

Critical Laboratory Values – Reference Chart

Test	Age	Less Than	Greater Than	Units
BLOOD GASSES				
Arterial				
Bicarbonate		10	40	mmo/L
CO			20	%
Methemoglobin			10	%
pH		7.2	7.6	
pCO2		20	70	mm Hg
pO2		50		mm Hg
Capillary				
pH		7.2	7.6	
Bicarbonate		10	40	mmo/L
Venous Blood Gas				
pH		7.2	7.6	
Bicarbonate		10	40	mmo/L
Cord Blood Gas, Arterial Specimen				
Bicarbonate	Newborn	10	40	mmo/L
pH	Newborn	7.0		
Cord Blood Gas, Venous Specimen				
Bicarbonate	Newborn	10	40	mmo/L
pH	Newborn	7.0		
CHEMISTRIES				
Ammonia	< 16 years		100	umol/L
Bilirubin, Cord	Newborn		4.9	mg/dL
Bilirubin, Total Newborn	0-2 days		10	mg/dL
	3-15 days		13.0	mg/dL
	16-28 days		18.0	mg/dL
Calcium		6.6	13	mg/dL
Carbon Dioxide CO2		10	40	mmol/L
Creatinine	≥ 12 years		7.5	mg/dL
	< 12 years		3.8	mg/dL
Ethanol			0.39	g/dl
Glucose	0-24 hours	< 36	> 200	mg/dL
	24 hours-61 days	< 40	> 200	mg/dL
	> 61 days	< 50	> 400	mg/dL
Ionized Calcium		0.75	1.60	mmo/L
Lactate			3.0	mmo/L
Magnesium	≥ 12 years	1.0	5.0	mg/dL
	< 12 years	1.1	4.4	mg/dL
Phosphorous		1.2		mg/dL
Potassium	0 hours-1 month	2.5	6.0	mmo/L

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	> 1 month	2.8	6.2	mmo/L
Sodium	0 hours-1 month	128	160	mmo/L
	> 1 month	120	160	mmo/L
Troponin, POCT iSTAT			0.08	ng/mL
Troponin, High Sensitivity			Males: 77 Females: 52 Unknown: 60	ng/L
THERAPEUTIC DRUGS				
Acetaminophen			150	ug/mL
Digoxin			2.4	ng/mL
Gentamicin			PEAK: 12 TROUGH: 2.0	ug/mL
Lithium			2.0	mmol/L
Phenobarbital			50	ug/mL
Phenytoin			30	ug/mL
Salicylate			30	ug/mL
Tegretol (Carbamazepine)			15	ug/mL
Theophylline			20	ug/mL
Tobramycin			PEAK: 12 TROUGH: 2.0	ug/mL
Valproic Acid			150	ug/mL
Vancomycin			PEAK: 50 TROUGH: 25	ug/mL
HEMATOLOGY				
Absolute Neutrophil Count		0.500		K/uL
Blood Parasite, Malaria			Any positive result	
Fluids, CSF			50 WBCs	
Fluids, other			Confirmed intracellular bacteria	
Hematocrit	< 1 month	25	70	%
	> 1 month	21	60	%
Hemoglobin	< 1 month	7.0		gm/dL
	> 1 month	7.0	20	gm/dL
Platelets	< 7 months	100	1,000	K/UL
	> 7 months	30	1,000	K/UL
WBC	< 1 month	5,000	30,000	K/UL
	> 1 month	2,000	40,000	K/UL

NEWBORN SCREENING

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Test	Age	Less Than	Greater Than	Units
			Any positive result	
COAGULATION				
Fibrinogen Activity		75		mg/dL
PT/INR			INR 5.0	Ratio
PTT			100	Sec.
URINALYSIS				
Ketones	< 18 years	60	60	mg/dL
Glucose	Pre-ops		250	mg/dL
	< 2 years		Any positive result	
	2-16 years		100	mg/dL
Pregnancy, Qualitative hCG			Any positive for patients with a known location of: <ul style="list-style-type: none"> • Surgery • Pre-Op • ED • Urgent Care 	

BLOOD BANK	
Test	Call Value
Crossmatch	Delay due to antibody detection
DAT	Any positive

MICROBIOLOGY and VIROLOGY (including immunology and molecular testing methods)
<ul style="list-style-type: none"> • Critical Results <ul style="list-style-type: none"> ○ Will be called immediately for inpatient, outpatients, and outreach in-patient facilities. ○ Gram stains, positive cultures, or other tests indicating infection will be called immediately for normally sterile fluids such as blood, CSF, or tissue/specimens collected through a surgical procedure. • Clinically Significant Results <ul style="list-style-type: none"> ○ Will be called immediately for inpatient, outpatients, and outreach inpatient facilities ○ Outpatient results will be called as soon as possible to the provider between 0700-2100 daily. Outpatient test results received between 2100-0700 will be called to the provider the next day after 0700.

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- NICU
 - All NICU patients with microbiology test result(s) will be called if the patient has positive direct antigen, stool, or viral study and growth on any cultures.
- Labor & Delivery / Nursery
 - All Labor & Delivery patients and newborns with a positive Group B strep isolates are called as a critical result.
- Abscess fluids and sites do not qualify as a sterile site but source or other laboratory findings may result in the calling of the microbiology result.
- Infection Control will be contacted as noted in PHC policies regarding test results

Test/Description/Site	Critical	Clinically Significant*	Notes
Acid Fast Bacteria (AFB) culture, positive stain, or other assay		X	
Amniotic fluid culture, positive gram stain, or other assay	X		
Any positive PCR target for Rapid Meningitis/Encephalitis	X		
Any target that is positive or equivocal for Transplant Respiratory Pathogens by PCR	Newborn (Inpatient or Outpatient)	X	
Any target that is positive or equivocal for Respiratory Pathogen Panel	Newborn		
Bile culture, positive gram stain, or other assay	X		
BK Virus (positive or equivocal result only)	X		
Blood culture, positive gram stain, or other assay (Bacterial, Fungal, Mycobacterial)	X		
Blood Product culture, positive gram stain, or other assay	X		Contact Transfusion Medical Director or Transfusion Medical Director On-Call
Bone culture surgical collection positive gram stain or other assay	X	X (Positive results on discharged and outpatients)	Excludes fingers and toes unless specifically requested

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Test/Description/Site	Critical	Clinically Significant*	Notes
Bordetella pertussis or parapertussis (PCR positive or equivocal result only)	CSF/eye/amniotic fluid/newborn	X	
Campylobacter (positive PCR result only)		X	
Candida auris	X (Positive results on inpatients, ER, and nursing home patients)	X (Positive results on discharged and outpatients)	
Cerebral Spinal Fluid (CSF) or Extra Ventricular Drain (EVD or shunt) cultures, positive gram stain or other assay	X		Neurological collected routine CSF gram stains with no organisms seen do not need to be called
Chlamydomphila pneumoniae (PCR positive or equivocal result only)	CSF/eye/amniotic fluid/newborn		
Clostridium difficile Toxin from stool specimen only - positive results		X	
Clostridium perfringens from wound or other sterile fluid culture or positive gram stain or other assay	X		
Corneal positive gram stain or other assay		X	
COVID-19 PCR		X (See Laboratory's Collaborate Lab Lore site for current notification practices.)	
Cryptococcus Antigen or Cryptococcus Serum positive	X		
Cryptococcus neoformans and/or Cryptococcus gattii positive		X	
Cryptosporidium positive		X	
Cyst Fluid (not skin associated) culture, positive gram stain or other assay	X		
Cytomegalovirus (CMV) IgM Antibodies		Positive	

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Test/Description/Site	Critical	Clinically Significant*	Notes
Cytomegalovirus (CMV) positive or equivocal results by PCR	CSF/eye/amniotic fluid/newborn		
E. coli LT/ST or E. coli 0157 positive by PCR		X	
Enteric Pathogens (Aeromonas, Campylobacter, Plesiomonas, Salmonella, Shiga Toxin, Shigella, Vibrio, Yersinia)		X	
Enterovirus positive or equivocal results	CSF/eye/amniotic fluid/newborn		
Epstein-Barr Virus positive or equivocal results			
Eye cultures (excluding Cornea or Vitreous Fluid specimens. Refer to specific listing in this table for details) isolating Pneumococcus, GC, Pseudomonas, Beta Strep, amoebas, fungi		X	
Fluoroquinolones Resistant Culture Rectal Culture			Results do not need to be called to providers when received
Fungal cultures positive for dimorphic molds		X	
Giardia lamblia positive		X	
Gallbladder culture, positive gram stain or other assay	X		
Hemodialysis reagent positive culture		X	
Hepatitis B Virus (HBV) positive by PCR	CSF/eye/amniotic fluid/newborn		
Hepatitis C Virus (HCV) positive by PCR	CSF/eye/amniotic fluid/newborn		
Herpes Simplex – HSV1 positive or equivocal results by PCR	CSF/eye/amniotic fluid/newborn		
Herpes Simplex – HSV2 positive or equivocal results by PCR	CSF/eye/amniotic fluid/newborn		
Human Immunodeficiency Virus – HIV1 positive by PCR	CSF/eye/amniotic fluid/newborn		
Human Immunodeficiency Virus – HIV2 positive by PCR	CSF/eye/amniotic fluid/newborn		

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Influenza (positive only)	X		
Legionella EIA positive	CSF/eye/amniotic fluid/newborn	All other age groups	
Legionella pneumophila positive or equivocal results by PCR		All other age groups	
Malaria /Babesia stain	X		
Meningitis (Rapid)/Encephalitis	CSF/eye/amniotic fluid/newborn		
Mosquito Borne Panel by PCR (Zika Virus, Dengue Virus (types 1-4), Chikungunya virus, positive or equivocal results by PCR)	CSF/eye/amniotic fluid/newborn		
MRSA or MSSA positive results by culture or PCR		X	Results are called once per month per patient by reference lab.
Multiple Drug Resistant Organisms (Examples: carbapenem-resistant Enterobacteriaceae, Ceftriaxone-resistant Streptococcus pneumoniae)		X	Results are called once per month per patient by reference lab.
Mycobacterium tuberculosis positive or equivocal results by PCR		X	
Mycobacterium tuberculosis complex confirmed by probe or reference lab		X	Positive
Mycobacterium tuberculosis, Multiple Drug Resistant positive or equivocal results		X	
Mycoplasma pneumoniae positive or equivocal results by PCR	CSF/eye/amniotic fluid/newborn		
Neisseria gonorrhoeae cultures from culture specimens collected pediatric patients		X	
Norovirus GI positive or equivocal results	CSF/eye/amniotic fluid/newborn		
Ova and Parasite (including Giardia/ Cryptosporidium screen and Cyclospora/ Cystoisospora screen) positive for pathogenic parasites only		X	

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Parvovirus B19 DNA Detection positive or equivocal results by PCR	CSF/eye/amniotic fluid/newborn		
Pericardial Fluid culture, positive gram stain or other assay	X		
Peritoneal (Abdominal, ascites, dialysate, general fluid, paracentesis) culture, positive gram stain or other assay		X	
Pharmacy sterility cultures			Call immediately to inpatient pharmacy
Pleural (Thoracentesis) fluid culture, positive gram stain, or other assay		X	
Pneumocystis jirovecii DFA positive		X	
Respiratory Pathogen Panel	CSF/eye/amniotic fluid/newborn		
Salmonella		X	
Shiga Toxin stx1/stx2 positive by PCR		X	
Shigella positive		X	
Sinus smear — positive for aseptate hyphae (also known as Zygomycetes)	X		
Streptococcus Group A culture positive	X (from wound, body fluid source: excluding anal, respiratory, rectal/perirectal, urine, and vaginal)		
Streptococcus, Group B (also known as Strep B algalactiae) positive	Newborn (less than 7 days old)		
Surgical Prosthesis /Tissue culture, positive gram stain or other assay			
Synovial/Joint/ Bursa culture, positive gram stain or other assay		X	

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Tissue Culture or Positive gram Stain (Sterile site): Internal Nisceral Organ Tissue) excluding appendix	X (All organisms from internal/visceral organ, excluding appendix and gall bladder)	X (All other patient results that do not qualify for critical)	Sterile tissue from prosthetic joint cultures (shoulder, hip, knee and ankle). Tissues from naturally sterile sites collected in OR excluding feet/toes and fingers.
Transplant Respiratory Pathogen by PCR	CSF/eye/amniotic fluid/newborn		
Unusual bacterial isolates	X		
Vancomycin Intermediate or Resistant Staphylococcus aureus positive		X	Results are called once per month per patient by reference lab.
Vancomycin Resistant Enterococcus (VRE) positive		X	Results are called once per month per patient by reference lab.
Varicella-Zoster Virus (VZV) positive or equivocal results by PCR	CSF/eye/amniotic fluid/newborn		
Vibrio cholerae positive		X	
Vitreous/Aqueous/Anterior or Posterior Chamber (eye fluid) culture, positive gram stain or other assay	X		
Water reagent culture positive		X	