

# Austin Health Pathology

## High Risk Critical & Significant Result Notifications



Alert thresholds apply to all new and/or unexplained results, unless otherwise specified.

**Level 1 CRITICAL RESULT (highlighted boxes):** These results pose the highest clinical risk to the patient and ALL results require immediate notification

**Level 2 SIGNIFICANT RESULT:** These results are high-risk and require notification as soon as possible, and preferably within one hour. Notify outpatient/GP results as soon as possible between 8am – 8pm; if outside of these hours, attempt to notify result using after-hours contact details (where available). Otherwise notify as soon as practical, i.e., the following morning when clinic opens.

### Biochemistry Alert Thresholds

Analyte	Units	Low Threshold	High Threshold	Comments * Paediatric = < 16 years or younger
ALT	IU/L	-	>1000	Applies to ≥16 years.
		-	>500	Applies to <16 years. Notify all instances.
		-	<b>DELTA</b>	Increase of ≥50% within 3 days.
AST	IU/L	-	>1000	Applies to ≥16 years.
		-	>500	Applies to <16 years. Notify all instances.
		-	<b>DELTA</b>	Increase of ≥50% within 3 days.
Ammonia	umol/L	-	>100	Applies to <16 years. Notify all instances.
Bicarbonate	mmol/L	<b>&lt;15</b>	-	Applies to <16 years. Notify all instances.
Bile Acids	umol/L	-	>100	<b>Significant only if pregnant</b>
Bilirubin, Total	umol/L	-	>200	Applies only to 0 days.
		-	>250	Applies only to 1 day.
		-	>300	Applies only to 2 days.
		-	>350	Applies to ≥ 3 days and <16 years.
Calcium, corrected	mmol/L	<b>&lt;1.80</b>	<b>&gt;3.50</b>	
Carbamazepine	mg/L	-	>14	

Analyte	Units	Low Threshold	High Threshold	Comments * Paediatric = < 16 years or younger
Ciclosporin (CYC)	ug/L	-	>2000	
Clozapine	ug/L	-	>1000	
Cortisol	nmol/L	<80	-	Does not apply if patient is undergoing glucocorticoid treatment or Dexamethasone Suppression Test.
Creatine Kinase (CK)	U/L	-	≥ 5000	
		-	DELTA	≥100% increase within 2 days.
Creatinine	umol/L	-	>150	Applies only if pregnant.
		-	>200	Applies to <16 years.
		-	>300	Applies to ≥16 years (and not pregnant).
		-	DELTA	≥30% increase within 30 days.
C-reactive protein (CRP)	mg/L	-	>10	Applies to <3 months.
		-	>200	Applies to ≥3 months.
		DELTA	DELTA	Increase ≥100 mg/L within 1 day - <b>Significant</b>  Decrease ≥100 mg/L within 1 day - <b>Suggest re-collecting to confirm</b>
Digoxin	ug/L	-	>2.0	
Gentamicin	mg/L	-	>40	First instance of a post-dose value.
Glucose (Random, fasting, or 0-min GTT)	mmol/L	<2.5	>25	
		-	>15	Applies to <1 month.
Iron	umol/L	-	>49	Applies to <16 years. Notify all instances.
Lactate	mmol/L	-	>4.0	
Lactate Dehydrogenase	U/L	DELTA	DELTA	Increase or decrease of ≥50% within 30 days.
Lipase	U/L	-	>200	
Lithium	mmol/L	-	>1.20	
Magnesium	mmol/L	<0.6	>1.9	Applies to <16 years. Notify all instances.
		<0.4	>4.1	Applies to ≥16 years.

Analyte	Units	Low Threshold	High Threshold	Comments * Paediatric = < 16 years or younger
NT Pro BNP	ng/L	-	>200	Significant only if pregnant
Oestradiol	pmol/L	-	>3000	Significant only if pregnant
Paracetamol	mg/L	-	>15	
Phenytoin	mg/L	-	>20	Applies to <16 years. Notify all instances.
		-	>25	Applies to ≥16 years.
Phosphate	mmol/L	<0.3	-	
		<0.8	>3.0	Applies to <2 years.
		<0.5	>3.0	Applies to ≥2 years.
Potassium	mmol/L	<2.5	>6.5	Applies to ≥6 months.
		<3.0	>6.7	Applies to <6 months.
Salicylate	mg/L	-	>345	
Sodium	mmol/L	<120	>160	Applies to ≥16 years.
		<130	>155	Applies to <16 years.
		<127	>150	
T3, free	pmol/L	-	>10	
T4, free	pmol/L	-	>40	
Tacrolimus	ug/L	-	>30	
Triglycerides	mmol/L	-	>15	
Troponin I (Austin Hospital Inpatients ONLY)	ng/L	-	≥50	Applies to both male and female inpatients of Aaustin Health.
Troponin I (All patients excluding Austin Hospital Inpatients, see above)	ng/L	-	≥27	Applies to male patients.
			≥17	Applies to female patients.
TSH	mIU/L	-	>5	Applies to ≥3 weeks and <3 months.
		-	>20	Applies to <3 weeks.
		-	>40	Applies to ≥3 months.
Urea	mmol/L	-	>40	Does not apply to inpatients or Dialysis Centre patients.

Analyte	Units	Low Threshold	High Threshold	Comments * Paediatric = < 16 years or younger
Urate	mmol/L	-	>0.34	Significant only if pregnant
Urine TP:Cr Ratio	Mg/ mmol	-	>50	Significant only if pregnant
Urine TP:Cr Excretion	g/d	-	>0.5	Significant only if pregnant
Valproate	mg/L	-	>150	
Vancomycin	mg/L	-	>40	Applies only to pre-dose samples.
Vitamin B12	pmol/L	<80	-	

### Laboratory Performed Blood Gases (excludes Point of Care)

Analyte	Units	Low Threshold	High Threshold	Comments
Arterial carbon dioxide tension, pCO <sub>2</sub>	mmHg	-	>60	
Arterial oxygen tension, pO <sub>2</sub>	mmHg	<55	-	
Arterial/Capillary pH	mmHg	<7.30	>7.60	
Bicarbonate	mmol/L	≤15	-	If <16 years, notify all instances
Carboxy Hb	%	-	>10	
Haemoglobin	g/L	<70	-	Applies to ≥28 days.
		<90	-	Applies to ≥28 days.
Lactate	mmol/L	-	>4.0	
Met Hb	%	-	>2.5	
Potassium	mmol/L	<2.5	>6.5	Applies to >6 months.
		<3.0	>6.7	Applies to <6 months.
Sodium	mmol/L	<120	>160	Applies to >16 years
		<130	>155	Applies to <16 years
		<127	>150	

## Haematology Alert Thresholds

Analyte	Units	Low Threshold	High Threshold	Other Alert Thresholds	Comments
Haemoglobin	g/L	<70	-	-	
		<80	>190	-	First presentation only
		-	-	Fall of >30	
		<90	-	-	Paediatric patients only
		< 90	-	-	Neonates Only (<28 days old)
White Cell count	x 10 <sup>9</sup> /L	-	>50	-	
		-	>35	-	Neonates Only (<28 days old)
Neutrophil count	x 10 <sup>9</sup> /L	<0.7	-	-	
Platelet count	x 10 <sup>9</sup> /L	<20	-	-	
		<80	-	-	Pregnancy Only
		<120	-	-	Neonates (28 days old)
		<50	-	-	ALL paediatric patients. First presentation only for adults.
		<100	-	-	First presentation for paediatric patients only
INR	Ratio	-	>4.0	-	
PT	Sec	-	>19		
APTT	Sec	-	>110		
		-	>45		
Fibrinogen	g/L	<0.8	-	-	First presentation only
		<1.5	-	-	If pregnant or postpartum, first presentation only
Fibrinogen (Paediatric)	g/L	<1.0	-	-	First presentation only for paediatric patients
		<0.5	-	-	
Blood Films	N/A			APML (Acute Promyelocytic Leukaemia)	
				Malaria	
				Massive Haemolysis	Including co-existence of fragments & thrombocytopenia
		-	-	New or relapsed acute leukemias	
HITS screen	N/A	-	-	Positive	

## Transfusion Alert Thresholds

Alert Thresholds	Comments
<b>A suspected issuing of incompatible blood product with the potential to cause an acute haemolytic reaction.</b>	
Discrepancy in blood grouping from previous result	
Any significant delay in provision of blood products	Incl. red cell incompatibility due to atypical antibodies
Presence of an atypical antibody that may cause HDN in a pregnant woman	Unexpected result only
Positive DAT in a baby, or positive DAT in an adult where result is unexpected	
Keilhauer test >3mL FMH	
Antenatal antibody Titre >1 value different from previous	

## Microbiology Alert Thresholds

**Sterile site isolation: Microscopic findings suggestive of infection and/or isolation of a pathogen from key sterile sites:**

- Blood
- Fluids: CSF, peritoneal, ascitic, pericardial and pleural aspiration cultures (not drainage fluid), joint fluid
- Cardiac tissue/valve samples and prosthetic endovascular devices (e.g., vascular graft or pacemaker)
- Brain biopsy

**Detection of a highly pathogenic organism from clinical samples (culture or antigen)**

## Anatomical Pathology Alert Thresholds

The clinical staff who made the request are responsible for reviewing requested pathology results. This may require a system for review, particularly for cytology and where patient follow up will not prompt timely review. Many pathology specimens show an abnormality so that it is impractical to ring through abnormal results, including malignancy, however pathologists will ring to notify results if the diagnosis is changed from the frozen section report, supplementary testing or review results in an alternate diagnosis or pathologists will use their discretion to determine if an unexpected pathology is obtained