

## CRITICAL VALUE POLICY - LABORATORY

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| <input checked="" type="checkbox"/> St. Joseph Medical Center, Tacoma, WA | <input checked="" type="checkbox"/> St. Anthony Hospital Gig Harbor, WA | <input type="checkbox"/> Harrison Medical Center, Bremerton, WA  |
| <input checked="" type="checkbox"/> St. Francis Hospital, Federal Way, WA | <input checked="" type="checkbox"/> St. Elizabeth Hospital Enumclaw, WA | <input type="checkbox"/> Harrison Medical Center, Silverdale, WA |
| <input checked="" type="checkbox"/> St. Clare Hospital Lakewood, WA       | <input type="checkbox"/> Highline Medical Center Burien, WA             | <input type="checkbox"/> PSC                                     |

### PURPOSE

To define the policy for management of critical values (CV) for laboratory test results.

### BACKGROUND

FHS Laboratory, along with consultation from the Medical Staffs of FHS Hospitals, will define the tests to be on the CV list and the values at which they trigger an immediate notification. Any significant revisions to the list of CV tests must be approved by the laboratory and appropriate medical staff representative(s).

### POLICY

1. All tests which meet the criteria of a Critical Value (CV) will be reported to the appropriate individual or nursing unit as soon as is possible.
  - For hospital departments or locations that operate 24/7 (i.e., nursing homes/LTC facilities), this means immediately (within 15 minutes).
  - For ambulatory settings, this may mean as soon as notification can occur, if the location is closed. Attempts to reach the ordering provider will commence as soon as the critical value is available.
  - Whenever an immediate notification is warranted based on the level of CV, all efforts to contact the appropriate caregiver will be exhausted, to include notification of the laboratory medical director or pathologist.
  - Test results will be preliminary verified and available electronically while notification commences.
  - Test do not need to be repeated unless the analysis (result) is in question.
2. Critical value results should be reported by the tech who obtained the result or by client services receiving a reference lab CV result; i.e. sodium result should be reported by the Lab Tech; pO2 should be reported by the Respiratory Therapist; results called from a reference lab should be called by the client services receiving notification of result.
3. Critical values for patients in all CHI-FHS departments must be called to caregivers having RN, ARNP, PA, and Medical Assistant, Pharmacist or Physician credentials. The intent is that licensed caregivers at CHI-FHS receive CV results. CHI-FHS departments who don't staff RNs will designate appropriate staff to receive CV results and insure subsequent notification to the appropriate provider will occur.
4. To insure that a verbally reported CV is understood and recorded correctly, a READ-BACK of the recorded result is required from the recipient of the result. Tech/Lab Staff will initiate Read Back to include Patient's full name, and MRN# or DOB.
5. During the Reading of the CV result, the lab will use verbiage such as Critical LOW or Critical HIGH (when applicable) to further describe the value so that confusion is minimized. Lab will request to have recipient READ BACK the result they have recorded, the lab will confirm the result with "that's correct" or restate the correct critical value until the recipient has READ BACK the recorded result correctly and is confirmed by Lab with "that's correct".

6. Documentation in the lab computer system of this notification and read-back, is required to complete an audit trail of CV notification.
7. Critical values or toxic drug levels called to the laboratory from reference laboratories are to be treated as critical values. Values called to the laboratory as semi-urgent or priority shall be called to the provider during business hours, no later than 10 am the next business day. Values called as courtesy shall be called to the provider during normal business hours, next business day.

### **CRITICAL VALUE LABORATORY TEST LIST**

The following results are considered "critical". The provider will be notified if the criteria below is/are met. These values apply to patients of all ages, unless specified,

<b>CHEMISTRY/TOXICOLOGY</b>					
<b>Test Name</b>		<b>Low</b>	<b>High</b>	<b>Units</b>	<b>Notification Protocol</b>
Calcium		<b>&lt;6.5</b>	<b>&gt;12.0</b>	mg/dL	Call immediately
Calcium Ionized		<b>&lt;0.89</b>	<b>&gt;1.51</b>	mmol/L	Call immediately
Carbon Dioxide		<b>&lt;10</b>	<b>&gt;45</b>	mmol/L	Call immediately
CKMB (1 <sup>st</sup> elevation of visit)			<b>&gt;9.0*</b>	ng/mL	Call first elevation immediately
CKMB Index (1 <sup>st</sup> elevation of visit)			<b>&gt;2.7*</b>	%	Call first elevation immediately
Glucose		<b>&lt;50</b>	<b>&gt;450</b>	mg/dL	Call immediately
Glucose CSF		<b>&lt;30</b>		mg/dL	Call immediately
Lactic Acid			<b>&gt;4.0</b>	mmol/L	Call immediately
Lithium			<b>&gt;1.5</b>	meq/L	Call immediately
Magnesium		<b>&lt;1.0</b>	<b>&gt;4.7</b>	mg/dL	Call immediately
Magnesium Therapy		<b>&lt;1.0</b>	<b>&gt;7.9</b>	mg/dL	Call immediately
Osmolality		<b>&lt;250</b>	<b>&gt;350</b>	mOsm/kg	Call immediately
Phosphorus	10 day- 2 yrs.	<b>&lt;3.0</b>		mg/dL	Call immediately
	> 2 yrs.- 999 yrs.	<b>&lt;1.0</b>		mg/dL	Call immediately
Potassium	1 mo. -< 1 yr.	<b>&lt;3.0</b>	<b>&gt;6.8</b>	mmol/L	Call immediately
	>1 yr – <9 yrs	<b>&lt;3.0</b>	<b>&gt;5.8</b>	mmol/L	Call immediately
	9 yrs. – 999 yrs.	<b>&lt;3.0</b>	<b>&gt;6.0</b>	mmol/L	Call immediately
Sodium		<b>&lt;120</b>	<b>&gt;155</b>	mmol/L	Call immediately
TNI (1 <sup>st</sup> elevation of visit)			<b>&gt;0.49*</b>	ng/mL	Call first elevation immediately

\*CKMB/Index – First elevation of CKMB >9.0 or Index >2.7% during a visit or encounter (or if the patient had prior critical levels but they had returned to baseline and now are critical again) triggers immediate call/notification \*TNI – First elevation of TNI >0.49 during a visit.

<b>CHEMISTRY/TOXICOLOGY</b>					
<b>Test Name</b>		<b>Low</b>	<b>High</b>	<b>Units</b>	<b>Notification Protocol</b>
Acetaminophen		n/a	<b>&gt;50</b>	mcg/mL	Call immediately
Carbamazepine		n/a	<b>&gt;15</b>	mcg/mL	Call immediately
Cyclosporin		n/a	<b>&gt;400</b>	ng/mL	Call immediately
Digoxin		n/a	<b>&gt;3.0</b>	mcg/mL	Call immediately
Gentamicin-peak		n/a	<b>&gt;10.0</b>	mcg/mL	Call immediately
Gentamicin-trough		n/a	<b>&gt;2.0</b>	mcg/mL	Call immediately
Lithium		n/a	<b>&gt;1.5</b>	meq/L	Call immediately
Phenobarbital		n/a	<b>&gt;40</b>	mcg/mL	Call immediately
Phenytoin		n/a	<b>&gt;25</b>	mcg/mL	Call immediately
Salicyclate		n/a	<b>&gt;30</b>	mg/dL	Call immediately

Theophylline	n/a	>20	mcg/mL	Call immediately
Tricyclic (Total) serum	n/a	>500	ng/mL	Call immediately
Vancomycin-peak	n/a	>80.0	mcg/mL	Call immediately
Vancomycin-trough	n/a	>25.0	mcg/mL	Call immediately
Valproic Acid	n/a	>150	mcg/mL	Call immediately

### CRITICAL VALUE LABORATORY TEST LIST cont'd

HEMATOLOGY					
Test Name		Low	High	Units	Notification Protocol
Hematocrit	1 mo. – 12 yrs.	<24	>70	%	Call immediately
	>12 years old	<22	>60	%	Call immediately
Heparin UFH			>1.00	IU/mL	Call immediately
Heparin LMW			>1.69	IU/mL	Call immediately
INR			>5.0		Call immediately
Platelet		<30,000	>1 Million	K/mcL	Call immediately
PTT (non-heparin)			>60	Seconds	Call immediately
WBC		<2.0	>50.0	K/uL	Call immediately
Fibrinogen		<50		mg/dL	Call immediately
Malaria		PRESENT – Call immediately			
Blasts on smear		First Time – Call immediately, unless critical called already in last 3 days. If critical already called within last 3 days, document critical value as “critical called ___/___/___”. No call necessary per policy.			

### NEWBORN-SPECIFIC CRITICAL VALUES

CHEMISTRY/HEMATOLOGY – NEWBORN (<1 month old unless specified)					
Test Name		Low	High	Units	Notification Protocol
Bilirubin, Neonatal	0 - 23 hrs		>7.0	mg/dL	Call immediately
	24 - 28 hrs		>8.0	mg/dL	Call immediately
	28 – 32 hrs		>9.0	mg/dL	Call immediately
	32 – 36 hrs		>10.0	mg/dL	Call immediately
	36 – 40 hrs		>11.0	mg/dL	Call immediately
	40 - 47 hr		>12.0		
	47 - 54 hr		>13.0	mg/dL	Call immediately
	54 – 60 hrs		>14.0	mg/dL	Call immediately
	60 – 71 hr		>15.0	mg/dL	Call immediately
	71 – 90 hr		>16.0	mg/dL	Call immediately
	90 – 143 hrs		>17.0	mg/dL	Call immediately
	143 – 1 mo.		>12.0	mg/dL	Call immediately
Glucose	0 day up to 2 days	<40	>200	mg/dL	Call immediately
	2 days up to 1 mo.	<50	>200	mg/dL	Call immediately
Phosphorus	0 day – 10 days	<3.0	>15.0	mg/dL	Call immediately
Potassium *		<3.0	>7.5	mmol/L	Call immediately
Hemoglobin		<7.0	>21.6	mg/dL	Call immediately
Hematocrit		<24	>75	%	Call immediately

<b>URINALYSIS – NEWBORN (&lt;1 month old unless specified)</b>				
Urine Ketones	PRESENT – Call immediately			
Urine Glucose	PRESENT – Call immediately			
<b>TOXICOLOGY - NEWBORN (&lt;1 month old unless specified)</b>				
Gentamycin - trough		> 1.0	mcg/mL	Call immediately
Vancomycin - trough		>25.0	mcg/mL	Call immediately

**CRITICAL VALUE LABORATORY TEST LIST cont'd**

<b>TRANSFUSION SERVICE</b>
Verification of hemolytic transfusion reaction
Verification of delayed transfusion reaction
Emergency released unit found to be incompatible with patient
Excess fetal-maternal hemorrhage (>30 mL)
New antibody identified during pregnancy

<b>MICROBIOLOGY</b>
All positive Blood cultures
All positive CSF gram stains and cultures
All positive viral testing on CSF (culture, PCR, DFA etc.)
All positive AFB smears and cultures
All positive MTB by PCR
All positive Herpes cultures (babies only)
All positive Strep Group A in wound cultures only
All positive viral testing for a baby <12 months of age (culture, PCR, DFA, etc.)
All positive Strep Group B Cultures or Antigen detected in body fluid of a baby <30 days old and /or new mothers (In House)
All other bacteria/organisms that could be associated with bioterrorism
Positive gram stains on normally sterile body sites/fluids (CSF, joint fluid, etc. excluding urine)
Positive Influenza antigen testing on inpatients or ED patients

**RELATED DOCUMENTS**

- R-W-AD-0552      Critical Value Work Instruction
- R-W-AD-0597      Critical Values- First Critical Troponin or CK-MB