CRITICAL VALUES

Chemistry

TEST	LOW	POSSIBLE EFFECT	HIGH	POSSIBLE EFFECT
Sodium – Serum	< 120 mEq/L	Dehydration & vascular collapse	> 155 mEq/L	Edema, hypervolemic & heart failure
Potassium – Venous Serum	< 3.0 mEq/L	Muscle weakness, paralysis, cardiac arrhythmias	> 6.0 mEq/L	Cardiotoxicity with arrhythmias
Potassium – Capillary	< 2.5 mEq/L	Same as above	> 7.0 mEq/L	Same as above
Glucose – CSF	< 20 mg/dl			
Glucose – Plasma Child/Adult	< 50 mg/dl	Brain damage	> 500 mg/dl	Coma
Glucose – Plasma Newborn	< 30 mg/dl	Brain damage	> 300 mg/dl	Coma
Calcium	< 6 mg/dl	Tetany and convulsions	> 12 mg/dl	Coma
Ionized Calcium	< 0.75		> 1.63	
Iron	None	None	> 500 ug/dl	Multi-system failure
Magnesium	< 0.5 mg/dl	Tetany; cardiac toxicity	> 5.0 mg/dl	Apnea; cardiac toxicity
Magnesium OB			> 8.0 mg/dl	Apnea; cardiac toxicity
Troponin	None	None	1.2 ng/ml	Acute myocardial damage
PO_2 – Arterial	< 40 mmHg	Complex interwoven patterns of acidosis, alkalosis, & anoxemia	None	None
PCO_2 – Arterial or Capillary	< 20 mmHg	Same as above	> 70 mmHg	Complex patterns of acidosis, alkalosis & anoxemia
pH – Arterial or Capillary	< 7.2 units	Same as above	> 7.6 units	Same as above
Bicarbonate (TCO_2)	< 10 mEq/L	Same as above	> 50 mEq/L	Same as above
Bilirubin – Neonate	None	None	> 15 mg/dl	Mental retardation spasticity
Hemoglobin - Carboxy (CO; Carbon Monoxide	None	None	> 14.9	Tissue hypoxia
Hemoglobin – Plasma	None	None	> 4.0 mg/dl	Indicator or hemolytic blood transfusion reaction
Acetaminophen	4 hours after ingestion		> 159 ug/ml	Potentially fatal liver damage
Carbamazepine			> 15 ug/ml	
Depakene (Valproate)			> 200 ug/ml	
Digoxin (Lanoxin)			> 2.5 ng/ml	
Dilantin			0-12 weeks >20 ug/ml > 12 weeks > 40 ug/ml	
Ethanol			> 300 mg/dl	
Gentamycin Trough Peak			 >2.0 mg/ml >12.0 mg/ml	
Lithium			> 2.0 mEq/L	

TEST	LOW	POSSIBLE EFFECT	HIGH	POSSIBLE EFFECT
Methanol			> 30 mg/dl	Acidosis, coma and respiratory failure
Phenobarbital			> 40 ug/ml	Coma
Salicylate			> 40 mg/dl	
Theophylline			>25 ug/ml	Seizures, coma, cardiac arrhythmias
Tobramycin Trough Peak			> 2.0 ug/ml > 12.0 ug/ml	
Vancomycin Trough Peak			> 15 ug/ml > 60 ug/ml	

Microbiology Critical Values

TEST	RESULT	POSSIBLE EFFECT
CSF Culture	Positive Gram stain	Meningitis
Blood Culture	Positive Gram Stain from culture vial	Septicemia

Hematology/Coagulation/Urinalysis Critical Values

TEST	LOW	POSSIBLE EFFECT	HIGH	POSSIBLE EFFECT
Hemoglobin – Whole Blood	< 7 gm/dl	Heart failure	None	
Hematocrit – Whole Blood	21% or less	Heart failure	None	
Platelet Count	20,000 or less	Hemorrhage	None	
Prothrombin Time Activity		Hemorrhage	INR >4.5	
Act. Partial Thromboplastin Time		Hemorrhage	> 90 seconds	
Fibrinogen	< 50 mg%	Hemorrhage	None	
CSF	Intracellular bacteria		None	
CSF Count			10 or more WBC/cuMM	Meningitis
Urine Ketones in Newborns			> 5 mg/dl (Trace)	Ketosis
Urine Glucose/ Reducing Sugars in Newborns			> 0.1 g/dl (Trace)	

NOTE: For complete laboratory list – See Procedure Manual