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Dearborn – Farmington Hills – Grosse Pointe – Royal Oak – Taylor – Trenton – Troy – Wayne

CRITICAL (PANIC) VALUES
(Excluding Outreach Nursing Homes)

Red Alerts are called within 1 hour; 24 hours/7 days a week.
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CHEMISTRY	CRITICAL VALUES		Unit of measure	Inpatient	Outpatient/ Outreach	Outpatient/ Outreach
	Greater Than	Less Than		(RED Alerts)	(RED Alerts)	(BLUE Alerts)
Ammonia	120	--	mcmol/L	X	X	
Amylase	300	--	U/L	X	X	
AST (Aspartate Aminotransferase)	2000		U/L	X		X
Bilirubin, Total & Neonatal 0-23 hrs	7.9	--	mg/dL	X	X	
24-35 hrs	10.9	--	mg/dL	X	X	
36-47 hrs	13.9	--	mg/dL	X	X	
48-59 hrs	14.9	--	mg/dL	X	X	
60-71 hrs	15.9	--	mg/dL	X	X	
72-83 hrs	16.9	--	mg/dL	X	X	
84-144 hrs	17.9	--	mg/dL	X	X	
145 hrs-13 days	15.0	--	mg/dL	X	X	
14-20 days	15.0	--	mg/dL	X	X	
Bilirubin, Direct,Neonatal 0-60 days	1.0	--	mg/dL	X		X
BUN	100	--	mg/dL	X		X
Results will not be called to designated Royal Oak nephrologists						
Calcium, Ionized	6.5	3	mg/dL	X	X	
Calcium, Total	13	6.5	mg/dL	X	X	
Creatine Kinase	10,000	--	U/L	X	X	
Creatinine 0 - 18 years	2.8	--	mg/dL	X	X	
19 - 116 years	7.0	--	mg/dL	X		X
Results will not be called to designated Royal Oak nephrologists						
>116 years	2.8	--	mg/dL	X	X	
Glucose,FBS or Random 0–23 mos	180	45	mg/dL	X	X	
IP, EC or POC: 24 months – 16 years	300	50	mg/dL	X		
OP/Outreach: 2 years–16 years	300	--	mg/dL		X	
OP/Outreach: 2 years–16 years	--	40	mg/dL			X
IP, EC or POC: 17-116 years	500	50	mg/dL	X		
IP, EC or POC: >116 years	300	50	mg/dL	X		
OP/Outreach: 17-116 years	500	--	mg/dL		X	
OP/Outreach: 17-116 years	--	40	mg/dL			X
Glucose, CSF 0-24 months	200	--	mg/dL	X	X	
>24 months	300	--	mg/dL	X	X	
HAV IgM	Critical value reported if test is positive			X		X
Lactic Acid	3.9	--	mmol/L	X		X
Magnesium	4.5	1	mg/dL	X	X	

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	Greater Than	Less Than		(RED Alerts)	(RED Alerts)	(BLUE Alerts)
Osmolality	320	240	mOsmol/kg	X	X	
pH, Venous	7.6	7.2		X	X	
Phosphorus 0-14 days	10.5	--	mg/dL	X		X
> 14 days - Adult	>10	<1	mg/dL	X		X
Thyroid Stimulating Hormone 0-2 days	34.6	--	uIU/mL	X		X
> 2 days - < 3 years	30	0.1	uIU/mL	X		X
FT4 OP<3 years	5	0.4	ng/dL	X		X
Troponin I*	0.29	--	ng/mL	X	X	
Results on patients from 6-East (Royal Oak) will NOT be called to the physician or nursing unit						
Uric Acid	15	--	mg/dL	X		X
Uric Acid – Rasburicase	15	--	mg/dL	X	X	
Electrolytes:						
Sodium 0-1 day	166	120	mmol/L	X	X	
2 Days – 17 years	155	125	mmol/L	X	X	
18-116 years	160	120	mmol/L	X	X	
> 116 years	155	125	mmol/L	X	X	
Potassium 0-1 day	7.5	2.7	mmol/L	X	X	
2 days – Adult	6.0	2.5	mmol/L	X	X	
Chloride	130	75	mmol/L	X		X
CO_2	40	10	mmol/L	X	X	
Gases:						
Oxyhemoglobin (arterial specimen only)	--	85	%	X	X	
PO_2 (arterial specimens only)	--	50	mmHg	X	X	
PCO_2 (arterial & capillary specimens)	70	--	mmHg	X	X	
pH	7.6	7.2		X	X	
Total CO_2	40	10	mmol/L	X	X	
Hemoglobin 0 - 14 days	25	10	g/dL	X	X	
15 - 28 days	20	9	g/dL	X	X	
29 days – 2 years	20	8	g/dL	X	X	
3 years–Adult	20	7	g/dL	X	X	
Carboxyhemoglobin	20	--	%	X	X	

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	Greater Than	Less Than		(RED Alerts)	(RED Alerts)	(BLUE Alerts)
Methemoglobin	9.9	--	%	X	X	
Sulfhemoglobin	Positive			X	X	
CHEMISTRY	**CRITICAL VALUES**		**Unit of measure**	**Inpatient**	**Outpatient/ Outreach**	**Outpatient/ Outreach**
Toxicology/TDM	**Greater Than**	**Less Than**		**(RED Alerts)**	**(RED Alerts)**	**(BLUE Alerts)**
Acetaminophen	50	--	mcg/mL	X	X	
Acetone	>50	--	mg/dL	X	X	
Amikacin (peak)	35	--	mcg/mL	X		X
Amikacin (trough)	10	--	mcg/mL	X		X
Amitriptyline & Nortriptyline	500	--	ng/mL	X	X	
Nortriptyline	500	--	ng/mL	X	X	
Caffeine	30	--	mcg/mL	X		X
Carbamazepine	15	--	mcg/mL	X		X
Carbamazepine, unbound	5	--	mcg/mL	X		X
Carbamazepine epoxide	7	--	mcg/mL	X		X
Clomipramine	1000 (+ metabolite)	--	ng/mL	X		X
Clozapine	1000	--	ng/mL	X		X
Cyclosporine A	400	--	ng/mL	X		X
Cyclosporin 2	>1200	--	mcg/mL	X		X
Desipramine	500	--	ng/mL	X	X	
Digoxin 0-70 years	2.5	--	ng/mL	X	X	
> 70 years	2	--	ng/mL	X	X	
Doxepin	500 (+ metabolite)	--	ng/mL	X	X	
Ethanol 0-12 years	50	--	mg/dL	X	X	
13 - 20 years	250 (tox)*	--	mg/dL	X	X	
*Ethanol for Toxic Alcohol screens in Toxicology does not have age specific criticals. Only critical is 250.						
≥21 years	400	--	mg/dL	X	X	
≥100 years	250	--	mg/dL	X	X	
Ethosuximide	100	--	mcg/mL	X		X
Ethylene Glycol, S	50		mg/dL	X	X	
Fluoxetine	2000 (+ metabolite)	--	ng/mL	X		X

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Toxicology/TDM continued	**Greater Than**	**Less Than**		**(RED Alerts)**	**(RED Alerts)**	**(BLUE Alerts)**
Gabapentin	20	--	mcg/mL	X		X
Gentamicin (peak)	12	--	mcg/mL	X		X
Gentamicin (trough)	2.5	--	mcg/mL	X		X
Imipramine	500 (+ metabolite)	--	ng/mL	X	X	
Isopropanol	50	--	mg/dL	X	X	
Lamotrigine	25	--	mcg/mL	X		X
Lefunomide (metab)	100		mcg/mL	X		X
Levetiracetam	70	--	mcg/mL	X		X
Lidocaine	7	--	mcg/mL	X	X	
Lithium	1.5	--	mmol/L	X	X	
Methanol	15	--	mg/dL	X	X	
Mycophenolic Acid	10	--	mcg/mL	X		X
Oxcarbazepine Metabolite (MHD)	50	--	mcg/mL	X		X
Pentobarbital	20	--	mcg/mL	X	X	
Phenobarbital	50	--	mcg/mL	X	X	
Phenytoin	25	--	mcg/mL	X	X	
Phenytoin, Free	3	--	mcg/mL	X	X	
Primidone	15	--	mcg/mL	X		X
Propylene Glycol, Serum	40	--	mcg/mL	X	X	
Salicylate	30	--	mg/dL	X	X	
Sirolimus	30	--	ng/mL	X		X
Tacrolimus/FK 506	20	--	ng/mL	X		X
Theophylline	25	--	mcg/mL	X	X	
Thiocyanate	15	--	mcg/mL	X		X
Tobramycin (peak)	12	--	mcg/mL	X		X
Tobramycin (trough)	2.5	--	mcg/mL	X		X
Trazodone	5	--	mcg/mL	X		X
Topiramate	50	--	mcg/mL	X		X
Trimipramine	500 (+ metabolite)	--	ng/mL	X		X
Valproic acid ≥ 15 years	150	--	mcg/mL	X		X
Valproic acid < 15 years	200	--	mcg/mL	X		X

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Toxicology/TDM continued	**Greater Than**	**Less Than**		**(RED Alerts)**	**(RED Alerts)**	**(BLUE Alerts)**
Vancomycin (peak)	50	--	mcg/mL	X		X
Vancomycin (trough)	20	--	mcg/mL	X		X
Zonisamide	80	--	mcg/mL	X		X
Voriconazole	>6.0	--	mcg/mL	X		X
Fluorocytosine	>100	--	mcg/mL	X		X
Urinalysis						
Ketones All Ages ≥8 days	79	--	mg/dL	X		X
Results will not be called to Emergency Centers						
Sperm Presence Females <16 years Outpatients			Present			X
Sperm Presence Females: NH			Present			X
Sperm Presence Females: Inpatients, EC			Present	X		
Sperm Presence Males < 10 years			Present	X		X

HEMATOLOGY		CRITICAL VALUES		Unit of measure	Inpatient	Outpatient/ Outreach	Outpatient/ Outreach
		Greater Than	**Less Than**		**(RED Alerts)**	**(RED Alerts)**	**(BLUE Alerts)**
Hematocrit	0-14 days	70	15	%	X	X	
Hematocrit	≥ 15 days	60	15	%	X	X	
Hemoglobin	0 - 14 days	25	10	g/dL	X	X	
	15 - 28 days	20	9	g/dL	X	X	
	29 days – 2 years	20	8	g/dL	X	X	
	3 years - Adult	20	7	g/dL	X	X	
Platelets	0 - 30 days	1,000	50	bill/L	X	X	
	31 days - Adult	1,000	20	bill/L	X	X	
WBC, Total		100	2	bill/L	X	X	
Blasts >5%		If previously unknown	--	%	X	X	
Blasts <5%		If previously unknown	--	%	X		X

HEMATOLOGY continued	CRITICAL VALUES		Unit of measure	Inpatient	Outpatient/ Outreach	Outpatient/ Outreach
	Greater Than	**Less Than**		**(RED Alerts)**	**(RED Alerts)**	**(BLUE Alerts)**
Blasts, CSF	≥ 1	--	per mcL	X*		X
						*X: Troy & Grosse Pointe will call during dayshift only
Neutrophils	--	0.5	bill/L	X	X	

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Fibrinogen	--	100	mg/dL	X	X	
INR	≥ 5			X	X	
PTT	110	--	sec	X	X	
Outpatient CBC						
Hemoglobin	--	7	g/dL	X	X	
Platelets	--	20	bill/L	X	X	
WBC	--	2	bill/L	X	X	
Outpatient CBCD						
Hemoglobin	--	7	g/dL	X	X	
Platelets	--	20	bill/L	X	X	
WBC	--	2	bill/L	X	X	
Neutrophils	--	0.5	bill/L	X	X	
Chemo CBC (No critical WBC or PLT)						
Hemoglobin	--	5.5	g/dL	X	X	
Chemo CBCD (No critical WBC, neut or PLT)						
Hemoglobin	--	5.5	g/dL	X	X	
Outpatient Chemo CBC (no critical WBC)						
Hemoglobin	--	6	g/dL	X	X	
Platelets	--	20	bill/L	X	X	
Outpatient Chemo CBCD (no critical WBC or neut)						
Hemoglobin	--	6	g/dL	X	X	
Platelets	--	20	bill/L	X	X	

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SPECIAL CHEMISTRY	CRITICAL VALUES		Unit of measure	Inpatient	Outpatient/ Outreach	Outpatient/ Outreach
	Greater Than	Less Than		(RED Alerts)	(RED Alerts)	(BLUE Alerts)
Heparin Platelet Factor 4 Antibody	1.999	--	OD	X		X
Monoclonal Protein, if new	2.9	--		Called by Pathologist		

MICROBIOLOGY	Inpatient	Outpatient/ Outreach	Outpatient/ Outreach
Critical values reported if test is **positive** on the following tests:	(RED Alerts)	(RED Alerts)	(BLUE Alerts)
Acid-Fast Bacilli (smear, culture, PCR)	X		X
Blastomyces, Histoplasma, Coccidioides, Candida auris, Cryptococcus (antigen, culture, PCR)	X		X
Blood culture (first positive finding)	X	X	
Blood parasite (antigen, smear)	X	X	
Bordetella pertussis (PCR)			X
Brucella,Francisella, Bacillus anthracis, Yersinia pestis culture, Burkholderia mallei or pseudomallei, pox viruses, novel viruses	X	X	
Clostridium difficile (toxin or PCR positive)			X
Coronavirus (COVID-19)		NH Only	
CRE/MDR Organisms			X
CSF positive (gram stain, culture, antigen, or PCR for bacteria, fungi or viruses)	X	X	
Eye Culture (Pseudomonas, AFB, fungi, and all organisms recovered on corneal scrapings)	X	X	
Gram stain (STAT)	X	X	
Group A Strep (wound, skin, soft tissue) – culture or PCR			X
Internal Organ Tissue – gram stain or culture (excludes GI and Autopsy specimens)	X		X
Legionella Ag	X		X
N. gonorrhoeae or C. trachomatis positive by culture or PCR (<12 years)			X
Ova and parasite (antigen, microscopy, PCR)			X
Pneumocystis smear			X
Sterile Body Fluid positive - smear, culture or PCR for bacteria, fungi, or viruses (includes amniotic, bone marrow, organ preservation, pancreatic, pericardial, pleural, synovial, and ocular - aqueous or vitreous)	X	X	
Stool culture (E. coli O157:H7)			X
Strep Group B, DNA Ampl Probe (Intrapartum only)	X		

TRANSFUSION MEDICINE / BLOOD BANK	Inpatient	Outpatient/ Outreach	Outpatient/ Outreach
	(RED Alerts)	(RED Alerts)	(BLUE Alerts)
Positive Direct Antiglobulin Test (DAT) on a neonate (regardless of strength of reaction)	X	NA	NA
Suspected acute hemolytic transfusion reaction	X	X	NA

Document control: Revisions made through the Royal Oak Clinical Pathology Administration office.
Document Control Distribution: External online link sent to Beaumont Laboratory (FH, GP, Outreach, RO, Troy) medical, administrative and supervisor