

Critical Test Results (Values)

Chemistry

Analyte	Pediatric (birth to 18 if not specified)	Adult	Notes
Alcohol (ETOH), Serum	>400 mg/dL	>400 mg/dL	
Ammonia	>100 ucmol/L	>100 ucmol/L	
Amylase Level	N/A	>400 IntU/L	
Bile Acids Total	N/A	≥100 mcmol/L	
Bilirubin, Total	> 15.0 mg/dL	> 19.9 mg/dL	
Blood pH	< 7.110, >7.590	<7.110, >7.590	
Calcium	Birth-1 Yr < 6.0 mg/dL, > 13.0 mg/dL	< 7.0 mg/dL, > 12.0mg/dL	
Carboxyhemoglobin	>20%	>20%	
CO2	N/A	≥13 Yr ≤10 mmol/L	
CPK total	N/A	>1000 IntU/mL	
Cord Base Excess Arterial	< -12		
Cord Base Excess Venous	< -12		
Cord pH Arterial	<7.16		
Cord pH Venous	<7.16		
Glucose	Birth-5 Day < 30 mg/dL, >300 mg/dL 5 Day-12 Yr < 50 mg/dL, >300 mg/dL	< 50 mg/dL, > 500 mg/dL	
Glucose, CSF	< = 40 mg/dL,	< = 30 mg/dL	
Hiv P24 Ag or Ab (DOH)	Confirmed Positive	Confirmed Positive	
Lactic Acid	N/A	>2 mmol/L	
Lithium Level	N/A	>1.49 mmol/L	
Magnesium	< 1.0 mg/dL, > 7.0 mg/dL	< 1.0 mg/dL, > 6.0 mg/dL	
Phosphorus	< 1.0 mg/dL	< 1.0 mg/dL	
Protein, CSF	0-30 Days ≥ 150 mg/dL 30 Days – 12 Yr ≥ 100 mg/dL	12 Yr – 150 Yrs ≥200 mg/dL	
Potassium	0 Day-1 Mth < 2.4 mmol/L > 6.4 mmol/L 1 Mth-12Yr <3.0 mmol/L, > 6.0 mmol/L	<3.0 mmol/L, >6.0 mol/L	
Sodium	< 12 Yr < 125 mmol/L, > 150 mmol/L	<126 mmol/L, >160mmol/L	
Troponin-Hs	≥ 64 ng/L Delta ≥ 10 @ 2hours Delta ≥ 15 @ 4 hours	≥ 64 ng/L Delta ≥ 10 @ 2hours Delta ≥ 15 @ 4 hours	
MUST "COMMUNICATE" BUT NOT CRITICAL TEST RESULTS			
Fetal fibronectin (FFN)	N/A	Positive	
HBsAG	N/A	Confirmation performed at W&I. Results called when confirmation is complete.	
Meconium drug screen w/confirmation	Positive	N/A	
Urine Drug screen	New Positive (Inpatients only)	New Positive (Inpatients only)	N/A for Butler
Syphilis Antibody screen	Preliminary positive	Call once confirmed positive from RIDOH	Preliminary positive for Butler patients

Therapeutic Drug Critical Values

Drug	Therapeutic Range	Critical Value
Amikacin	Peak: 25.0 – 35.0 mcg/mL Trough: 4.0-8.0 mcg/mL	Trough > 10.0 mcg/mL Peak >35.0
Gentamicin	Peak: 5.0 – 10.0 mcg/mL Trough: 0.5 – 2.0 mcg/mL	Trough >2.0 mcg/mL
Phenobarbital	15.0 – 40.0 mcg/mL	> 60.0 mcg/mL
Valproic Acid	35.0 – 100 .0 mcg/mL	>200 mcg/mL
Vancomycin	Peak: 20.0 – 40 .0 mcg/mL Trough: 10.0-20.0 mcg/mL	Trough > 20.0 mcg/mL

Hematology, Coagulation & Urinalysis

Analyte	Pediatric (birth to 18 if not specified)	Adult	Notes
Absolute Neutrophil Count	<0.5 (x10 ³ mcL) Neutropenia	<0.5 (x10 ³ mcL) Neutropenia	
Anti-Xa UF	≥0.8 IU/mL	≥0.8 IU/mL	
Anti-Xa LMW	≥1.0 IU/mL	≥1.0 IU/mL	
Blasts on peripheral smears	Any amount	Any amount	
Blood parasites	Ring form seen	Ring form seen	
Hemoglobin	Birth - 30 Days <12.0 g/dL 1 Mth - 2 Mth <9.0 g/dL > 2Mth -14 Yr < 8.0 g/dL > 14 Yr <7.0 g/dL	<7.0 g/dL	
Platelets	Birth -14 Yr <100 (x10 ³ mcL) >14 Yr <50 (x10 ³ mcL)	<50 (x10 ³ mcL)	
PT-INR	>5.0 secs	>5.0 secs	
Partial Thromboplastin Time	>100 secs	>100 secs	
WBC (x10 ³ mcL)	Birth-1 Day <2.5, ≥32.0 (x10 ³ mcL) Day 1-Day 7 <2.5, ≥36.0 (x10 ³ mcL) >Day 7 <1.0, ≥50.0 (x10 ³ mcL)	<1.0; ≥50.0 (x10 ³ mcL)	
MUST "COMMUNICATE" BUT NOT CRITICAL TEST RESULTS			
Ehrlichia/Anaplasma	Positive	Positive	
Serum, Urine Pregnancy			Call all Butler positives

Transfusion Service

Test or Procedure	Critical Finding	Notes
Antibody Titer	≥ 1:8	
Transfusion Reaction Workup	Hemolysis or red blood cell incompatibility	
Crossmatch (post-release)	Discovery of an incompatibility upon completion of testing during an emergency release situation	

Microbiology

Test or Procedure	Critical Finding	Notes
Blood Culture	Positive	
Invasive Cultures- Group A Streptococcus isolated	Positive	Any source other than throat
Sterile Body Fluid	Positive	CSF, Pleural, Peritoneal, Pericardial, Synovial, Bile, Amniotic
NICU Preliminary Urine Culture	Positive	
NICU HSV Testing	Positive	HSV Surface Screen, HSV Plasma DNA by PCR HSV PCR CSF HSV PCR Lesion/Swab

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Staph aureus (MRSA)	Methicillin-resistant	In-patients, NICU screens, implant screens, positive MRSA DNA results
Enterococcus (VRE)	Vancomycin-resistant	
Staph aureus isolates	Suspected VRSA/VISA	
ESBL isolate (extended spectrum beta-lactamase)	Positive	Inpatients
CRE isolate (carbapenemase-resistant Enterobacteriaceae)	Positive	Inpatients
Stenotrophomonas maltophilia		Inpatients
Neisseria meningitidis		
Viral culture, DFA or PCR	Positive	W&I NICU
HSV culture/PCR	Positive	Women of child-bearing age
C. difficile toxin by PCR (including EIA confirmatory assay)	Positive	
Enteric pathogen culture	Positive	
Strep A, Rapid or Culture	Positive	
AFB results (smear and/or culture)	Positive	
GC culture	Positive	
GC or Chlamydia PCR test	Positive	
Chlamydia culture	Positive	
Pneumocystis jirovecii dfa result	Positive	
Legionella	Positive	
Mycoplasma/Ureaplasma culture	Positive	
Ova & Parasite results	Positive	
Candida auris isolates	Positive or suspected	

Note: In accordance with MIC 113.1, the Rhode Island Department of Health will be notified if an Agent of Bioterrorism is isolated.

Prenatal & Special Testing

Test or Procedure	Critical Finding	Notes
N/A	N/A	There are no critical values defined at this time

Anatomic Pathology and Cytology

Test or Procedure	Critical Findings
Tissue or fluid examination, to include frozen section consults	Any unexpected diagnosis of malignancy
Exam for Products of conception	Negative for Products of Conception
Endometrial biopsy or curettings	Presence of adipose tissue
Anatomic pathology examination	- Any unexpected organ or tissue in a specimen; - Any significant change in pathological diagnosis detected by department quality assurance indicators
Cytology	- A new or unexpected malignancy; - Viral cytopathic changes of Herpes in Pap smear in a pregnant patient; - Corrected reports affecting patient management; - Bacteria or fungus in NON-GYN specimen of an immunocompromised patient; - Bacteria or fungus in cerebrospinal fluid

* The Chemistry and Hematology Laboratories may embed additional critical values in the “flagging systems” of their automated analyzers that are age or gender sensitive. The flags alert the testing staff to take additional steps such as verify by inquiry, delta check, and/or bring to the attention of the Medical Director or Laboratory Manager prior to verification and release.

* For details of Anatomic Pathology critical result notification, see *Anatomic Pathology Critical Results-Significant and Unexpected Findings* – AP.105.01.

* For details of Cytology Lab critical result notification, see *Significant and Unexpected Findings in Cytology* – CYT.130.1