

# Results that require action

## CHEMISTRY

Test name/number	Age/sex	Low	High
ALT 254	<18 yrs		> 500 IU/L
Ammonia 27			> 100 µmol/L
Beta-hydroxybutyrate, blood 7726			>2.5 mmol/L
Bilirubin, total 46	<18 yrs		> 12.0 mg/dL
Calcium 56		< 6.0 mg/dL	> 13.0 mg/dL
Calcium, ionized 8141		< 0.80 mmol/L	> 1.55 mmol/L
Carboxyhemoglobin 59			> 20%
CK/CPK (outpatient only) 80			> 1500 IU/L
CO2 (bicarbonate) 73		< 10 mmol/L	> 40 mmol/L
Creatinine 82	< 5 yrs		> 1.5 mg/dL
	5 – 10 yrs		> 2.0 mg/dL
	10 – 15 yrs		> 3.0 mg/dL
	Adult		> 7.0 mg/dL
Glucose	0 – 24 hrs	< 35 mg/dL	
	1 – 28 days	< 40 mg/dL	
	28 d – 18 yrs	< 40 mg/dL	> 300 mg/dL
	≥18 yrs	< 40 mg/dL	> 400 mg/dL
Glucose, CSF 9110		< 40 mg/dL	> 250 mg/dL
HCO3, venous 1329		< 15 mmol/L	> 40 mmol/L
HCO3, capillary			> 40 mmol/L
Base excess, umbilical cord		≤ -16	
HIV rapid assay 7189A			Reactive
Lactic acid, arterial 12603			>1.6 mmol/L
Lactic acid, venous 12616			> 2.2 mmol/L
Magnesium 175		< 1.2 mg/dL	> 5.9 mg/dL
Phosphorous 205		< 1.0 mg/dL	> 10.0 mg/dL
pH, arterial, venous, capillary		< 7.2	> 7.6
pCO2		< 20 mmHg	> 70 mmHg
pO2		< 40 mmHg	
Potassium 211		< 2.8 mmol/L	> 6.0 mmol/L
Sodium 233	<10 yrs	< 128 mmol/L	> 160 mmol/L
	Adult	< 120 mmol/L	> 160 mmol/L
Troponin I 5045	Outpatient		> 0.034 ng/mL

## Results that require action

### BLOOD BANK

Positive antibody screen – compatible blood is not available.

Emergency issuance of blood – crossmatch is subsequently positive or incomplete evaluation of positive antibody screen, incomplete antibody workup or antigen type of donor units not complete.

### COAGULATION

Test name/number	Age/sex	Low	High
APTT 490	0 – 28 days		> 60 seconds
	Outpatient		> 60 seconds
Factor X Chromogenic 5767		<15%	
Fibrinogen 101		<100 mg/dL	
Heparin level 2283			> 1.0 units/mL
Heparin antibodies 8771 8775			Positive, indeterminate
INR 487	0 – 28 days		> 1.3
	> 28 days		> 6.0
LMW Heparin 2281			> 2.00 U /mL

### HEMATOLOGY

Test name	Low	High
Anaplasma/Ehrlichia		Any seen
Blasts		Any seen w/ no previous
Hemoglobin		
0 – 7 day	<13.5 gm/dL	>24 gm/dL
8 – 30 days	<7.0 gm/dL	>24 gm/dL
≥ 31 days	<7.0 gm/dL	>20 gm/dL
Kleihauer-Betke		Positive
Platelet count	<20,000 /mm <sup>3</sup>	>1 million
White blood cell count	<2.0 x 10 <sup>3</sup> /mm <sup>3</sup>	>50.0 x 10 <sup>3</sup> /mm <sup>3</sup>
White blood cell count (0 – 28 days)	<5.0 x 10 <sup>3</sup> /mm <sup>3</sup>	>35.0 x 10 <sup>3</sup> /mm <sup>3</sup>
White blood cell count, CSF		>5 /mm <sup>3</sup>

# Results that require action

## MICROBIOLOGY

### Result that Require Action call list

Positive gram stains on:

- Amniotic, pleural, pericardial, synovial, ascitic, bile, and joint fluids
- Blood, bone marrow
- CSF
- Organs (kidney, liver, etc.)
- Surgical eye specimens
- Tissues from sterile sites such as bone, brain, gallbladder, heart, joint, liver, etc.

Test results:

- Clostridium difficile* toxin positive and invalid - inpatients (metro and regional hospitals)
- Cryptococcal antigen positive
- Enterovirus PCR - CSF positive, invalid
- Group B Strep PCR positive, invalid - Labor and Delivery patients only
- Legionella* Urine Antigen positive
- Shiga toxin* positive
- Streptococcus pneumoniae* antigen positive

Positive cultures:

- Amniotic, ascitic, bile, joint, pericardial, pleural, and synovial fluids
- Blood and bone marrow
- CSF
- Organs (kidney, liver, etc.)
- Tissues from sterile sites such as bone, joint, brain, etc.
- Cryptococcus neoformans* from any source
- Group B beta *Streptococcus*, any source, from newborns and labor & delivery patients only
- E. coli* 0157:H7 and Shiga toxin positive
- Vibrio cholerae*
- Zygomycete from sinus, eye or nose

Eye cultures

- Bacillus* species
- Pseudomonas aeruginosa*
- Streptococcus pneumoniae*
- Any isolate from surgical eye specimens (cornea, vitreous fluid, etc.)

Blood parasites (Ehrlichia, Anaplasma etc.)

Dialysis water culture out-of-range results

### Non-Critical Result call list

*Bordetella pertussis* - DNA Detected

*Clostridium difficile* toxin - positive or invalid

Influenza Antigen - positive

Influenza A/B/H1N1 PCR - positive

RSV - positive

*Histoplasma, Coccidioides, Blastomyces, Paracoccidioides*

Acid fast bacilli - smear, culture\*, DNA probe results\*, identification\*, and susceptibilities

\*First results only on patients with multiple concurrent positive cultures, unless different.

Outreach clinic patients: MRSA

Outreach hospitals inpatients (first patient isolate, each hospitalization): MRSA, VRE, ESBL positive, carbapenemase positive, KPC positive

## Results that require action

### TOXICOLOGY

Test name/number	Low	High
Acetaminophen	920	>100 µg/mL
Carbamazepine	952	> 15.0 µg/mL
Digoxin	92	> 2.5 ng/mL
Gentamicin, peak	826	> 12.0 µg/mL
Gentamicin, random	832	> 12.0 µg/mL
Gentamicin, trough	827	> 1.5 µg/mL
Lithium	169	> 1.5 meq/L
Methotrexate (24hrs post dose)	939	> 50 µmol/L
Methotrexate (48hrs post dose)	939	> 10 µmol/L
Phenobarbital	207	> 50 µg/mL
Phenytoin, free	1993	> 3.0 µg/mL
Phenytoin, total	91	> 30 µg/mL
Salicylate	228	> 35 mg/dL
Tobramycin, peak	849	> 12.0 µg/mL
Tobramycin, random	833	> 12.0 µg/mL
Tobramycin, trough	829	> 1.5 µg/mL
Valproic acid, free	6539	> 40 µg/mL
Valproic acid, total	949	> 150 µg/mL
Vancomycin, peak	964	> 60 µg/mL
Vancomycin, trough	963	> 25 µg/mL