

Critical result values - Laboratory

Critical results are values that may indicate a life-threatening medical condition. The critical result values listed on this chart now flag in Apollo for quantitative disciplines such as Biochemistry and Haematology as a reminder/prompt for staff to take appropriate action. The referrer or proxy must be notified immediately by telephone. Refer to the corporate protocol for each discipline for detailed instructions, including when to contact a pathologist. When phoning, use the terminology 'critical result' to ensure that the recipient is aware of the urgency.

General instructions are provided below for cases where a contact number is not provided on the request form.

For community patients, contact the surgery and ask to speak to the referrer. DO NOT leave details with a receptionist. If the referrer is not contactable, ask to speak to an available practice doctor. If outside surgery hours, use a previously supplied private number (home or mobile) recorded in the Apollo doctor database. If you are unable to notify the referrer or their out of hours proxy, contact the on-call pathologist.

For hospital patients, contact the ward and notify a nurse (unless there are discipline dependent restrictions). Ask the nurse to contact the referrer (or after hours proxy) urgently, and ask for their name (given name and surname) and position for our records. DO NOT leave details with a ward clerk or receptionist.

For patients in aged care facilities, treat as community patients.

For non-SNP referrals, phone the referring laboratory to inform that these results need to be actioned as per critical results protocols. In general, SNP departments will phone the relevant disciplines at the referring laboratory according to their department protocols.

Record details of notification (including the name/position of the person notified) via the <Recipient> field of the (R)esults Phoned option in Apollo Results Enquiry.

The term 'referrer' includes registered medical practitioners and nurse practitioners, and other practitioners (e.g. midwives) who are able to request pathology in some circumstances. The term 'proxy' indicates another practitioner authorised to act for the referrer.

Biochemistry			
Alcohol			> 300 mg/dL [‡]
ALT			> 2500 U/L [†]
Ammonia (plasma)			> 100 umol/L
AST			> 2500 U/L [†]
Bicarbonate	Adult	< 16 or	> 45 mmol/L [†]
	< 16 years	< 16 or	> 40 mmol/L [†]
Bile Acids (pregnancy only)			> 40 umol/L
Bilirubin (Neonatal)			> 400 umol/L
Calcium (corrected)		< 1.50 or	> 3.50 mmol/L
Calcium (ionised) [#]		< 1.00 or	> 1.75 mmol/L
Clozapine			> 2000 ug/L
Cortisol (unless referred by endocrinologist)			< 80 nmol/L [†]
Creatinine Increase of > 250 umol/L over any previous results UNLESS on dialysis			
Creatine Kinase (CK)			> 20,000 U/L [†]
Digoxin			> 3.0 ug/L
Glucose [#]	IF Bicarbonate < 20 mmol/L AND no previous HbA1c > 6.4%		
	Adult		> 15.0 mmol/L [†]
	< 16 years		> 12.0 mmol/L [†]
	Otherwise	All ages	≥ 33.0 mmol/L [†]
Lipase			> 500 U/L [†]
Lithium			> 2.00 mmol/L
Magnesium			> 4.00 mmol/L
Paracetamol			> 200 mg/L
pCO2 (Arterial gases only)**			> 80 mmHg
pH (Arterial gases only)**			< 7.1
pO2 (Arterial gases only)**			< 60 mmHg
Potassium ^{^#}	Adult	< 2.5 or	> 6.3 mmol/L
	Neonatal	< 2.5 or	> 8.0 mmol/L [†]
Sodium [#]		< 122 or	> 155 mmol/L
Troponin I (IF no previous elevated result in last 24 hours)			≥ 100 ng/L
Urea			> 45 mmol/L
Urate	Adult		> 1.500 mmol/L

Biochemistry after hours critical result phoning protocol to be applied 2200-0800. All other critical results are to be phoned in the morning.

Calcium (corrected)		> 3.50 mmol/L
Glucose [#]	Adult	> 50.0 mmol/L or consistent with DKA
	< 18 years	> 30.0 mmol/L or consistent with DKA
Potassium ^{^#}		> 6.5 mmol/L
Sodium [#]		< 110 mmol/L
Troponin I		≥ 100 ng/L

Benzodiazepine panel	
Clobazam	> 2000 ug/L
Clonazepam	> 200 ug/L
Diazepam	> 10000 ug/L
Nitrazepam	> 400 ug/L
Nor-diazepam	> 2000 ug/L
Oxazepam	> 400 ug/L

Tricyclic Anti-depressant panel	
Amitriptyline	> 2000 ug/L
Clomipramine	> 2000 ug/L
Desipramine	> 2000 ug/L
Dothiepin	> 2000 ug/L
Doxepin	> 1000 ug/L
Imipramine	> 2000 ug/L
Nor-clomipramine	> 2000 ug/L
Nordoxepin	> 1000 ug/L
Nortriptyline	> 2000 ug/L

Haematology/Coagulation	
APTT	> 90 sec
Blood film showing schistocytes with platelets	< 100 x 10 ⁹ /L*
Blood film showing bacteria	
Fibrinogen	< 0.50 g/L
Haemoglobin [#]	< 70 g/L*
Haemoglobin new borns (up to 28 days old) [#]	< 95g/L* or > 240g/L*
INR	≥ 4.5
Leukaemia (acute)*	
Malarial parasites*	
Neutrophils	< 0.5 x 10 ⁹ /L*
Platelets	< 20 x 10 ⁹ /L*
Platelets in pregnancy	< 80 x 10 ⁹ /L*
WCC	> 100 x 10 ⁹ /L*
WCC children ≤ 14 years of age	> 40.0x10 ⁹ /L*

Microbiology/Molecular Pathology	
Blood cultures: Positive microscopy/culture [‡]	
CSF: Positive microscopy/culture [‡]	

- * First presentation
- † Out-of-hours contact at discretion of pathologist up until 2200 hrs
- ‡ At discretion of pathologist
- ** Not applicable for hospital in patients or emergency department
- ^ Including corrected for haemolysis
- # Critical limits apply to results reported from blood gas instruments