Eastern Pathology Alliance NHS

Clinical Biochemistry NNUH/JPUH/QEH

STANDARD OPERATING PROCEDURE

Document Ref: EPA-BIOP-006

Criteria and Escalation Protocols for Telephoning Critical Results in Clinical Biochemistry and Immunology

1. Purpose and Scope

This document gives the telephone limits and escalation protocols for the communication of critical/urgent test results by laboratory staff in Clinical Biochemistry and Immunology at NNUH and Clinical Biochemistry at JPUH and QEH. It should be read in conjunction with the overarching EPA Telephone Policy EPA-GENP-004.

This guidance is based on the Royal College of Pathologists “The communication of critical and unexpected pathology results”, G158, October 2017.

2. Criteria for telephoning Immunology results

Results for urgent anti-glomerular basement membrane (AGBM) should be telephoned immediately to the requesting doctor or qualified nursing staff, regardless of whether they are positive or negative.

A new presentation of a positive AGBM or positive anti-neutrophil cytoplasmic antibodies (ANCA) is also telephoned.

3. Criteria for telephoning NNUH, JPUH and QEH Clinical Biochemistry Test Results

Primary Care constitutes all results that are received from GP’s and HM prisons (tel 01603 708 884). Outpatients are also included within this group as the tests are usually being requested as part of ongoing care.

Secondary Care are all Emergency Village such as A&E, AMU, and all Inpatient locations including Virtual Ward patients.

A = Critical result that should be communicated within 2 hours
B = Needs communicating but if out of hours (OOH) can be communicated next day

Analyte	**Units**	**Action Limits: Assume lower and upper cut points are ≤ or ≥ respectively**		**Communication Type**			**Comments**
		Lower cut off	Upper cut off	Primary Care/OPD	Secondary	NNUH ED ONLY	
AKI 1‡				A	A	A	All new occurrences & only if K ≥ 6.0
AKI 2‡$			AKI 2 with K^+ <6.0	B	A	A	To be communicated within 24h including w/ends
AKI 2‡$			AKI 2 with K^+ ≥6.0	A	A	A	All new occurrences
AKI 3‡			AKI 3	A	A	A	All new occurrences
ALT (Paediatric ≤16 yrs)	U/L		500	A (OOH do not phone 111)	A	A	GP to be contacted in hours only. *♯See below*
ALT	U/L		750	B	A	-	
Ammonia	µmol/L		100	N/A	A	-	
Amylase	U/L		550 (Adults only)	A	A	A	Paediatrics 5x ULN of reference range
Bicarbonate	mmol/L	10		B	A	-	
Bilirubin (Direct)	µmol/l		25	B	A	-	Neonates only
Calcium (adj.)	mmol/L	1.8	3.0	A	A	-	
Cortisol	nmol/L	<100		B	A	-	If not on steroids, or if not a low dose dexamethasone suppression test.
Creatinine	µmol/L		Adults: 354 Children: x2 Upper Limit of Normal	A	A	A	Renal OPD – Only if result increase of at least 50 within 3 weeks of previous
CRP	mg/L		300	A	-	-	
Analyte	**Units**	**Action Limits: Assume lower and upper cut points are ≤ or ≥ respectively**		**Communication Type**			**Comments**
		Lower cut off	Upper cut off	Primary Care/OPD	Secondary	NNUH ED ONLY	
Digoxin	µg/L		2.5 (more urgent if K <3 mmol/L)	A (if K <3) B (if K within range)	A	-	Note: GP/OPD next working day if K^+ within ref range

Ethanol	mg/dL		400	A	A	-	Phone any positive results in <18 yrs
Glucose	mmol/L	2.5	25 (adults) ≥15 if ≤16yrs	A	A	-	30 if known diabetic for GP's
Lithium	mmol/L		1.5	B	A	-	
Magnesium	mmol/L	0.4		A	A	-	
Paracetamol			Positive	A	A	A	
Phenytoin	mg/L		25	B	A	-	
Phosphate	mmol/L	0.3		B	A	-	
Potassium	mmol/L	2.5	6.5	A	A	A	**See below*
Salicylate	mg/L		300	A	A	-	
Short Synacthen test	nmol/L	250 (30 or 60 min)		B	B	-	If details state "Usual steroid omitted" these do not need to be phoned
Sodium	mmol/L	125 130 if <16 yrs	150	A	A	A	
hs-Troponin I-time 0	ng/L		Female 15.6 Male 34.2 U 15.6	A	A	A	¥ *See below* ≠ *See below*
hs-Troponin I-2nd sample	ng/L		Only if ≥50% delta change	A	A	A	Not cardiology ¥ *See below* ≠ *See below*
Urea	mmol/l		30.0 ≥10.0 if <16yrs	A	A	A	
TCK	U/L		≥5000	A	A	-	
Theophylline	mg/l		25	B	A	-	
Xanthochromia (NNUH & QEH only)			Positives	N/A	A	A	All results suggestive or confirmatory of SAH

‡ AKI at any stage is not phone through to NNUH Critical Care Complex (CCC) in agreement with Dr Suhas Kumar re-confirmed 02/11/23.

$ AKI 2 deviation is based on a local agreement with the IC24 and Renal teams.

♯ Following a national alert all paediatric ALT results need urgent action. Within core hours (8.00-17.30) the ALT should be phoned to GP's for Primary Care, and to the paediatric requestor in Secondary Care. For all GP requests authorised OOH please phone through to NNUH CAU either on bleep 0009 or DECT x6580. For JPUH inpatients within hours contact the requesting consultant, and for OOH contact the on call SPR. For NNUH inpatients all results to go to CAU teams either on bleep 0009 or DECT x6580. FOR QEH inpatients all results to on call middle grade via switchboard 01553 613613 bleep 3350 (24/7), or on call consultant paediatrician.

≠ Troponins received from Haematology Outpatients and Haematology Consultants does not need to be phoned and clinical details should include "?cardiac amyloidosis. Do not phone elevated Troponin" as agreed by Dr C Gomez (Haematology).

* Renal team covering NNUH/JPUH have requested not to be phoned with high potassium results on pre-dialysis patients and low potassium on post-dialysis patients.

¥ Troponin is not available to Primary Care, but phoning limits have been included in case any should be received.

The telephone limits used are based on the Royal College of Pathologists 2017 document. However, where appropriate some of these have been amended in response to local requirements. Following a review in April 2022 it was confirmed that we would not phone AST or urate. For AST the majority of these were requested by Gastroenterology and not requiring further communication, and it is difficult to communicate raised urates in pregnancy and to date this has been accepted. As a further safe guard any result that is phoned to 111 will be followed up with a phone call to the requesting GP on the next working day.

4. Escalation protocols

- Critical results should be telephoned immediately upon verification of accuracy
- One unsuccessful telephone call or page is sufficient to escalate to the next step
- Please follow site specific protocol steps in order
- Communication of critical results should take place within 2 hours and no longer
- All attempts to communicate a critical result should be logged in the staff notes of the result record. This is to ensure a complete audit trail for shift handover, audit, and any incident root cause investigation.

PLEASE NOTE: If a result cannot be communicated within 2 hours a Datix/Ulysses/Safeguard MUST be raised.