture, anaerobic bacterial culture, gram stain with broth culture on non-permissive sterile sites.
 - b. **CSF/Lumbar puncture:** includes aerobic culture with cytospin gram stain.
 - c. **CSF/Shunt:** includes aerobic culture, broth culture and cytospin Gram stain.
 - d. **Respiratory** (Tracheal aspirate or sputum): includes aerobic bacterial culture and Gram stain. For Tracheal aspirates, a Gram stain will be performed, and rejection criteria will be applied. If specimen is rejected for culture, an aerobic culture will not be set-up.
 - e. **Tissues:** includes tissue grinding, aerobic culture with anaerobic culture and gram stain with broth culture non-permissive sterile sites.
2. **Bronchoalveolar Lavage Culture:** includes quantitative aerobic culture and cytospin gram stain.
3. **Cystic Fibrosis Pathogen Panel:** Additional billable procedures reflex automatically based on Source.
 - a. **Cystic Fibrosis Pathogen Culture, Quantitative for Sputum/BAL:** includes quantitative aerobic culture including specialized media for CF pathogen detection, Gram stain and Fungal culture, susceptibilities performed automatically on inpatients.
 - b. **Cystic Fibrosis Pathogen Culture Throat:** includes qualitative aerobic culture including specialized media for CF Pathogen detection and Gram stain.
4. **Methicillin-resistant S. aureus and S. aureus PCR/Nasal:** includes culture backup confirmation and susceptibility testing if MRSA is detected. For nasal swabs only.
5. **Strep A Reflex Group:** Strep A Only Culture performed when Rapid Strep test is negative.
6. **Urine Bacterial Culture:** This order can be placed for different Specimen Types under the source of Urine. Additional billables will reflex automatically based on the Specimen Type ordered:
 - a. **Catheter or equivalent collection:** includes gram stain, quantitative urine culture with presumptive identification of organisms as needed. Aerobic identification and antimicrobial susceptibility as defined in Microbiology Urine Culture Procedure.
 - b. **Clean Catch/Cotton Ball:** includes quantitative urine culture with presumptive identification of organisms as needed. Aerobic identification and antimicrobial susceptibility as defined in Microbiology



Affiliated with
 13123 E 16th Ave, Aurora, CO 80045
 720-777-3353 | childrenscolorado.org

Urine Culture Procedure.

7. **Fungal Culture:** includes fungal culture with specialized media based on source and type orders.
8. **Mycobacterial Culture:** includes mycobacterial culture, mycobacterial broth culture and direct stain (Auramine O Florescent stain). All first positive mycobacterial cultures will reflex to identification and susceptibility testing including screening culture for carbapenem-resistant *Enterobacterales* (CRE) and screening culture for *Candida auris*. [MB1]
9. **Bacterial Identifications and Susceptibilities:** Identification and susceptibility testing are reflex ordered on appropriate, recognized pathogens. The first two isolates on blood, tissue or CSF cultures will have full identification and susceptibility testing. A repeat identification and susceptibility will be repeated 4 days after the initial culture. Positive blood cultures will be tested with a rapid molecular assay that allows for early identification of pathogens.
10. **Fungal identifications and Susceptibility:** Mold isolates that cannot be identified at this laboratory, are sent to University of Texas Health Science Center (UTHSC) Fungus Testing Lab for identification. Fungal susceptibilities must be requested individually after a fungus has been isolated and are also sent to UTHSC.
11. **Yeast Susceptibilities:** Yeast susceptibilities will be performed automatically on all yeast isolated from blood cultures and sterile body fluid aspirates on the first positive culture and are sent to Mayo Medical Laboratories.
12. **Blood culture:** first positive blood culture on any patient will include a BCID2 (Blood Culture Identification) PCR panel, which detects 23 bacteria, 7 fungi, and 10 antimicrobial resistance mechanisms. This will be repeated if the Gram stain of the original culture is different from the current culture or if cultures are positive for more than 4 days.
13. **Broth Culture:** blood culture bottles are automatically inoculated with tissues and aspirates from non-permissive sites (called a broth culture). With an Infectious Disease Consultation, a request can be made to test first positive broth cultures using the BCID (Blood Culture Identification) PCR panel, which detects 23 bacteria, 7 fungi, and 10 antimicrobial resistance mechanisms.

Serology Reflex Groups

1. **RPR Reflex Group:** when RPR is reactive, reflexes to RPR Titer and FTA (performed by ARUP Lab).

Molecular Microbiology

1. **GI Pathogen PCR:** Detects 22 bacterial, viral and parasitic pathogens. A wet prep for RBCs and WBCs will be performed on fresh stool. If *Salmonella* or *Shigella* are detected, culture is performed to obtain the isolate for antimicrobial susceptibility testing.
2. **Conditional MEP (Meningoencephalitis Panel):** When conditional MEP is ordered for a CSF specimen, an MEP will be performed when the white blood count is 5 cells/mm³ or greater.
3. **If MEP is ordered on Inpatients, culture will automatically be performed.**
4. **MSK panel ordered, MRSA/ SA SSTI PCR will be performed. If MRSA/SA SSTI PCR is negative and the patient less than 5 years old, a Kingella PCR will also be performed.**

Precision Diagnostics

1. **Fragile X:** when positive, reflexes to Southern Blot analysis (performed by Baylor Miraca Genetics Lab).
2. **BCR/ABL1:** Major & minor analysis will be performed on all first-time diagnostic specimens according to laboratory testing protocol.
3. **T&B cell gene rearrangement MRD analysis** cannot be performed unless previous diagnostic specimen has been performed by NGS methodology.



13123 E 16th Ave, Aurora, CO 80045
720-777-3353 | childrenscolorado.org

Common Referral Laboratory Reflex Testing
 (List is not all inclusive, refer to reference laboratory webpage for additional information)

MAYO TEST NAME	REFLEXED TEST NAME
HEMOGLOBIN ELECTROPHORESIS EVALUATION, BLOOD	HB F DISTRIBUTION, B
	HB VARIANT BY MASS SPEC, B
	SICKLE SOLUBILITY, B
	ISOELECTRIC FOCUSING, B
	HB STABILITY, B
	ALPHA GOBLIN GENE SEQUENCING, B
	BETA GOBLIN GENE SEQUENCING, B
	GAMA GOBLIN FULL GENE SEQUENCING
	HB ELECTROPHORESIS SUMMARY INTERPRETATION
	BETA GLOBIN GENE CLUSTER, DEL/DUP, B
	ALPHA GLOBIN CLUSTER LOCUS DEL/DUP, B
	THALASSEMIA AND HEMOGLOBINOPATHY EVALUATION, SERUM AND WHOLE BLOOD
SICKLE SOLUBILITY, B	
ISOELECTRIC FOCUSING, B	
HB STABILITY, B	
HB VARIANT BY MASS SPEC, B	
ALPHA GOBLIN GENE SEQUENCING, B	
BETA GOBLIN GENE SEQUENCING, B	
GAMA GOBLIN FULL GENE SEQUENCING	
THALASSEMIA SUMMARY INTERPRETATION	
ALPHA GLOBIN CLUSTER LOCUS DEL/DUP, B	
BETA GLOBIN GENE CLUSTER, DEL/DUP, B	
ERYTHROCYTOSIS EVALUATION, WHOLE BLOOD	
	ISOELECTRIC FOCUSING, B
	HB STABILITY, B
	HB F DISTRIBUTION, B
	ALPHA GOBLIN GENE SEQUENCING, B
	BETA GOBLIN GENE SEQUENCING, B
	GAMA GOBLIN FULL GENE SEQUENCING
	ERYTHROCYTOSIS SUMMARY INTERPRETATION
	ALPHA GLOBIN CLUSTER LOCUS DEL/DUP, B
	BETA GLOBIN GENE CLUSTER, DEL/DUP, B
	ERYTHROCYTOSIS FULL PANEL, NGS



13123 E 16th Ave, Aurora, CO 80045
 720-777-3353 | childrenscolorado.org

MAYO TEST NAME	REFLEXED TEST NAME	
PORPHYRINS EVAL, WASHED ERYTHROCYTES	PROTOPORPHYRINS, FRACTIONATION, RBC	
BRUCELLA ANTIBODY SCREEN, IGM AND IGG, ELISA, SERUM	BRUCELLA AB, AGGLUTINATION, S	
ORGANISM REFERRED FOR IDENTIFICATION, AEROBIC BACTERIA	IDENTIFICATION COMMERCIAL KIT	
	IDENT BY MALDI-TOF MASS SPEC	
	BACTERIA IDENTIFICATION	
	AEROBE IDENT BY SEQUENCING	
	ADDITIONAL IDENTIFICATION PROCEDURE	
	SEROLOGIC AGGLUT METHOD 1 IDENT	
	SEROLOGIC AGGLUT METHOD 2 IDENT	
	SEROLOGIC AGGLUT METHOD 3 IDENT	
	IDENTIFICATION STAPHYLOCOCCUS	
	IDENTIFICATION STREPTOCOCCUS	
	IDENT SEROLOGIC AGGLUT METHOD 4	
	IDENTIFICATION BY PCR	
	ORGANISM REFERRED FOR IDENTIFICATION, ANAEROBIC BACTERIA	ID MALDI-TOF MASS SPEC ANAEROBE
		ANAEROBE IDENTIFICATION
ANAEROBE IDENTIFICATION BY SEQUENCING		
IDENTIFICATION COMMERCIAL KIT		
ID BY MALDI-TOF MASS SPEC		
BACTERIA IDENTIFICATION		
AEROBE ID BY SEQUENCING		
ADDITIONAL IDENTIFICATION PROCEDURE		
SEROLOGIC AGGLUT METHOD 1 IDENT		
SEROLOGIC AGGLUT METHOD 2 IDENT		
SEROLOGIC AGGLUT METHOD 3 IDENT		
IDENTIFICATION STAPHYLOCOCCUS		
IDENTIFICATION STREPTOCOCCUS		
IDENT SEROLOGIC AGGLUT METHOD 4		
IDENTIFICATION BY PCR		
DRUGS OF ABUSE SCREEN 5, MECONIUM	COCAINE AND METABOLITES CONF, M	
	OPIATE CONFIRMATION, M	
	PCP CONFIRMATION, MECONIUM	
	CARBOXY-THC CONFIRMATION, M	
	AMPHETAMINES CONFIRMATION, M	



13123 E 16th Ave, Aurora, CO 80045
720-777-3353 | childrenscolorado.org

MAYO TEST NAME	REFLEXED TEST NAME
DRUGS OF ABUSE SCREEN 5, CHAIN OF CUSTODY, MECONIUM	COCAINE AND METABOLITE CONF, COC, M
	OPIATE CONFIRMATION, COC, M
	PHENCYCLIDINE CONFIRMATION, COC, M
	CARBOXY-THC CONFIRMATION, COC, M
	AMPHETAMINES CONFIRMATION, COC, M
	CHAIN OF CUSTODY PROCESSING
DRUGS OF ABUSE SURVEY WITH CONFIRMATION, PANEL 9, RANDOM, URINE	OPIATE CONFIRMATION, U
	AMPHETAMINES CONFIRMATION, U
	BARBITURATES CONFIRMATION, U
	COCAINE AND METABOLITE CONF, U
	ETHANOL, U
	METHADONE CONFIRMATION, U
	PHENCYCLIDINE CONFIRMATION, U
	CARBOXY-THC CONFIRMATION, U
	BENZODIAZEPINES CONFIRMATION, U
ENDOMYSIAL ANTIBODIES (IGA), SERUM (Backup)	ENDOMYSIAL (IGA), TITER, SERUM
THYROGLOBULIN, TUMOR MARKER REFLEX, SERUM	THYROGLOBULIN, TUMOR MARKER, IA, S
	THYROGLOBULIN, MASS SPEC., S
THINPREP DIAGNOSTIC WITH HUMAN PAPILLOMAVIRUS (HPV) REFLEX, VARIES	PHYSICIAN INTERP DIAGNOSTIC
	HPV WITH GENOTYPING, PCR, THINPREP
	HPV VAGINAL DETECT/GENOTYPING PCR
THINPREP SCREEN WITH HUMAN PAPILLOMAVIRUS (HPV) REFLEX, VARIES	PHYSICIAN INTERP DIAGNOSTIC
	HPV WITH GENOTYPING, PCR, THINPREP
	HPV VAGINAL DETECT/GENOTYPING PCR
VEDOLIZUMAB QUANTITATION WITH REFLEX TO ANTIBODIES, SERUM	VEDOLIZUMAB AB, S
LYME DISEASE SEROLOGY, SERUM	LYME DISEASE AB, IMMUNOBLOT, S

ARUP TEST NAME	REFLEXED TEST NAME
ADAMTS13 REFLEX PANEL	ADAMTS13 ANTIBODY
AGGRESSIVE B-CELL LYMPHOMA REFLEX PANEL BY FISH, TISSUE	ICH-BCL2 FUSION, T(14:18) BY FISH
	BCL6 (3q27) GENE REARRANGEMENT BY FISH
ANA, IgG ELISA WITH REFLEX TO ANA, IgG IFA	ANTINUCLEAR ANTIBODY (ANA), Hep-2, IgG BY IFA
ANTINUCLEAR ANTIBODY (ANA), IgG WITH REFLEX TO ANA Hep-S SUBST, IgG AND ENA CONFIRMATION	ANTINUCLEAR ANTIBODY (ANA), Hep-2, IgG BY IFA
CHROMOSOME ANALYSIS, AMNIOTIC FLUID, WITH REFLEX TO GENOMIC MICROARRAY	GENOMIC MICROARRAY
CHROMOSOME ANALYSIS, LEUKEMIC BLOOD WITH REFLEX TO GENOMIC MICROARRAY	GENOMIC MICROARRAY
	CYTOGENETIC STUDY SUBMISSION – BASIC
	CYTOGENETIC STUDY SUBMISSION - EXTENSIVE
CHROMOSOME FISH, AMNIOTIC FLUID, WITH REFLEX TO CHROMOSOME ANALYSIS OR GENOMIC MICROARRAY	FISH
	CHROMOSOME ANALYSIS
dsDNA AB, IgG WITH REFLEX TO IFA TITER	DOUBLE STRANDED DNA (dsDNA) ANTIBODY, IgG BY IFA



13123 E 16th Ave, Aurora, CO 80045
720-777-3353 | childrenscolorado.org

F-ACTIN (SMOOTH MUSCLE) AB, IgG EIA WITH REFLEX TO ASM IFA	Smooth Muscle Ab, IgG IFA titer
HEMOGLOBIN A2 AND F BY COLUMN WITH REFLEX	CAPILLARY ELECTROPHORESIS
HEPATITIS C VIRUS (HCV) BY QUANT NAAT WITH REFLEX TO HCV GENOTYPE BY SEQUENCING	HEPATITIS C VIRUS GENOTYPE BY SEQUENCING
HEPATITIS C VIRUS (HCV) WITH REFLEX TO HCV HIGH-RESOLUTION GENOTYPE BY SEQUENCING	HCV HIGH-RESOLUTION GENOTYPE BY SEQUENCING
HPV HIGH RISK SCREEN BY TMA WITH REFLEX TO GENOTYPES 16 AND 18/45 THINPREP	HPV GENOTYPES 16 AND 18/45 THINPREP
MOG IgG CBA ANTIBODY, SERUM, WITH REFLEX	MOG ANTIBODY TITER, IgG
MOG IgG CBA ANTIBODY, WITH REFLEX, CSF	MOG ANTIBODY TITER, IgG
NMO/AQP4-IgG CBA WITH REFLEX, SERUM	AQP4 ANTIBODY TITER, IgG



Children's Hospital Colorado



Affiliated with
**University of Colorado
 Anschutz Medical Campus**

**13123 E 16th Ave, Aurora, CO 80045
 720-777-3353 | childrenscolorado.org**