

# SCPMG Laboratory Systems

## Regional Critical Values

### March 2009

updated 4/17/2009 QSC critical values regional 03y2009 rev3

## Chemistry

## Pediatric\*

Analyte	Unit	Low Value	High Value	Effective Date	Literature Reference
<b>Bilirubin Neonatal</b>	mg/dL		0 Days > 8 1 Days > 11.4 2 Days > 13.6 3 Days > 14.5 4 Days > 15.0 > 4 Days > 18.0	12/10/2002	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -
<b>Glucose Neonatal</b>	mg/dL	<32	>326	10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -
<b>Potassium Neonatal</b>	mEq/L	<3.0	>6.4	2/13/2003	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -
<b>Gentamycin</b>	ug/mL		>12	2/27/2002	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -
<b>Urine Ketones if Glucose &gt; 1000 mg/dL (0-18yr)</b>		All	All	2/28/2007	

\* Adult critical Values apply except where noted

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Hematology

Pediatric\*

Analyte	Unit	Low Value	High Value	Effective Date	Literature Reference
<b>Hematocrit Neonatal</b>	%	<30	>71	9/14/2007	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -
<b>Hemoglobin Neonatal</b>	g/dL	<9.5	>22.3	10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -
<b>Absolute Neutrophil</b>	Per cumm	<500		10/3/1997	
<b>Peripheral Blood Smear</b>	N/A	Blasts present	Blasts present	10/1/2007	

\* Adult critical Values apply except where noted

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## Regional Critical Values

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Chemistry

Adult

Analyte	Unit	Low Value	High Value	Effective Date	Literature Reference
<b>Calcium</b>	mg/dL	<6.6	>12.9	10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -
<b>CO2</b>	mEq/L	<11	>40	10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -
<b>Glucose</b>	mg/dL	<46	>484	11/23/2004	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -
<b>Magnesium</b>	mEq/L	<0.8	>4.0	10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -
<b>Potassium</b>	mEq/L	<2.8	>6.2	10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -
<b>Sodium</b>	mEq/L	<120	>158	10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -

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### Coagulation

### Adult & Pediatric

Analyte	Unit	Low Value	High Value	Effective Date	Literature Reference
<b>Fibrinogen</b>	mg/dL	<100		11/12/2001	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -
<b>PT - Prothrombin Time</b>	INR		>5.0	9/25/2003	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -
<b>Heparin Anti-Xa</b>	IU/mL		(Unfrac Heparin) > 0.8, (LMWH) > 1.3	8/15/2005	
<b>Heparin (low molecular weight)</b>	IU/mL		(12 hour dosing): anti-Xa > 1.3 (24 hour dosing) anti-Xa > 2.1	4/17/2007	
<b>Fondaparinux (Arixtra)</b>	mcg/mL		≥ 1.30	8/28/2007	
<b>PTT - Heparin Therapy</b>	secs		>140	9/29/2004	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -
<b>PTT - Non Medicated</b>	secs		>68	10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -

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### Genetics

### Adult & Pediatric

Analyte	Unit	Low Value	High Value	Effective Date	Literature Reference
<b>Prenatal cytogenetic studies</b>	N/A	abnormal	abnormal	11/1/2008	
<b>Newborn cytogenetic studies</b>	N/A	abnormal	abnormal	11/1/2008	
<b>STAT cytogenetic &amp; sex determination studies</b>	N/A	abnormal	abnormal	11/1/2008	
<b>Genetic Critical Value Notification by phone, fax, e-mail or hardcopy is at the discretion of the Laboratory Director</b>					

### Hematology

### Adult

Analyte	Unit	Low Value	High Value	Effective Date	Literature Reference
<b>Hematocrit</b>	%	<18	>61	10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -
<b>Hemoglobin</b>	g/dL	<6.6	>19.9	10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -
<b>Absolute Neutrophils</b>	Per cumm	<500		10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -
<b>Platelets</b>	Per cumm	<37,000	>910,000	10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -
<b>WBC Total</b>	Per cumm	<2,000	>37,000	10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -
<b>Peripheral Blood Smear</b>	N/A	Blasts present	Blasts present	10/1/2007	

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### Microbiology

### Adult

Analyte	Unit	Low Value	High Value	Effective Date	Literature Reference
Positive Blood Cultures			If Present	10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -
Positive Gram Stain from CSF and other sterile body fluids			If Present	10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -
Positive Blood Parasites			If Present	7/31/2006	CAP Accreditation Requirements, Microbiology Checklist, April 2005, MIC 52280

### Therapeutic Drugs

### Adult

Analyte	Unit	Low Value	High Value	Effective Date	Literature Reference
5 - Flucytosine (5FC)	mcg/mL		> 100	10/3/1997	
Acetaminophen	mcg/mL		> 150	10/3/1997	
Amikacin	mcg/mL		Trough > 5.0 > 25.0 Peak	10/3/1997	
Amitriptyline	ng/mL		≥ 500	10/3/1997	

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Therapeutic Drugs (Cont.)	Adult			Effective Date	Literature Reference
<b>Chlordiazepoxide (Librium)</b>	ng/mL		Chlordiazepoxide: > 4000; Norchlordiazepox: > 1000	10/3/1997	
<b>Clorazepate (Tranxene)</b>	ng/mL		> 3000	10/3/1997	
<b>Desipramine</b>	mcg/mL		≥ 500	10/3/1997	
<b>Diazepam (Valium)</b>	ng/mL		> 3000 (Diazepam + Desmethyldiazepam)	10/3/1997	
<b>Digoxin</b>	ng/mL		> 2.0	10/3/1997	
<b>Doxepine</b>	ng/mL		≥ 500	10/3/1997	
<b>Ethosuximide (Zarontin)</b>	mcg/mL		> 100	10/3/1997	
<b>Fondaparinux (Arixtra)</b>	mcg/mL		≥ 1.30	8/28/2007	

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Therapeutic Drugs (Cont.)		Adult	Effective Date	Literature Reference
<b>Gentamicin</b>	mcg/mL	Trough > 2.0      Peak > 8.0      Neonatal: > 12.0	2/27/2002	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -
<b>Gentamicin, routine</b>	mcg/mL	> 8	10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -
<b>Heparin (low molecular weight)</b>	IU/mL	(12 hour dosing): anti- Xa > 1.3 (24 hour dosing) anti-Xa > 2.1	4/17/2007	
<b>Heparin (unfractionated)</b>	IU/mL	anti-Xa > 0.8	8/15/2005	
<b>Imipramine</b>	ng/mL	≥ 500	10/3/1997	
<b>Lead</b>	mcg/dL	≥ 45	4/9/2007	
<b>Lithium</b>	meq/L	> 1.5	10/3/2007	



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Therapeutic Drugs (Cont.)	Adult			Effective Date	Literature Reference
<b>Methotrexate</b>	micromol e/L		Call all Reports Potentially toxic with leucovorin rescue are at 24 hrs: > 5.0    at 48 hrs: > 1.0      at 72 hrs: > 0.1	10/3/2007	
<b>Nortriptyline</b>	ng/mL		≥ 500	10/3/2007	
<b>Phenobarbital</b>	mcg/mL		> 50	6/10/2002	Regional Chiefs of Neurology
<b>Phenytoin (Dilantin)</b>	mcg/mL		> 25	6/10/2002	Regional Chiefs of Neurology
<b>Phenytoin, Free</b>	mcg/mL		> 3.0	10/3/1997	
<b>Primidone (Mysoline)</b>	mcg/mL		> 12.0	10/3/1997	
<b>Salicylate</b>	mg/dL		Children (<14y): > 15.0; Adult: > 35.0	10/3/1997	

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Therapeutic Drugs (Cont.)	Adult			Effective Date	Literature Reference
<b>Tegretol (carbamazepine)</b>	mcg/mL		> 15	6/10/2002	Regional Chiefs of Neurology
<b>Theophylline</b>	mcg/mL		> 20	10/3/1997	
<b>Therapeutic Drugs</b>		1 unit above therapeutic range, unless otherwise defined.		10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -
<b>Thiocyanate</b>	mg/dL		> 2.5	10/3/1997	
<b>Tobramycin</b>	mcg/mL		Trough: > 2.0; Peak: > 10.0	10/3/1997	
<b>Trazodone</b>	ng/mL		> 5000	10/3/1997	
<b>Trimethoprim (Bactrim) &amp; Sulfamethoxazole</b>	mcg/mL		TMP: > 10.0; SMOX: > 200	10/3/1997	
<b>Valproic Acid (Depakene)</b>	mcg/mL		> 170	6/10/2002	Regional Chiefs of Neurology

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Therapeutic Drugs (Cont.)		Adult		Effective Date	Literature Reference
<b>Vancomycin</b>	mcg/mL		Trough $\geq$ 50	9/25/2006	Regional Reference Laboratories and Infectious Disease Committee (RLID)
<b>Volatiles, Blood Alcohol</b>	mg/dL		Ethanol: > 200 Methanol: > 20 Acetone: > 50 Isopropanol: > 50	10/3/1997	
<b>Warfarin (Coumadin)</b>			INR > 5	9/23/2003	

### Point of Care

Analyte	Unit	Low Value	High Value	Effective Date	Literature Reference
<b>Glucose</b>	mg/dL	> 1 month < 55 Neonatal: < 45	> 400 neonatal: >200	1/25/2009	