

SJH CENTRE FOR LABORATORY MEDICINE & MOLECULAR PATHOLOGY			
Edition No.:	08	Working Instruction	Doc No: WI-BIO-0163
Authorised By	Fiona Campbell	Date: 31.03.22	Date of Issue: 31.03.22

Phoning of Critical Results in Biochemistry Core Lab

**RESULTS WHICH MUST ALWAYS BE PHONED IN THE FIRST INCIDENCE OR
IF RESULTS ARE WORSENING OR IF RESULTS ARE NOT IMPROVING OVER
TIME**

Serum Chemistry	Units	Critical Phone Limits – In-patients and Emergency Dept	Critical Phone limits - Out-patients and GPs
Sodium	mmol/L	≤120 ≥160 (see below)	≤125 ≥150 (see below) ≤120 ≥155 (A)
Potassium	mmol/L	≤2.5 ≥6.0 For haemolysed samples: -phone results <3.5 -phone results >5.3 if K ⁺ ≥6.5 in CITIM - SLU if K ⁺ ≤ 4	≤3.0 ≥6.0 ≤2.5 ≥6.0 (A) Note: For haemolysed samples: • phone results <3.5 • phone results >5.3 if K ⁺ ≥6.5 in CITIM • SLU if K ⁺ ≤ 4
Bicarb	mmol/L	≤8	≤12
Corrected Calcium Corrected Ca = Ca + [(44-Alb) x 0.0139]	mmol/L	≤1.70 ≥3.2	≤1.90 ≥3.0 ≤1.80 ≥3.5 (A) 3-3.5 (B)
Phosphate	mmol/L	≤0.35	≤ 0.45 ≤ 0.3(A) ≤ 0.45 (B)
Magnesium	mmol/L	≤0.30 ≥2.00	≤ 0.40 ≥1.80 ≤ 0.40 (A)
Glucose	mmol/L	≤3.0 ≥30.0	≤3.2 ≥20.0 ≤2.5 ≥25.0 (A)
Paracetamol	mg/L	>5	
Troponin	ng/L	Phone first instance results >50 from ED only	≥ 99 percentile (A) 99 percentile = 14ng/L
TFT		FT4 >35pmol/L and TSH <0.01mU/L FT4 <6pmol/L and TSH >20mU/L	FT4 >35pmol/L and TSH <0.01mU/L FT4 <6pmol/L and TSH >20mU/L
Cortisol	nmol/L	<100 unless a dexamethasone suppression test	<100 unless a dexamethasone suppression test ≤50 unless a dexamethasone suppression test (A)

Table2 Results which must be phoned in the first instance & again if the result becomes more abnormal

Serum Chemistry	Units	Critical Phone Limits – In-patients and Emergency Dept	Critical Phone limits - Out-patients and GPs
Amylase*	IU/L	≥450	≥450 ≥ ULN x 5 ≡ ≥500 (A)
CK*	IU/L	≥1000	≥1000 ≥5000 (A)
AST*	IU/L	≥400	≥400 ≥ ULNx15 ≡ ≥480 for female or ≥600 for male (B)
ALT*	IU/L	≥350	≥350 ≥ ULNx15 ≡ ≥495 for female or ≥615 for male (B)
Triglyceride*	mmol/L	≥20	≥20

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Table 3 Results which must be phoned but the preceding result may be taken into account as documented below

Serum Chemistry	Units	Critical Phone Limits – In-patients and Emergency Dept	Critical Phone limits - Out-patients and GPs
Urea**	mmol/L	>15 mmol/L provided result >8 mmol/L above baseline/preceding result	>15 mmol/L provided result >8 mmol/L above baseline/preceding result ≥30 New/ significant increase in a non-dialysis patient (A)
Creatinine **	µmol/L	>175 µmol/L (Female) or >200 µmol/L (Male) provided the result > 44 µmol/L above admission/preceding result	>124 µmol/L (Female) or >150 µmol/L (Male) provided the result > 44 µmol/L above baseline/preceding result ≥354 New/ significant increase in a non-dialysis patient (A)
eGFR			≤15 New presentation (A)

Notes/ Guidelines provided

- As per HSE guidelines **Category A** results are likely to require action within 2 hours
- As per HSE guidelines **Category B** results have urgent implications for the patient and must be communicated to the patient's doctor or their nominee today
- Category A and Category B are shown above to show how critical results escalation should occur
- See WI-BIO-0279 for full details of communication of critical results as per the HSE guidelines
- *Results will be phoned if there are no recent results available for comparison in LIMS/EPR, or if the results are significantly (≥50%) higher than previous levels reported in LIMS/EPR
- **Results above 15mmol/L will be phoned if there are no results available for comparison in LIMS/EPR or if there is a greater than (>) 8mmol/L increase in Urea above the baseline admission result or the immediate preceding result. Similarly, for Serum Creatinine any results above 175/200µmol/L (Female/Male) for an in-patient or 124/150µmol/L (Female/Male) for an out-patient/GP patient will be phoned where there are no results available for comparison in LIMS/EPR or if there is a greater than (>) 44µmol/L increase in Creatinine above the baseline admission result or the immediate preceding result.
- Please note that **all** serum Na⁺ results ≤115mmol/L should be phoned.
- If a patient has consecutive serum Na⁺ levels between 116-120mmol/L then these results should be phoned on at least two consecutive occasions. If subsequent serum Na⁺ levels in this patient continue to lie between 116-120mmol/L, then phone any Na⁺ level which shows a decrease of 3mmol/L or more from the previous value e.g. if Na⁺ level is 116mmol/L and the previous level was 119mmol/L, then result should be phoned as this exceeds the relative change value (RCV).
- **If scientist on phoning bench is concerned that results are not improving over a period of time, or is concerned overall about the patient's results then the results should be phoned.**

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- If the abnormal results cannot be communicated by phone, despite two attempts by Biochemistry Staff to do so, these results will then be released into EPR, and noted in the Specimen Notepad. Please note: If Scientist is concerned about results that were not communicated to ward/Clinician, the Scientist should discuss the results with senior staff or with the Biochemistry Departmental medical team i.e. Consultant Chemical Pathologist, Chemical Pathology SpR/Registrar or SHO
- If GP or Out-patient results cannot be phoned then only those results that meet the criteria for critical phoning as determined by the RCPATH guidelines Nov 2010 will be considered for immediate further action, particularly outside of routine working hours.
- Please note that abnormal results for hsTroponin T and NT-proBNP will not be phoned under normal circumstances (except in the first instance of hsTroponin T >50ng/L from ED as above).
- All other results of tests performed in the Biochemistry Department will be released on EPR as soon as they have been authorised in the department.
- **Finally, while the staff in the Biochemistry Department will do their best to adhere to the above guidelines, I remind you that it is the duty of all doctors to follow up, in a timely fashion, on the results of biochemistry investigations requested on patients under their care.**

Dr Vivion Crowley, Consultant Chemical Pathologist, Head of Biochemistry, Department, St James's Hospital, Dublin 8