

Navicent Health Work Instruction

Department: MCNH Laboratory	Work Instruction Name: Laboratory Normal Ranges	Work Instruction #: 307.4515.
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1.0 Purpose

In accordance with MCNH Laboratory Quality Management and Quality Control Policy, the following work instruction provides normal ranges to allow proper interpretation of patient/client laboratory data.

2.0 Scope

All Navicent Health laboratory employees and allied health professionals.

3.0 Definitions and Acronyms

Terms & Definitions	Descriptions
CFR	Code of Federal Regulations
CAP	College of American Pathologists
CMS	Centers for Medicare & Medicaid Services
CLIA	Clinical Laboratory Improvement Amendments

4.0 Process Flow Diagram

The reference (normal) range must be established or verified for each analyte and specimen source, when appropriate. The laboratory must report reference (normal) intervals with patient/client results, where such exist.

TEST	NORMAL RANGE	CRITICAL VALUE
GENERAL CHEMISTRY		
Albumin, g/dl	3.5 – 5.0 1 Yr - Adult 3.2 - 4.8 >59 Yr 2.8 - 4.6 0 - 11 Mo.	
Alk, Phosphatase, u/l	35 – 141 Adult 90 – 273 0 - 15 Days 134 - 518 15 Days - 12 Mo. 156 - 369 1 Yr - 10 Yr 141 - 460 10 Yr - 13 Yr 62 - 517 13 - 14 Yr 54 - 365 15 - 17 Yr 48 - 164 17 - 19 Yr	
Ammonia, um/l (heparin plasma collection tube)	14 - 72 Venous 9 - 51 Arterial	

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TEST	NORMAL RANGE	CRITICAL VALUE
Amylase, u/l	25 – 125 0 - 70 Yr 20 - 160 >70 Yr	
B-Hydroxybutyrate, mmol/L	0 - 0.30 Normals are for 12 hr fast before blood collection. BHB is major blood ketone with 4x conc of acetone & AA. BHB inc in response to fasting but should be less than 0.4 at 12 hr. BHB in DKA is generally >2.0. BHB levels of 1 - 1.5 are typically reported in patients with resolved ketosis.	
Bilirubin, Total, mg/dl	0.1 – 1.2 Adult 0.1 - 6.0 0 - 24 Hr 0.1 - 10.0 24 Hr - 48 Hr 0.1 - 12.0 48 Hr - 5 Day 0.1 - 10.0 5 - 15 Day 0.1 - 0.7 15 Day - 1 Yr 0.1 - 0.8 1 Yr - 18 Yr	
Bilirubin, Neonatal, mg/dl	0.1 – 6.0 0 – 24 Hr 0.1 - 10.0 24 Hr - 48 Hr 0.1 - 12.0 48 Hr - 5 Day 0.1 - 10.0 5 - 15 Day 0.1 - 0.7 15 Day - 1 yr 0.1 - 0.8 1 yr - 18 yr	>18 0-1 Month Old
Bilirubin, Conjugated	0.1 – 0.5 16 Days - Adult 0.3 - 0.7 0 - 15 Days	
BUN, mg/dl	3 - 23 0 - 14 Days 3 - 17 15 Days - 1 Yr 7 - 23 1 Yr - 50 Yr 8 - 26 > 50 Yr	
Calcium, mg/dl	8.5 – 10.3 Adult 7.6 – 10.4 0 – 10 Days	< 6.0, > 12.0
Chloride meq/l	98 - 110 98 - 113 0 - 30 Days	
Cholesterol, mg/dl	100 - 199 Adult 100 - 170 1 – 19 Years 53 - 170 0 – 1 Year	
CO2, meq/l	20 - 30 Adult 14 - 26 1 - 5 Yr 11 - 24 0 - 1 Yr	< 10, > 40
CPK, u/l	43 - 312 Male 43 - 237 Female	
Creat., mg/dl	0.72 – 1.25 Male 0.57 – 1.11 Female 0.42 – 1.10 0 - 14 Days	

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TEST	NORMAL RANGE	CRITICAL VALUE
	0.31 - 0.58 15 Days - 11 Mo. 0.39 - 0.75 1 -14 Years 0.65 - 1.15 15 - 17 Yr M 0.59 - 0.93 15 - 17 Yr F	
CRP – hs, mg/dl	0.02 – 0.50 Adult 0.02 - 0.62 0 - 14 Days < 0.1 Low CHD Risk 0.1 – 0.3 Average CHD Risk > 0.30 High CHD Risk > 1.0 Suspect Acute Inflammation, repeat hsCRP for CHD Risk assessment in 2 wks	
Glucose, mg/dl	70 – 99 Adult 40 - 60 0 - 1 Day 50 - 80 5 Day - 11 Mo. 60 - 99 1 - 11 Yr	< 40 Outpatient, < 1 mth, < 50 Inpatient, * > 500* All (*first incident only within 45 mins for inpatients)
GGT, u/l	12 -64 Male 9 - 54 Female 23 - 219 0 - 14 Days 8 - 127 15 Days - 1 Yr	
Hemoglobin A1c Stat	4.2 - 5.6 Normal 5.7 - 6.4 Inc Risk ≥6.5 Consistent with diabetes	
Iron, ug/dl	50 - 175 Male 45 - 170 Female 16 - 128 0 - 14 Days	
Iron – TIBC	250 - 450	
Iron - % Sat.	20 – 50 Male 15 - 50 Female	
K+, meq/l	3.5 – 5.1 Adult 4.0 – 6.2 0 - 1 Mo. 4.0 - 5.7 1 - 3 Mo. Serum (plasma is 0.2 lower)	< 2.6, >6.2 “ <7days old <2.5, >6.5
Lactic Acid mmol/L	0.5 – 2.2 Venous Blood 0.4 - 1.6 Arterial Blood	≥ 4.0
Lipase, u/l	8 - 78 4 - 40 0 - 18 Yr	
LDH, u/l	121 - 246 Adult 309 - 1222 0 - 14 Days 163 - 452 15 Days - 1 Yr	

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TEST	NORMAL RANGE	CRITICAL VALUE
	192 - 321 1 - 10 yr 130 - 283 10 - 18 Yr	
HDL, Chol mg/dl	40 – 60 Adult > 60 Low Risk Adult 45 - 60 0 - 19 Yr	
LDL, Chol mg/dl	50 - 129 < 100 Optimal / Low Risk 30 - 110 0 - 19 Yr	
Magnesium, mg/dl	1.6 - 2.6 2.0 - 3.1 0 - 1 Yr	< 1.2, > 4.9
Na+, meq/l	136 – 144	<120, > 155
Osmolality, mOsm/kg	275 – 295	< 250, > 320
PCHE _k u/L	4.9 - 11.9	
Phosphorus, mg/dl	2.3 – 4.7 Adult 5.6 - 10.5 0 - 14 Days 4.8 - 8.4 15 Days - 1 Yr 4.3 - 6.8 1 - 5 Yr 3.2 - 6.2 5 - 15 Yr 2.9 - 5.0 16 - 18 Yr	< 1.0 “ “ “
SGOT (AST), u/l	5 - 42 Adult 32 - 162 0 – 15 Days 20 - 67 15 Days - 1 Yr 20 - 47 1 - 7 Yr	
SGPT (ALT), u/L	5 - 49 Adult 5 - 33 0 - 1 Yr 8 - 25 1 - 18 Yr	
Total Protein, g/dl	6.1 – 8.3 Adult 5.2 – 7.2 0 – 1 yr 6.1 – 7.7 1 Yr - 5 yr	
Triglycerides, mg/dl	20 – 149 Adult 20 - 99 0 - 9 Yr 20 - 129 10 - 19 Yr	
Uric Acid, mg/dl	4.4 - 7.6 Adult Male <60 2.3 – 6.6 Adult Female <60 4.2 - 8.0 Male ≥60 Yr 3.5 - 7.3 Female ≥60 Yr 2.0 - 5.5 0 - 12 Yr	

TEST	NORMAL RANGE	CRITICAL VALUE
CALCULATED VALUES		
BUN/Creatinine Ratio	6 – 25	

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TEST	NORMAL RANGE	CRITICAL VALUE
Anion Gap (Na-(Cl+CO2))	5 -13	
Albumin/Globulin Ratio	1.2 – 3.1	
TIBC, ug/mL	250 – 450	
% SAT, %	20 – 50 Male 15 – 50 Female	
LDL, mg/dl	50 – 129 > 19 Yr <100 optimal / low risk 30 - 110 0 - 19 Yr	
Non-HDL Chol	50 - 159 Adult <130 Desirable 30 - 144 0 - 19 Yr <120 Desirable 0 - 19 Yr	
Corrected Calcium, mg/dL CA+0.8 x(4.0-ALB)	8.50 - 10.20	

TEST	NORMAL RANGE	CRITICAL VALUE
BLOOD GAS		
pH	7.35 – 7.45 Arterial 7.33 – 7.43 Venous	≤ 6 mths, < 7.2, > 7.6, 6 mths–Adult < 7.3, > 7.6
PCO2, mm/Hg	36 – 46 Arterial 38 – 48 Venous	-arterial- < 20, > 60
PO2, mm/Hg	85 – 100 Arterial 25 – 47 Venous	< 50

TEST	NORMAL RANGE	CRITICAL VALUE
COOX		
Total Hb, g/dl	14.5 – 16.5 Male 12.7 – 14.7 Female	
% O2 Hb, %	94 – 99 Male, Arterial 94 – 97 Female, Arterial 65 – 85 Venous	
CO Hb, %	0 – 1.5 Non-smokers < 5.0 Smokers	> 20 > 20
Met Hb, %	0.4 – 1.5	
O2, vol %	15 - 23	

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TEST	THERAPEUTIC RANGE	TOXIC (CRITICAL RANGE)
Methanol	None Detected	> 50
Urine Drug Screening		
Amphetamine	None Detected	
Benzodiazepine	None Detected	
Barbiturate	None Detected	
Cocaine Metabolite	None Detected	
Ecstasy	None Detected	
Heroin	None Detected	
Opiate	None Detected	
Oxycodone	None Detected	
PCP	None Detected	
THC	None Detected	
Ethanol, urine, mg/dL	<20	

TEST	NORMAL RANGE	CRITICAL VALUE
URINE CHEMISTRIES		
Acetone	None Detected	
Amylase, Urine	14 - 441 Male 19 - 402 Female	
Amylase Urine, Timed (≥2 hr collection) Calc =(U/I) X (V in L) / #Hr (collection)	Any timed collection of 1 hr or more. 1 - 17 U/Hr	
Creatinine, urine, g/24 hrs	0.7 – 2.5 M ≥18 Yr 0.7 – 2.3 F ≥18 Yr 0.11 - 0.68 0-8 Yr 0.17 - 1.41 9-12 Yr 0.29 - 1.87 13-17 Yr	
Creatinine Clearance, ml/mon/1.73 m2	77 - 159 Adult Male 72 - 161 Female 18-39 Yr	

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TEST	NORMAL RANGE	CRITICAL VALUE
	62 - 139 56 - 131 70 - 130	Female 40-59 Yr Female >60 Yr 0 - 17 Yr
Calcium, urine, mg/24 hrs	50 – 150 100 – 300	Low Calcium diet Avg-High Calcium diet
Chloride (Cl), urine, meq/24 hr	110 – 250	
Fractional Excretion of Sodium (FeNa) UrNa/Serum Na x 100	<1% >1.5%	Prerenal Azotemia Acute Tubular Necrosis
Glucose, Urine, mg/dl	<15 Tietz Clinical Guide 3rd Edition	
Magnesium, urine, mg/24 hrs	70 – 120	
Microalbumin/Creat Ratio Random	<30 mg/g Creat Microalbuminuria 30-299 mg/g Creat Clinical Albuminuria ≥300 mg/g Creat	
Timed	<20 ug/minute Microalbuminuria 20-200 ug/min Clinical Albuminuria >200 ug/min	
24 Hr	<30 mg/24 hr Microalbuminuria 30-300 mg/24 hr Clinical Albuminuria ≥300 mg/24 hr ADA Classification of MA	
Microalbumin, urine, mg/dl	0 – 1.9 or <30 mg/24 hr	
Osmolality, urine, mOsm/kg	390 – 1090	
Phosphorous, urine Random mg/dl 24 hr, mg/day	0 - 150 mg/dl 400 - 1300 mg/day, on restricted diet	
Potassium (K), urine meq/24 hr	25 – 125	
Protein, urine, mg/dl g/24 hrs	0 - 14 mg/dl or 0 - 199 mg/g Creatinine 0.05 - 0.299 g/day after exercise 0.05 - 0.080 g/day at rest	
Sodium, urine meq/24 hr	40 – 220	

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TEST	NORMAL RANGE	CRITICAL VALUE
Urea nitrogen, urine, g/24 hrs	6 – 20	
Uric Acid, urine, mg/24 hrs	250 – 800	
Urine Protein/Urine Creatinine Ratio	< 0.20	
CSF & OTHER FLUID CHEMISTRIES		
CSF Fl. Prot., mg/dl	15 – 45 20 – 80	< 1 month
CSF IgG, mg/dl	0.5 - 8.1	
CSF Albumin, mg/dl	13.0 - 27.0	
CSF Index, ratio	0.30 - 0.80	
CSF Glucose, mg/dl	40- 70 60 - 80	Adult 0 - 12 Yrs
CSF Chloride, mEq/L	118 - 132	
CSF Lactic Acid, mmol/L	0.5 - 2.8	
Sweat Chloride, mM/L	0 – 29 0 – 6 mos Normal 0 – 39 6mos - Adult Normal 30 – 59 0 – 6 mos Borderline (indeterminate) 40 – 59 6mos - Adult Borderline (indeterminate) >/=60 0 - Adult Consistent with CF	
Lamellar Body Count (LBC), particles/uL	> 50k 50-15 <15	Mature Transitional Immature
TEST	NORMAL RANGE	CRITICAL VALUE
IMMUNOASSAY / IMMUNOLOGY		
ACTH, pg/ml	10 – 60	
AFP (tumor, marker), ng/ml	< 9	
Alpha 1 antitrypsin, mg/dl	75 – 190	
Anti-CCP, U/mL	<5.0	
Anti-Thyroid Peroxidase AB, IU/ml	<5.61	
B12, pg/ml	213 - 1041 < 150 150 - 400	Deficiency Borderline, consider homocysteine evaluation
BNP, pg/ml	< 100 100 - <200 200 - 400 > 400	Likely compensated CHF Likely moderate CHF Likely moderate to severe CHF
C-Peptide, ng/ml	0.78 - 5.2	

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TEST	NORMAL RANGE	CRITICAL VALUE
CA-125, U/ml	< 35	
CA 19-9, U/ml	0 - 37	
CEA, ng/ml	< 3 Non smoker < 5 Smoker	
Ceruloplasmin, mg/dl	22.9 – 49.0	
CKMB, ng/ml	0.0 - 7.2 Male 0.0 - 3.4 Female	
Complement C-3, mg/dl	82 - 193 >1 Yr 50 - 121 0-14 Days 51 - 160 15 Days - 1 Yr	
Complement C-4, mg/dl	15 - 57 7 - 30 0-1 Yr 13 - 37 1-19 Yr	
Cortisol, ug/dl	5.7 - 21.0 AM (collected between 6-8 am) 1.7 - 11.7 PM (collected between 4-6 pm) Interp: AM normals for 6-8AM collect, PM normals for 4-6PM collect, at 10 PM normal <50% of 8 AM value	
Cystatin C, mg/L	0.8 - 2.3 0-3 Mo. 0.7 - 1.5 4-11 Mo. 0.5 - 1.3 1-17 Yr 0.5 - 1.1 18-22 Yr 0.60 - 1.03 23-29 Yr Male 0.64 - 1.12 30-39 Yr Male 0.68 - 1.22 40-49 Yr Male 0.72 - 1.32 50-59 Yr Male 0.77 - 1.42 60-69 Yr Male 0.82 - 1.52 >70 Yr Male 0.57 - 0.90 23-29 Yr Female 0.59 - 0.98 30-39 Yr Female 0.62 - 1.07 40-49 Yr Female 0.64 - 1.17 50-59 Yr Female 0.66 - 1.26 60-69 Yr Female 0.68 - 1.36 70-80 Yr Female 0.70 - 1.45 >80 Yr Female eGFR >60 Not calculated mL/min/BSA for <18 Yr	
DHEA Sulphate, ug/dl	24 - 303 M&F, 0 - <1 week 9 - 317 M&F, 1-4 weeks	

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TEST	NORMAL RANGE	CRITICAL VALUE
	32 - 214 M&F, 1-12 mo. 32 - 276 M&F, 1-4 yrs 24 - 210 M&F, 5-10 yrs 17 - 242 Male, 11-14 yrs 45 - 385 Male, 15-19 yrs 238 - 539 Male, 20-24 yrs 168-592 Male, 25-34 yrs 140 - 484 Male, 35-44 yrs 136-448 Male, 45-54 yrs 49 - 361 Male, ≥55yrs 9 - 170 Female, 11-14 yrs 61 - 494 Female, 15-19 yrs 134 - 407 Female, 20-24 yrs 96 - 512 Female, 25-34 yrs 75 - 410 Female, 35-44 yrs 56 - 283 Female, 45-54 yrs 30 - 182 Female, ≥55 yrs	
Estradiol, pg/ml	ND – 75 Male < 20 – 47 Female: Post-menopausal 27 – 122 Mid-follicular 49 – 291 Mid-luteal 95 – 433 Peri-ovulatory	
Ferritin, ng/ml	24 – 336 Male 15 – 204 Female >336 Male Iron Overload >307 Female Iron Overload	
Folate, ng/ml	5.9 – 20.0 <4.0 Suggestive of deficiency 4.0 - 5.8 Boderline	
FSH, MIU/ml	1.0 – 12.0 Male ≥19 Yr 0 - 1.6 Male 1-9 Yr 0 - 2.4 Male 0-11 Mo 0.4 - 5.1 Male 10-18 Yr 0.5 - 11 Female 0-11 Mo 0.4 - 5.5 Female 1-10 Yr 0.3 - 7.8 Female 11-14 Yr Interp >14 Y 3.0 – 8.1 Follicular Phase 2.5 - 17.0 Mid-cycle peak 1.3 - 5.5 Luteal Phase 25 - 135 Post-menopausal	
Gliadin (Deamidated) Ab, IgA & IgG, U	<20.0 Negative 20 – 30 Weak Positive >30 Positive	

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TEST	NORMAL RANGE	CRITICAL VALUE
Haptoglobin, mg/dl	30 – 258	
HCG, mIU/ml	0 – 5 0 - 2 ≤ 7 5 - 24 ≥25	Females Males Female > 40 yrs Indeterminate for Preg, consider repeat in 72 hrs Positive for Preg
Hemoglobin A1C, %	4.2 – 5.6 5.7 – 6.4 ≥6.5	Increased risk Consistent with Diabetes
Homocysteine, umol/l (heparin plasma)	5.00 – 13.00 < 10 >13	Desirable, CV risk Abnormal in patients evaluated for nutritional deficiencies (B12 & Folate)
IgA, mg/dl	65 - 421 63 - 484 69 - 517 101 - 645 1 - 34 8 - 91 30 - 150 50 - 220 50 - 290	Female 19-60Yr Male 19-60 Yr Female >60 Yr Male >60 Yr 0-3 Mo 3 Mo - 3 Yr 3-6 Yr 6-14 Yr 14-18 Yr
IgG, mg/dl	552 - 1631 540 - 1822 660 - 1530 540 - 1360 320 - 1150 110 - 700 320 - 1400	Female ≥19 Yr Male ≥19 Yr 10-19 Yr 4-<10 Yr 1-<4 Yr 15 Days - <1 Yr 0-<15 Days
IgM, mg/dl	33 - 293 22 - 240 50 - 190 40 - 150 20 - 90 10 - 70 10 - 40	Female ≥19 Yr Male ≥19 Yr Female 1-19 Yr Male 1-19 Yr 13 wk - <1 Yr 15 days - <13 wk 0 - <15 Days
Insulin, uIU/ml	2.9 - 25	
Kappa Free Light Chain, Serum, mg/L	3.30 – 19.40	
Kappa Free Light Chain, Urine, mg/L	0.39 – 15.1	

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TEST	NORMAL RANGE	CRITICAL VALUE
Lambda Free Light Chain, Serum, mg/L	5.71 – 26.30	
Lambda Free Light Chain, Urine, mg/L	0.81 – 10.1	
K/L Serum Ratio	0.26 – 1.65	
K/L Urine Ratio	0.461 – 4.00	
LH, MIU/ml	0 - 2.9 M&F 3-11 Mo 0 - 0.5 M&F 1-9 Yr 0 - 4.3 M&F 10-12 Yr 0.3 - 6.5 F 13-14 Yr 0 - 4.1 M 13-14 Yr 0.6 - 12.1 M ≥15 Yr Females ≥15 Yr 1.8 – 11.8 Follicular Phase 7.5 - 89 Mid-cycle Peak 0.5 - 14.0 Luteal Phase 5.1 – 62.0 Post-menopausal	
Myoglobin, ng/ml	0 - 92 Male 0 - 80 Female	
PTH, pg/mL (heparin plasma, no gel tube)	16 - 63 0-8 Yr 22 - 88 9-16 Yr 12 - 84 >16 Yr	
PTH, Intraoperative, pg/ml	12 – 72	
Prealbumin, mg/dl	2 - 12 0-14 Days 5 - 24 15 days - 1 Yr 12 - 23 1-5 Yr 14 - 26 5-13 Yr 18 - 31 13-16 Yr 17 - 35 16-19 Yr 16 - 45 19-60 Yr 14 - 42 >60 Yr	
Procalcitonin, ng/ml	0.05 – 0.09 > 2.0 High risk of sepsis	
Progesterone, ng/ml	0 - 0.7 0-11 Mo 0 - 0.3 1-9 Yr 0.1 - 0.8 10-14 Yr 0.1 - 0.6 Male 15-18 Yr 0 - 0.2 Male >18 Yr Female Interp Table Normal Menstruating Female Follicular Phase <0.3 Luteal Phase 1.2-15.9	

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TEST	NORMAL RANGE	CRITICAL VALUE
	Postmenopausal <0.2 Pregnant Females: First Trimester 2.8-147 Second Trimester 22.5-95.3 Third Trimester 27.9-242.5	
Prolactin, ng/ml	3.46 - 19.4 Male 3.0 - 27 Female:	
Prostate Specific Antigen, (PSA), ng/ml	0 – 4 0 – 2.5 40 – 49 years 0 – 3.5 50 – 59 years 0 - 4.5 60 – 69 years 0 – 6.5 > 69 years	
Rheumatoid Factor, u/ml	0 – 30	
RBC Folate, ng/ml	266 - 1356 ng/ml packed RBC	
Testosterone, ng/dl	8.6 - 299 Male, 0 day-6 Mo 0 - 35.7 Male, 6 Mo - <11 years 0 - 444 Male, 11 – <14 years 36 - 632 Male, 14 – <16 years 147 - 795 Male, 16- <19 years 240 - 871 Male, 19-50 years 221 - 716 Male, >50 years 0 - 61 Female, 4 days- <9 years 0 - 24.2 Female, 9- <13 years 13 - 54 Female, 14- <50 years 12 - 36 Female, ≥50 years	
T3, Free, pg/ml	1.71 - 3.83	
T3, Total, ng/dl	113 - 189 1-11 Yr 98 - 176 12-14 Yr 92 - 156 15-18 Yr 58- 160 ≥18 Yr	
T4, ug/dl	6.63 - 10.79 1-8 Yr 5.95 - 9.78 9-11 Yr 5.57 – 9.09 12-14 Yr 5.34 – 12.19 ≥15 Yr	
T4, Free (measured), ng/dl	1.05 - 3.21 5 - <15 Days 0.68 - 2.53 15 - <30 Days 0.89 - 1.8 1 Mo - 1 Yr 0.89 - 1.37 1 - <18 Yr 0.70 - 1.48 >18 Yr	
FTI, ug/mL	5.05 – 9.42	

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TEST	NORMAL RANGE	CRITICAL VALUE
T-Uptake, T-Uptake Units	0.69 – 1.41	
TSH, UIU/ml	0.40 - 15 0-3 Days 0.37 - 5.54 4 Days - 6 Mo 0.61 - 4.43 6 Mo - <14 Yr 0.33 - 4.94 ≥14 Yr	
TSH Reflex Cut-off Value (intended for >15 Yr only)	If TSH ≤0.10 the perform Free T4. If Free T4 is normal order Total T3 (possible hyperthyroidism). If TSH is 0.11-0.32, order Free T4. (Borderline low TSH). If TSH is >4.94, order Free T4 & TPO Antibodies (possible hypothyroidism).	
Thyroglobulin, ng/ml (tumor marker)	< 33 > 16 yrs <5 Athyrotic	
Thyroglobulin Antibodies, IU/ml	<4.11	
Tissue Transglutaminase (TTG) IgA, U/mL	<4.0 Negative 4.0 – 10.0 Weak Positive >10.0 Positive	
Tissue Transglutaminase (TTG) IgG, U/mL	<6.0 Negative 6.0 – 9.0 Weak Positive >9.0 Positive	
Transferrin, mg/dl	104 - 224 0-8 Wk 107 - 324 9 Wk-1 Yr 220 - 337 1-17 Yr 174 - 382 ≥18 Yr	
Troponin, ng/ml	≤ 0.028 Normal = 0.028 99% URL ≥ 0.029 Possible Cardiac Injury Significant delta w/i a 12 hr period for samples in the 0.00-0.08 range are: ≥ +/-30% or 0.02, whichever is larger.	≥ 0.30, first incident only within 24 hrs
Vitamin D, ng/ml	30 - 60 Adult 20 - 29 Insufficiency <20 Deficiency 60 - 80 Potential for adverse effect >80 Toxicity	

TEST	NORMAL RANGE	CRITICAL VALUE
ELECTROPHORESIS		
<u>Hemoglobin Elect.</u>	AA Pattern	
Hemoglobin A	96 - 98%	Adult
Hemoglobin A2	2.1 - 3.5%	Adult
Hemoglobin F	0 - 1.5%	Adult

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Fetal Hemoglobin	55 – 85% 2.1%	At birth > 2 years	
Protein Elect			
Total protein, g/dl	5.1 – 7.3 5.6 – 7.5 6.2 – 8.0	0 – 1 month 3 – 12 months > 3 years	
Albumin, g/dl	3.2 – 4.8 3.7 – 5.7 3.3 – 5.8 3.5 – 5.0	0 – 3 months 3 – 12 months 12 – 24 months > 2 years	
Alpha – 1, g/dl	0.1 – 0.3 0.2 – 0.4	0 – 2 months > 2 months	
Alpha – 2, g/dl	0.2 – 0.6 0.3 – 0.7 0.5 – 1.1 0.4 – 1.0	0 – 1 month 1 – 3 months 3 – 12 months >12 months	
Beta, g/dl	0.3 – 0.6 0.3 – 0.7 0.4 – 1.0 0.3 – 1.2 0.5 – 1.2	0 – 1 month 1 – 3 months 3 – 12 months 12 – 24 month > 2 years	
Gamma, g/dl	0.6 – 1.2 0.2 – 0.7 0.2 – 0.9 0.4 – 1.4 0.7 – 1.6	0 – 1 month 1 – 3 months 3 – 12 months 12 – 24 months > 2 years	
HEPATITIS & HIV MARKERS			
Hepatitis B Surface Ag	Negative		Positive
Hepatitis B Surface Ab	Positive = Immune Negative = Non-immune		
HIV 1/2	Negative		Positive
Hepatitis C Virus Ab	Negative		
Hepatitis B Core Ab	Negative		
Hepatitis B Core IgM Ab	Negative		
Hepatitis A Virus IgM	Negative		
SEROLOGY			
Rubella	Positive = Immune Negative = Non-immune		

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TEST	NORMAL RANGE	CRITICAL VALUE
Infectious Mononucleosis	Negative	
Mycoplasma pneumoniae	Negative	
ASO	<200 IU/mL	
Cryptococcal Antigen	Negative	Positive
ANA Screen	Negative	
Sm Antibody, AU/mL	<1.0	
RNP, AU/mL	<1.0	
Jo1 IgG, AU/mL	<1.0	
SSA IgG, AU/mL	<1.0	
SSB IgG, AU/mL	<1.0	
SCL70 IgG, AU/mL	<1.0	
Anti-dsDNA, IU/mL	</=4.0	
Centromere, AU/mL	<1.0	
Chromatin IgG, AU/mL	<1.0	
Ribosomal P IgG, AU/mL	<1.0	
SmRNP IgG, AU/mL	<1.0	
HEp2NA	Negative	
Heparin-PF4 Ab (HIT Screen)	Negative	Equivocal, Positive
HSV IgM Type 1/2	Negative	
HSV IgG Type 1	Negative	
HSV IgG Type 2	Negative	
RPR	Negative	
TP-PA	Non-Reactive	
VDRL	Non-Reactive	
H. pylori Breath Test	Negative	
H. pylori Stool Antigen	Negative	
Fetal Fibronectin	Negative	

TEST	NORMAL RANGE	CRITICAL VALUE
HEMATOLOGY		
WBC, x10 ³ /μL	8.04 – 15.40	0 – 14 days
	7.80 – 15.91	15 – 30 days
	7.05 – 15.00	31 – 60 days
	6.00 – 13.32	61 – 180 days

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TEST	NORMAL RANGE	CRITICAL VALUE
	6.00 – 13.51 0.5 – 1 year 4.86 – 13.38 2 – 5 years 4.31 – 11.40 6 – 11 years 3.84 – 9.84 12 – 17 years 4.00 – 10.04 ≥ 18 years	
RBC, x10 ⁶ /μL	4.10 – 5.74 0 – 14 days 3.16 – 4.80 15 – 30 days 2.93 – 4.22 31 – 60 days 3.43 – 4.80 61 – 180 days 3.97 – 5.07 0.5 – 1 year 3.84 – 4.97 2 - 5 years 3.90 – 5.00 6 - 11 years 4.03 – 5.29 Male, 12 - 17 years 3.79 – 4.61 Female, 12 - 17 years 4.63 – 6.08 Male, ≥ 18 years 3.93 – 5.22 Female, ≥ 18 years	< 2.00, > 7.00 " " " " " " " " " "
Hemoglobin, g/dl	13.4 – 20.0 0 – 14 days 10.0 – 15.3 15 – 30 days 8.9 – 12.7 31 – 60 days 9.6 – 12.4 61 – 180 days 10.1 – 12.7 0.5 – 1 year 10.2 – 12.7 2 - 5 years 10.6 – 13.4 6 - 11 years 11.0 – 14.5 Male, 12 - 17 years 10.8 – 13.3 Female, 12 - 17 years 13.7 – 17.5 Male, ≥ 18 years 11.2 – 15.7 Female, ≥ 18 years	< 6.9, > 25.0 < 6.9, > 25.0 < 6.0, > 20.0 " " " " " " " " "
Hematocrit, %	39.6 – 57.2 0 – 14 days 30.5 – 45.0 15 – 30 days 26.8 – 37.5 31 – 60 days 28.6 – 37.2 61 – 180 days 30.9 – 37.9 0.5 – 1 year 31.0 – 37.8 2 - 5 years 32.2 – 39.8 6 - 11 years 33.9 – 43.5 Male, 12 - 17 years 33.4 – 40.4 Female, 12 - 17 years 40.1 – 51.0 Male, ≥ 18 years 34.1 – 44.9 Female, ≥ 18 years	< 20.0, > 75.0 < 20.0, > 75.0 < 19.0, > 60.0 " " " " " " " " "
MCV, fL	91.3 – 106.4 0 – 14 days 89.4 – 103.0 15 – 30 days 83.4 – 96.4 31 – 60 days 74.1 – 88.3 61 – 180 days 69.5 – 82.6 0.5 – 1 year 71.3 – 85.0 2 - 5 years	

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TEST	NORMAL RANGE	CRITICAL VALUE
	74.4 – 86.1 6 - 11 years 76.7 – 90.6 12 – 17 years 79.0 – 94.8 ≥ 18 years	
MCH, pg	31.3 – 35.9 0 – 14 days 29.9 – 35.3 15 – 30 days 27.8 – 32.5 31 – 60 days 24.4 – 29.5 61 – 180 days 22.7 – 27.5 0.5 – 1 year 23.7 – 28.6 2 - 5 years 24.9 – 29.5 6 - 11 years 25.2 – 30.2 12 – 17 years 25.6 – 32.2 ≥ 18 years	
MCHC, g/dL	33.0 – 35.7 0 – 14 days 32.7 – 35.1 15 – 30 days 32.3 – 34.9 31 – 60 days 31.9 – 34.4 61 – 180 days 31.6 – 34.4 0.5 – 1 year 31.8 – 34.7 2 - 5 years 31.8 – 34.9 6 - 11 years 31.5 – 34.8 12 – 17 years 32.2 – 36.5 ≥ 18 years	
RDW-SD, fL	51.0 – 65.7 0 – 14 days 46.3 – 57.3 15 – 30 days 43.0 – 55.0 31 – 60 days 35.2 – 45.7 61 – 180 days 34.9 – 42.8 0.5 – 1 year 34.9 – 42.0 2 - 5 years 35.1 – 41.8 6 - 11 years 36.7 – 44.2 12 – 17 years 35.1 – 46.3 ≥ 18 years	
RDW, %	14.6 – 17.3 0 – 14 days 14.3 – 16.8 15 – 30 days 13.6 – 16.1 31 – 60 days 12.2 – 15.3 61 – 180 days 12.7 – 15.6 0.5 – 1 year 12.4 – 14.9 2 - 5 years 12.2 – 14.4 6 - 11 years 12.3 – 14.6 12 – 17 years 11.5 – 14.4 ≥ 18 years	
Platelet, x10 ³ /μL	144 – 449 0 – 14 days 248 – 586 15 – 30 days 229 – 597 31 – 60 days	< 20, > 1,000 “ “

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TEST	NORMAL RANGE	CRITICAL VALUE
	244 – 580 61 – 180 days 206 – 459 0.5 – 1 year 190 – 403 2 - 5 years 200 – 369 6 - 11 years 175 – 345 12 – 17 years 163 - 369 ≥ 18 years	“ “ “ “ “ “
MPV, fL	10.2 – 12.0 0 – 14 days 10.0 – 12.2 15 – 30 days 9.2 – 11.1 31 – 60 days 8.9 – 10.9 61 – 180 days 8.7 – 10.56 0.5 – 1 year 8.9 – 11.0 2 - 5 years 9.2 – 11.4 6 - 11 years 9.6 – 11.8 12 – 17 years 8.7 – 12.4 ≥ 18 years	
nRBC, %	0 – 8% 1 – 3 days 0 – 0% 4 – 30 days 0 – 0% 31 – 60 days 0 – 0% 61 – 180 days 0 – 0% 0.5 – 1 year 0 – 0% 2 – 5 years 0 – 0% 6 – 11 years 0 – 0% 12 – 17 years 0 – 0% ≥ 18 years	
IPF, %	1.3 – 6.8 0 – 180 days 1.4 – 4.5 6 months – 1 year 1.0 – 3.6 2 – 5 years 1.0 – 4.9 6 – 11 years 1.4 – 6.4 12 – 17 years 1.3 – 7.1 ≥ 18 years	
Differential		
Neutrophils, %	15 – 66 0 – 14 days 11 – 57 15 – 30 days 9 – 68 31 – 60 days 11 – 76 61 – 180 days 17 – 74 0.5 – 1 year 22 – 69 2 - 5 years 29 – 75 6 - 11 years 32 – 75 12 – 17 years 34 - 71 ≥ 18 years	
Bands, %	0 – 10	
Lymphocytes, %	25 – 69 0 – 14 days 32 – 83 15 – 30 days	

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TEST	NORMAL RANGE		CRITICAL VALUE
	38 – 87	31 – 60 days	
	30 – 86	61 – 180 days	
	26 – 80	0.5 – 1 year	
	18 – 69	2 - 5 years	
	16 – 58	6 - 11 years	
	16 – 53	12 – 17 years	
	19 - 54	≥ 18 years	
Monocytes, %	5 – 20	0 – 14 days	
	4 – 18	15 – 30 days	
	4 – 16	31 – 60 days	
	4 – 13	61 – 180 days	
	4 – 13	0.5 – 1 year	
	4 – 12	2 - 5 years	
	4 – 12	6 - 11 years	
	4 – 12	12 – 17 years	
	4 – 13	≥ 18 years	
Eosinophils, %	0 – 5	0 – 14 days	
	0 – 5	15 – 30 days	
	0 – 4	31 – 60 days	
	0 – 4	61 – 180 days	
	0 – 4	0.5 – 1 year	
	0 – 4	2 - 5 years	
	0 – 5	6 - 11 years	
	0 – 4	12 – 17 years	
	0 – 7	≥ 18 years	
Basophils, %	0 – 1	0 – 14 days	
	0 – 1	15 – 30 days	
	0 – 1	31 – 60 days	
	0 – 1	61 – 180 days	
	0 – 1	0.5 – 1 year	
	0 – 1	2 - 5 years	
	0 – 1	6 - 11 years	
	0 – 1	12 – 17 years	
	0 – 1	≥ 18 years	
IG, %	0 – 2	≤ 2 days	
	0 – 2	2 – 13 days	
	0 – 1	14 – 30 days	
	0 – 1	31 – 90 days	
	0 – 1	91 – 180 days	
	0 – 1	0.5 – 1 year	
	0 – 1	2 - 5 years	
	0 – 1	6 - 11 years	
	0 – 1	12 – 17 years	
	0 – 1	≥ 18 years	

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TEST	NORMAL RANGE	CRITICAL VALUE
ABS IG, x10 ³ /μL	0 – 0.28 0 – 0.27 0 – 0.22 0 – 0.09 0 – 0.06 0 – 0.14 0 – 0.06 0 – 0.04 0 – 0.03 0 – 0.08	≤ 2 days 2 – 13 days 14 – 30 days 31 – 90 days 91 – 180 days 0.5 – 1 year 2 - 5 years 6 - 11 years 12 – 17 years ≥ 18 years
ABS NEUT, x10 ³ /μL	1.6 – 6.8 1.2 – 5.5 0.8 – 4.7 1.0 – 7.2 1.2 – 7.2 1.5 – 8.3 1.6 – 7.9 1.5 – 7.5 1.6 – 6.1	0 – 14 days 15 – 30 days 31 – 60 days 61 – 180 days 0.5 – 1 year 2 - 5 years 6 - 11 years 12 – 17 years ≥ 18 years
ABS LYM, x10 ³ /μL	1.8 – 8.0 2.1 – 8.4 2.3 – 9.1 2.1 – 9.0 1.5 – 8.1 1.1 – 5.8 1.0 – 4.3 1.0 – 3.3 1.2 – 3.8	0 – 14 days 15 – 30 days 31 – 60 days 61 – 180 days 0.5 – 1 year 2 - 5 years 6 - 11 years 12 – 17 years ≥ 18 years
ABS MONO, x10 ³ /μL	0.5 – 1.8 0.3 – 1.4 0.3 – 1.2 0.2 – 1.2 0.2 – 1.2 0.2 – 0.9 0.2 – 0.9 0.2 – 0.8 0.3 – 0.8	0 – 14 days 15 – 30 days 31 – 60 days 61 – 180 days 0.5 – 1 year 2 - 5 years 6 - 11 years 12 – 17 years ≥ 18 years
ABS EOS, x10 ³ /μL	0.1 – 0.7 0.1 – 0.8 0.0 – 0.6 0.0 – 0.7 0.0 – 0.8 0.0 – 0.5 0.0 – 0.5	0 – 14 days 15 – 30 days 31 – 60 days 61 – 180 days 0.5 – 1 year 2 - 5 years 6 - 11 years

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TEST	NORMAL RANGE		CRITICAL VALUE
	0.0 – 0.4 0.0 – 0.5	12 – 17 years ≥ 18 years	
ABS BASO, x10 ³ /μL	0 – 0.1 0 – 0.1 0 – 0.1 0 – 0.1 0 – 0.1 0 – 0.1 0 – 0.1 0 – 0.1 0 – 0.1	0 – 14 days 15 – 30 days 31 – 60 days 61 – 180 days 0.5 – 1 year 2 - 5 years 6 - 11 years 12 – 17 years ≥ 18 years	
Automated Reticulocyte			
Retic, %	3.5 – 5.4 1.1 – 2.4 2.1 – 3.5 1.6 – 2.7 1.0 – 1.8 0.8 – 1.4 1.0 – 1.9 0.9 – 1.5 0.9 – 2.5	1 – 3 days 4 – 30 days 31 – 60 days 61 – 180 days 0.5 – 1 year 2 – 5 years 6 – 11 years 12 – 17 years ≥ 18 years	
Absolute Retic, x10 ⁶ /μL	.148 - .216 .051 - .110 .052 - .078 .048 - .088 .044 - .111 .036 - .068 .042 - .070 .042 - .065 .040 - .110	1 – 3 days 4 – 30 days 31 – 60 days 61 – 180 days 0.5 – 1 year 2 – 5 years 6 – 11 years 12 – 17 years ≥ 18 years	
Immature Retic Fraction (IRF), %	30.5 – 35.1 14.5 – 24.6 19.1 – 28.9 13.4 – 23.3 11.4 – 25.8 8.4 – 21.7 8.9 – 24.1 9 – 18.7 4.0 – 17.2	1 – 3 days 4 – 30 days 31 – 60 days 61 – 180 days 0.5 – 1 year 2 – 5 years 6 – 11 years 12 – 17 years ≥ 18 years	
RET-HE, pg	28 – 39 29 – 36	0 – 180 days 6 months – 1 year	

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TEST	NORMAL RANGE	CRITICAL VALUE
	28 – 38 30 – 40 30 – 40 30 - 38	2 – 5 years 6 – 11 years 12 – 17 years ≥ 18 years
OTHER HEMATOLOGY		
Sedimentation Rate (ESR), mm/hr	0 – 15 0 – 20 0 – 20 0 – 30	Male, 0 – < 50 years Female, 0 – < 50 years Male, ≥ 50 years Female, ≥ 50 years
Sickle Screen	Negative	
Kleihauer-Betke, % fetal cells	0.00	
Est Fetomat Hem	0	
Malaria Smear	No parasites	Positive for parasites
COAGULATION		
Antithrombin III Activity, %	80 – 120	
D-Dimer, µg/mL FEU	< 0.46	
Factor VIII, %	51 – 173	
Factor IX, %	53 – 194	
Fibrinogen, mg/dl	267 – 484	
Functional Fibrinogen	MA, mm 11.0 – 24.4	
Heparin, IU/ml	0.5 – 1.0 0.10 – 0.30 0.3 – 0.7	LMW, Therapeutic LMW, Prophylactic Unfractionated, Therapeutic
P2Y12, PRU	182 – 335	
PT, sec	12.3 – 14.4	>48.0
INR	0.92 – 1.12	≥ 5.0
PTT, sec	25.3 – 35.0	≥ 150
PFA, sec	92 – 174 54 – 104	Epinephrine ADP
Protein C Activity, %	70 – 130	
Protein S Activity, %	77 – 143 60 – 123	Male Female
Rapid TEG	RTEG ACT, sec RTEG R, min RTEG Km min RTEG A, degree RTEG MA, mm RTEG LY30, %	86.0 – 118.0 0.0 – 1.0 1.0 – 2.0 64.0 – 80.0 52.0 – 71.0 0.0 – 8.0
Thrombin Time, sec	13.9 – 19.9	
Thromboelastograph (TEG)	R, min K, min AA, Deg MA, mm	5.6 – 10.0 1.0 – 3.0 55 – 78 51 – 69

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TEST	NORMAL RANGE	CRITICAL VALUE
URINALYSIS		
Specific Gravity	1.001 – 1.035	
Color	Colorless - Yellow	
Clarity	Clear	
pH	5.0 – 8.0	
Protein	Negative	
Glucose	Negative	
Ketones	Negative	
Bilirubin	Negative	
Nitrite	Negative	
Leukocyte Esterase	Negative	
Blood	Negative	
Urobilinogen	0.0 – 1.0	
RBC, hpf	0 – 4	
WBC, hpf	0 – 4	
Hyaline cast, lpf	0 – 7	
Squamous Epithelial, hpf	0 – 3	
Bacteria	None seen - Occasional	
HCG Qualitative, Urine	Negative	
Eosinophils, Urine	None seen	
BODY FLUIDS		
CSF Cell Count / Diff		
Color	Clear	
Turbidity	Colorless	
Xanthochromia	Negative	
WBC, /mm ³	0 – 5	
RBC, /mm ³	0 – 5	
Neutrophils, %	0 – 6	
Lymphocytes, %	40 – 80	
Monocytes, %	15 – 45	
Eosinophils, %	0	
Basophils, %	0	
Fluid Cell Count / Diff		
Color	Clear	
Turbidity	Colorless	
WBC, /mm ³	0 – 5	
RBC, /mm ³	0 – 5	
Neutrophils, %	0 – 6	
Lymphocytes, %	40 – 80	
Monocytes, %	15 – 45	
Eosinophils, %	0	

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Mesothelials, %	0	
Group A Strep	Negative	
Wet Prep, Vaginal		
Epithelial Cells	None seen	
White Blood Cells	None seen	
Yeast	None seen	
Trichomonas	None seen	
Clue Cells	None seen	

TEST	NORMAL RANGE	CRITICAL VALUE
POINT OF CARE i-STAT SYSTEM		
Sodium, mEq/L	Arterial 135 – 145 Venous 135 – 145 Capillary 135 – 145	Adult <120, >155 Children <120, >158 0–1 month <120, >158
Potassium, mmol/L	Arterial 3.5 – 5.0 *(0-3 mos) 4.0 – 6.2 Venous 3.5 – 5.0 *(0-6 mos) 4.0 – 6.2 Capillary 3.5 – 5.0	*for all, <2.5, >6.5
Chloride, mmol/L	Venous 65 – 140	
Ionized Calcium, mmol/L	Arterial 1.07 – 1.27 Venous 1.07 – 1.27 Capillary 1.07 – 1.27	*for all, <0.8, >1.6
pH	Arterial 7.35 – 7.45 Venous 7.33 – 7.43 Capillary 7.33 – 7.43	Adult, Arterial <7.30, >7.60 Children, Arterial <7.20, >7.60 0 – 1 Month <7.20, >7.60
pCO2, mm/Hg	Arterial 36 – 46 Venous 38 – 48 Capillary 38 – 46	Adult, Arterial < 20, > 60
pO2, mm/Hg	Arterial 85 – 100 Venous 25 – 47 Capillary 85 – 100	Adult, Arterial < 50 Children, Arterial < 50
BE, mmol/L	Arterial (-2) – (+2) Venous (-2) – (+2)	
Hematocrit, % PCV	38 – 51 (1 mo-adult) Arterial & Venous 39 - 67 (0-1 ms) Arterial & Venous	Adult < 20, > 60 Children < 20, > 60 0 – 1 Month < 20, > 75
ACT (k), Seconds	Arterial 74 – 137 Venous 74 – 137	> 180
Troponin I, ng/mL	Venous 0.00 – 0.08	
Creatinine, mg/dl	Arterial 0.6 – 1.3 Capillary 0.6 – 1.3	Adult > 7.4 Children > 3.8
Lactate, mmol/L	Arterial 0.36 – 1.25 Venous 0.90 – 1.70	> 4.0

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PT, INR	Capillary	0.8 – 1.2	
TCO2 on the i-STAT Cartridge (measured)	Arterial	23 – 27	Adult < 11, > 40
	Venous	24 – 29	Children < 11, >39

TEST	NORMAL RANGE	CRITICAL VALUE
MICROBIOLOGY		
APT	ADULT Hgb	
Chlamydia DNA Probe	Negative	
Clostridium difficile toxin	Negative	
Cryptosporidium Antigen	Negative	
Fecal Fat (Qualitative)	Normal	
Fecal pH	7.0-7.5	
Flu A/B Antigen	Negative	
Giardia Antigen	Negative	
Gonorrhoeae DNA probe	Negative	
HSV Type 1/2 Molecular Detection	Negative	
Ova and Parasite Exam, Comprehensive	No amoeba, ova, or parasite seen	
Fecal Reducing Substance	Negative	
Rotavirus Antigen	Negative	
Respiratory Syncytial Virus Antigen	Negative	Positive
Fecal Trypsin	Positive	
Semen		
Volume	2.0-5.0 mL	
Viscosity	Normal	
Motility	60-100%	
Normal Forms	>60%	
Count	20-250 sperm/million/mL	

5.0 Metrics

Not applicable

6.0 Forms

There are no forms associated with this WI.

7.0 References

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Requirement	Title & Description	Clause
42 CFR	Code of Federal Regulations	42CFR493.1291(d)
CAP	College of American Pathologists	CAP COM.29950 & COM.50000
MCNH Laboratory Policy	Laboratory Quality Management & Quality Control	307
Navicent Health Policy	Laboratory Result Reporting	308

8.0 Revision History

REVISION HISTORY			
Revision	Description of Change	Author	Effective Date
1	New Format	Elizabeth Holland	10-07-2016
2	Added: TTG, Gliadin, H.pylori Stool Ag, Sickle Screen, Est Fetomat Hem, Functional Fibrinogen, & Rapid TEG Revised: Potassium Critical Values Moved: RET-HE Removed: LAP, Myeloperoxidase, H.pylori IgG	Elizabeth Holland	01-17-2017
3	Updated SwCI age ranges/values according to CFF standard. Removed LS, PG, & NT pro BNP due to discont of testing. Updated P2Y12 Normal Ranges due to new manufacturer pkg insert. Revised Troponin Interpretation for Possible Cardiac Injury. Added age range for Neonatal Bilirubin Critical Value. Added Urine Ethanol.	Elizabeth Holland	3-13-2017
4	Updated AST & Hemoglobin Electrophoresis	Elizabeth Holland	4-24-2017
5	Updated PT Critical Value due to Lot # conversion. Updated ANA. Removed Herpes Viral Culture & Added HSV 1&2. Added Heroin to DoA. Revised TT4. Revised CA 19-9		