

Regional Critical Values

Purpose This reference document depicts the established critical results/values that signal a correctable life-threatening condition that requires prompt notification and clinical intervention.

Scope This reference document is intended for all users.

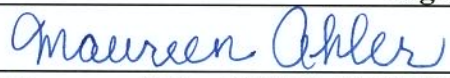

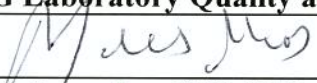
Policy

- The list of defined Laboratory Critical Test Results/Values is maintained and periodically reviewed by the SCPMG Laboratory Operations (OPC) Quality Subcommittee (QSC), in consult with other clinical specialty groups, to establish appropriate aspects of patient care.
- The published list of Regional Critical Values is updated at least annually. Changes between updates are documented and communicated via Technical Bulletin.
- Refer to *Critical Results/Values Policy* for notification criteria when critical results/values of specified test results are exceeded.

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Regional Critical Values

Reviewed and approved by:

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Reviewed and approved by (for Medical Center Area Approval Only):

SIGNATURE	DATE
Name: _____ Operations Director, Area Laboratory	
Name: _____ CLIA Laboratory Director	

SCPMG Laboratory Systems

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October 2013

updated 10/10/2013 QSC critical values regional 2013_10 rev 1

Chemistry

Pediatric*

Analyte	Unit	Low Value	High Value	Effective Date	Date Revised and Approved	Literature Reference	Approvals
Bilirubin Neonatal	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	4/13/2009	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -	Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee Approved by Regional Chiefs of Pediatric/ Dr. Wald 12/01
Glucose Neonatal	mg/dL	< 45	> 200	10/3/1997	9/9/2009	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -	Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee
Potassium Neonatal	mEq/L	< 3.0	> 6.4	2/13/2003	10/7/2005	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -	Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee
Gentamycin	ug/mL		> 12	2/27/2002	2/27/2002	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -	Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee
Urinalysis, Automated W/O Micro - Glucose	mg/dL		> = 1000	7/31/2013	8/4/2013		Approved by SCPMG Laboratory Operations Committee

* Adult critical Values apply except where noted

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Hematology

Pediatric*

Analyte	Unit	Low Value	High Value	Effective Date	Date Revised and Approved	Literature Reference	Approvals
Hematocrit Neonatal	%	< 30	> 71	12/5/2012	12/5/2012	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -	Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee
Hemoglobin Neonatal	g/dL	< 9.5	> 22.3	10/3/1997	10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -	Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee
Absolute Neutrophil	Per cumm	< 500		10/3/1997	12/10/2003 and 1/28/2004		Approved by Quality sub-committee Approved by SCPMG Laboratory Operations Committee
Peripheral Blood Smear	N/A	Blasts present	Blasts present	10/1/2007	10/1/2007		Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee
Platelets (<18 yr)	Per cumm	< 30,000	> 999,000	10/3/1997	6/9/2013	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -	Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee

* Adult critical Values apply except where noted

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Chemistry

Adult

Analyte	Unit	Low Value	High Value	Effective Date	Date Revised and Approved	Literature Reference	Approvals
Calcium	mg/dL	< 6.6	> 12.9	10/3/1997	10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -	Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee
CO2	mEq/L	< 11	> 40	10/3/1997	10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -	Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee
Glucose	mg/dL	< 46	> 484	11/23/2004	10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -	Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee
Lactic Acid (CSF)	mmol/L		None	1/9/1900	9/6/2011		Approved by SCPMG Laboratory Operations Committee
Lactic Acid (Blood)	mmol/L		> 1.9	1/9/1900	9/6/2011		Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee
Magnesium	mg/dl	< 1.0	> 4.8	10/3/1997	8/22/2011	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -	Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee
Potassium	mEq/L	< 2.8	> 6.2	10/3/1997	9/28/2005	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -	Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee
Sodium	mEq/L	< 120	> 158	10/3/1997	10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -	Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee
Troponin	ng/ml		> 0.5	11/17/2009	11/17/2009		Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee

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Coagulation

Adult & Pediatric

Analyte	Unit	Low Value	High Value	Effective Date	Date Revised and Approved	Literature Reference	Approvals
Fibrinogen	mg/dL	< 100		11/12/2001	3/12/2009	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -	Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee
PT - Prothrombin Time	INR		> 5.0	9/25/2003	9/25/2003	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -	Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee
Heparin Anti-Xa	IU/mL		(Unfrac Heparin) \geq 0.8, (LMWH) > 1.3	8/15/2005	10/28/2009		Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee
Heparin (low molecular weight)	IU/mL		(12 hour dosing): anti-Xa > 1.3 (24 hour dosing) anti-Xa > 2.1	4/17/2007	4/17/2007		Approved by SCPMG Laboratory Operations
PTT - Heparin Therapy	secs		> 140	9/29/2004	9/29/2004	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -	Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee
PTT - Non Medicated	secs		> 68	10/3/1997	10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -	Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee

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Genetics

Adult & Pediatric

Analyte	Unit	Low Value	High Value	Effective Date	Date Revised and Approved	Literature Reference	Approvals
Prenatal cytogenetic studies	N/A	abnormal	abnormal	11/1/2008	10/22/2008		Approved by SCPMG Laboratory Operations Committee
Newborn cytogenetic studies	N/A	abnormal	abnormal	11/1/2008	10/22/2008		Approved by SCPMG Laboratory Operations Committee
STAT cytogenetic & sex determination studies	N/A	abnormal	abnormal	11/1/2008	10/22/2008		Approved by SCPMG Laboratory Operations Committee
Genetic Critical Value Notification by phone, fax, e-mail or hardcopy is at the discretion of the Laboratory Director							

Hematology

Adult

Analyte	Unit	Low Value	High Value	Effective Date	Date Revised and Approved	Literature Reference	Approvals
Hematocrit	%	< 18	> 61	10/3/1997	10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -	Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee
Hemoglobin	g/dL	< 6.6	> 19.9	10/3/1997	10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -	Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee
Absolute Neutrophils (Ascites)	Per cumm		> 250	6/9/2013	6/9/2013	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -	Approved by Quality Sub-Committee Approved by SCPMG Laboratory Operations Committee
Absolute Neutrophils	Per cumm	< 500		10/3/1997	10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -	Approved by Quality Sub-Committee Approved by SCPMG Laboratory Operations Committee
Platelets	Per cumm		> 999,000	10/3/1997	6/9/2013	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -	Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee

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WBC Total	Per cumm	< 2,000	> 30,000	10/3/1997	9/25/2013	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -	Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee
Peripheral Blood Smear	N/A	Blasts present	Blasts present	10/1/2007	10/1/2007		Approved by Quality Sub-Committee Approved by SCPMG Laboratory Operations Committee

Microbiology

Adult

Analyte	Unit	Low Value	High Value	Effective Date	Date Revised and Approved	Literature Reference	Approvals
Positive Blood Cultures			If Present	10/3/1997	10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -	Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee
Positive Gram Stain from CSF and other sterile body fluids			If Present	10/3/1997	10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -	Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee
Positive Blood Parasites			If Present	7/31/2006	7/31/2006	CAP Accreditation Requirements, Microbiology Checklist, April 2005, MIC 52280	Approved by SCPMG Laboratory Operations Committee
Cryptococcus - Indian Ink Prep			If Present	7/1/2013	6/9/2013		Approved by SCPMG Laboratory Operations Committee

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Therapeutic
Drugs

Adult

Analyte	Unit	Low Value	High Value	Effective Date	Date Revised and Approved	Literature Reference	Approvals
5 - Flucytosine (5FC)	mcg/mL		> 100	10/3/1997	10/3/1997		Approved by SCPMG Laboratory Operations
Acetaminophen	mcg/mL		> 150	10/3/1997	10/3/1997		Approved by SCPMG Laboratory Operations
Amikacin (Peak)	mcg/mL		> 33	6/15/2011	6/15/2011		Approved by SCPMG Laboratory Operations
Amikacin (Trough)	mcg/mL		> 11	6/15/2011	6/15/2011		Approved by SCPMG Laboratory Operations
Amikacin (Random)	mcg/mL		> 33	10/3/1997	6/15/2011		Approved by SCPMG Laboratory Operations
Amitriptyline	ng/mL		≥ 500	10/3/1997	10/3/1997		Approved by SCPMG Laboratory Operations
Chlordiazepoxide (Librium)	ng/mL		Chlordiazepoxide: > 4000; Norchlordiazepox: > 1000	10/3/1997	10/3/1997		Approved by SCPMG Laboratory Operations
Clorazepate (Tranxene)	ng/mL		> 3000	10/3/1997	10/3/1997		Approved by SCPMG Laboratory Operations
Desipramine	ng/mL		≥ 500	10/3/1997	10/3/1997		Approved by SCPMG Laboratory Operations
Diazepam (Valium)	ng/mL		> 3000 (Diazepam + Desmethyldiazepam)	10/3/1997	10/3/1997		Approved by SCPMG Laboratory Operations

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Digoxin (CHF)	ng/mL		> 2.0	11/17/2010	11/17/2010		Approved by SCPMG Laboratory Operations
Digoxin (Atrial Arrhythmia)	ng/mL		> 2.0	11/17/2010	11/17/2010		Approved by SCPMG Laboratory Operations
Digoxin (No Indication SpecF)	ng/mL		> 2.0	10/3/1997	10/3/1997		Approved by SCPMG Laboratory Operations
Doxepine	ng/mL		≥ 500	10/3/1997	10/3/1997		Approved by SCPMG Laboratory Operations
Ethosuximide (Zarontin)	mcg/mL		> 100	10/3/1997	10/3/1997		Approved by SCPMG Laboratory Operations
Gentamicin (Peak)	mcg/mL		0-14 yrs >12 Adults > 11	6/15/2011	6/15/2011		Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee
Gentamicin (Synergy Peak)	mcg/mL		> 6	6/15/2011	6/15/2011		Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee
Gentamicin (Trough)	mcg/mL		> 2	6/15/2011	6/15/2011		Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee
Gentamicin (SDDA)	mcg/mL		0 - 14 yrs > 12 Adults > 11	2/27/2002	2/27/2002		Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee
Gentamicin (Random)	mcg/mL		0 - 14 yr > 12 Adult > 11	10/3/1997	6/15/2011	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -	Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee 3/02

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Heparin (low molecular weight)	IU/mL		(12 hour dosing): anti-Xa > 1.3 (24 hour dosing) anti-Xa > 2.1	4/17/2007	4/17/2007		Approved by SCPMG Laboratory Operations
Heparin (unfractionated)	IU/mL		anti-Xa > 0.8	8/15/2005	8/15/2005		Approved by SCPMG Laboratory Operations
Imipramine	ng/mL		≥ 500	10/3/1997	10/3/1997		Approved by SCPMG Laboratory Operations
Lead	mcg/dL		≥ 45	4/9/2007	4/9/2007		Approved by SCPMG Laboratory Operations
Lithium	meq/L		> 1.5	10/3/2007	10/3/2007		Approved by SCPMG Laboratory Operations
Nortriptyline	ng/mL		≥ 500	10/3/2007	10/3/2007		Approved by SCPMG Laboratory Operations
Phenobarbital	mcg/mL		> 50	6/10/2002	3/27/2002	Regional Chiefs of Neurology	Approved by SCPMG Laboratory Operations Committee 3/02, Approved by Regional Chiefs of Neurology, Approved by Chiefs of Primary Care
Phenytoin (Dilantin)	mcg/mL		> 25	6/10/2002	3/27/2002	Regional Chiefs of Neurology	Approved by SCPMG Laboratory Operations Committee 3/02, Approved by Regional Chiefs of Neurology, Approved by Chiefs of Primary Care
Phenytoin, Free	mcg/mL		> 3.0	10/3/1997	10/3/1997		Approved by SCPMG Laboratory Operations
Primidone (Mysoline)	mcg/mL		> 12.0	10/3/1997	10/3/1997		Approved by SCPMG Laboratory Operations

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Salicylate	mg/dL		Children (<14y): > 15.0; Adult: > 35.0	10/3/1997	10/3/1997		Approved by SCPMG Laboratory Operations
Tegretol (carbamazepine)	mcg/mL		> 15	6/10/2002	3/27/2002	Regional Chiefs of Neurology	Approved by SCPMG Laboratory Operations Committee 3/02, Approved by Regional Chiefs of Neurology, Approved by Chiefs of Primary Care
Theophylline	mcg/mL		> 20	10/3/1997	10/3/1997		Approved by SCPMG Laboratory Operations
Therapeutic Drugs		1 unit above therapeutic range, unless otherwise defined.		10/3/1997	10/3/1997	Kost, G. J., 1990. Critical Limits for Urgent Clinician Notification at US Medical Centers. JAMA 263(5): 704 -	Approved by Chiefs of Primary Care Approved by SCPMG Laboratory Operations Committee
Thiocyanate	mg/dL		> 2.5	10/3/1997	10/3/1997		Approved by SCPMG Laboratory Operations
Tobramycin (Peak)	mcg/mL		> 11	6/15/2011	6/15/2011		Approved by SCPMG Laboratory Operations
Tobramycin (Trough)	mcg/mL		> 2	6/15/2011	6/15/2011		Approved by SCPMG Laboratory Operations
Tobramycin (SDDA)	mcg/mL		≥ 0.5	6/15/2011	6/15/2011		Approved by SCPMG Laboratory Operations
Tobramycin (Random)	mcg/mL		> 11	10/3/1997	6/15/2011		Approved by SCPMG Laboratory Operations
Trazodone	ng/mL		> 5000	10/3/1997	10/3/1997		Approved by SCPMG Laboratory Operations

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Trimethoprim (Bactrim) & Sulfamethoxazole	mcg/mL		TMP: > 10.0; SMOX: > 200	10/3/1997	10/3/1997		Approved by SCPMG Laboratory Operations
Valproic Acid (Depakene)	mcg/mL		> 170	6/10/2002	6/10/2002	Regional Chiefs of Neurology	Approved by SCPMG Laboratory Operations Committee 3/02, Approved by Regional Chiefs of Neurology, Approved by Chiefs of Primary Care
Vancomycin (Trough)	mcg/mL		> 50	6/15/2011	6/15/2011	Regional Reference Laboratories and Infectious Disease Committee (RLID)	Approved by SCPMG Laboratory Operations
Vancomycin (Random)	mcg/mL		> 50	9/25/2006	6/15/2011		Approved by SCPMG Laboratory Operations
Volatiles, Blood Alcohol	mg/dL		Ethanol: > 200 Methanol: > 20 Acetone: > 50 Isopropanol: > 50	10/3/1997	10/3/1997		Approved by SCPMG Laboratory Operations
Warfarin (Coumadin)			INR > 5	9/23/2003	9/23/2003		Approved by SCPMG Laboratory Operations

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Point of Care

Analyte	Unit	Low Value	High Value	Effective Date	Date Revised and Approved	Literature Reference	Approvals
Glucose	mg/dL	> 1 month < 55 Neonatal: (less than 24 hrs < 35, greater than 24 hrs < 50)	> 400 neonatal: > 200	12/26/2012	7/24/2013	Regional Perinatal Services, Polocy on Identification and Management of Neonate with Hypoglycemia	Approved by SCPMG Laboratory Operations
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