

## Critical Results Guide

Category	Reporting
<b>Category A</b>	<b>Results require communication within 2 hours.</b> This classification indicates potential immediate danger to the patient, or a potential life-threatening illness when urgent intervention is required.
<b>Category B</b>	<b>Results require Communication within 24 hours,</b> and preferably on the same working day.
<b>Category C</b>	Results could have an immediate impact on a patient's management (either treatment or investigation) however action is likely to be taken on the next working day. <b>Communication on the next working day is satisfactory.</b>

### Microbiology and Virology

Analyte	Result	Category
<b>Clostridium difficile<sup>1</sup></b>	Toxin Positive	<b>A</b>
<b>Faecal Microbiological Analysis<sup>1</sup></b>	VTEC / STEC Positive	<b>A</b>
<b>Faecal Microbiological Analysis<sup>1</sup></b>	Other stool bacterial pathogen studies Positive on polymerase chain reaction or on culture for Campylobacter, Escherichia coli, Salmonella, Shigella, Norovirus, Clostridium difficile, Cryptosporidium	<b>B</b>
<b>HBsAg</b>	Detected - new detection only, once confirmed by external confirmatory laboratory	<b>B</b>
<b>Hepatitis B core IgM<sup>1</sup></b>	Positive	<b>B</b>
<b>HCV Ab</b>	Detected - new detection only, once confirmed by external confirmatory laboratory	<b>B</b>
<b>Human immunodeficiency virus HIV 1 or 2</b>	Detected - new detection only, once confirmed by external confirmatory laboratory	<b>B</b>
<b>Human immunodeficiency virus (RNA)<sup>1</sup></b>	Positive	<b>B</b>
<b>Treponema Pallidum</b>	Positive specific serology- new detection in pregnancy only, once confirmed by external confirmatory laboratory	<b>C</b>
<b>Swab (Pus / Fluid aspirate)</b>	Any unexpected culture result (unusual pathogen, MDRO) where patient likely to be on inappropriate empiric therapy	<b>C</b>
<b>Surveillance Screen -CPE/CPO (rectal/stool)</b>	Positive (first)	<b>B</b>
<b>Surveillance Screen -CPE (rectal/stool)<sup>1</sup></b>	Positive (first)	<b>B</b>
<b>Varicella Zoster IgG<sup>1</sup></b>	Negative (if patient pregnant or less than one month old)	<b>A</b>

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### Haematology

Analyte	Critical Low	Critical High	Category
<b>Blood Film Morphology</b>	Blasts / Significant schistocytes		<b>A</b>
<b>Haemoglobin</b>	< 6.0 g/dL		<b>A</b>
	6.0 – 7.9 g/dL	≥ 20.0 g/dL	<b>B</b>
<b>White Blood Cell Count</b>		≥ 30 x 10 <sup>9</sup> /L	<b>B</b>
<b>Neutrophil Count</b>	≤ 0.5 x 10 <sup>9</sup> /L		<b>A</b>
<b>Eosinophil count</b>		≥ 5.0 x 10 <sup>9</sup> /L	<b>B</b>
<b>Platelet Count</b>	≤ 30 x 10 <sup>9</sup> /L	≥ 1000 x 10 <sup>9</sup> /L	<b>A</b>
	31 – 50 x 10 <sup>9</sup> /L	≥ 800 x 10 <sup>9</sup> /L	<b>B</b>
<b>INR</b>		≥ 5.0	<b>A</b>
<b>PT</b>		> 40 seconds	<b>C</b>
<b>APTT</b>		> 70 seconds	<b>C</b>
<b>Fibrinogen</b>	< 1.0 g/L		<b>C</b>
<b>D-Dimer</b>		> 500 ng/mL	<b>C</b>

### Biochemistry

Analyte	Critical Low	Critical High	Category
<b>Active B12</b>	< 25 pmol/L		<b>B</b>
<b>Adjusted Calcium</b>	≤ 1.7 mmol/L	> 3.5 mmol/L	<b>A</b>
		3.0 – 3.5 mmol/L	<b>B</b>
<b>ALT</b>		≥ 510 U/L (on first occurrence)	<b>B</b>
<b>Amylase</b>		≥ 500 U/L	<b>B</b>
<b>AST</b>		≥ 510 U/L (on first occurrence)	<b>B</b>
<b>Carbamazepine<sup>1,5</sup></b>		≥ 15 mg/L	<b>A</b>
<b>CO2</b>	< 15.0 mmol/L	> 35.0 mmol/L	<b>B</b>
<b>Cortisol<sup>2</sup></b>	≤ 100 mmol/L		<b>B</b>
<b>Creatine Kinase</b>		≥ 5000 U/L	<b>B</b>
<b>Creatine Kinase (&lt;16 years)</b>		≥ 2000 U/L	<b>B</b>
<b>Creatinine</b>		≥ 354 µmol/L (on first occurrence)	<b>B</b>
<b>Creatinine (&lt;16 years)</b>		≥ 200 µmol/L (on first occurrence)	<b>B</b>
<b>CRP</b>		≥ 300 mg/L	<b>B</b>
<b>Digoxin<sup>1</sup></b>		≥ 2.0 µg/L	<b>A</b>
<b>eGFR</b>	≤ 15 mL/min (on first occurrence)		<b>A</b>
<b>FT4</b>		≥ 50 pmol/L	<b>C</b>
<b>Glomerular Basement Membrane Abs<sup>1</sup></b>		> 10 iu/ml	<b>B</b>
<b>Glucose</b>	≤ 2.5 mmol/L	≥ 25.0 mmol/L	<b>B</b>
<b>Glucose (&lt;16 years)</b>	≤ 2.5 mmol/L	≥ 15.0 mmol/L	<b>B</b>
<b>Hypogammaglobulinaemia<sup>1</sup></b>	IgG < 3 g/L		<b>C</b>
<b>Lithium</b>		> 1.5 mmol/L	<b>A</b>
<b>Magnesium</b>	≤ 0.4 mmol/L		<b>B</b>
		IgG > 15 g/L	<b>C</b>
		IgA > 10g/L	
<b>Paraprotein<sup>1</sup></b>	Any IgE/IgD	IgM > 10 g/L	
<b>Phenobarbitone<sup>1,5</sup></b>		> 45 mg/L	<b>B</b>
<b>Phenytoin<sup>1,5</sup></b>		≥ 25 mg/L	<b>A</b>
<b>Phosphorus<sup>4</sup></b>	≤ 0.45 mmol/L		<b>B</b>

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<b>Potassium<sup>3</sup></b>	≤ 2.3 mmol/L	≥ 6.5 mmol/L	<b>A</b>
<b>Prolactin (Macro)<sup>1</sup></b>		≥ 5000 miu/L	<b>C</b>
<b>Sodium</b>	≤ 125 mmol/L (on first occurrence)	≥ 155 mmol/L (on first occurrence)	<b>A</b>
<b>Sodium (&lt;16 years)</b>	≤ 130 mmol/L (on first occurrence)	≥ 155 mmol/L (on first occurrence)	<b>A</b>
<b>Theophylline<sup>1</sup></b>		> 20mg/L	<b>A</b>
<b>Thyroid Stimulating Hormone (TSH)</b>		> 75 mIU/L	<b>C</b>
<b>Triglycerides</b>		≥ 20 mmol/L	<b>B</b>
<b>Troponin T<sup>1</sup></b>		≥ 14 nmol/L	<b>A</b>
<b>Urea</b>		≥ 30 mmol/L (on first occurrence)	<b>B</b>
<b>Urea (&lt;16 years)</b>		≥ 10 mmol/L (on first occurrence)	<b>B</b>
<b>Valproate<sup>1</sup></b>		100 mg/L	<b>B</b>

<sup>1</sup> Samples tested at approved referral laboratory.

<sup>2</sup> Before calling out Critical Cortisol result, check the PRF and only call out if patient is not part of dynamic function test e.g. Dexamethasone suppression test.

<sup>3</sup> Only call out critical high Potassium results if the sample is received and centrifuged within 4 hours and is not haemolysed.

<sup>4</sup> For phosphorus results ≤0.3 mmol/L, attempt to contact the GP as soon as possible.

<sup>5</sup> Therapeutic range based on pre-dose sampling.

Note: The critical result thresholds outlined in this guide are based on consultant clinical recommendations and are aligned to the principles of the HSE document "Communication of Laboratory Results Likely to Require Urgent Action - Version 1" and for referral testing to the external referral laboratory critical alert guides to ensure timely and appropriate clinical response.