REVISED PHONE LIMITS FOR ABNORMAL LABORATORY RESULTS: GUIDANCE FOR CONTACTING GPs

In 2007, the Royal College of Pathologists, in partnership with the Royal College of General Practitioners, issued a document entitled *"Out of hours reporting of markedly abnormal laboratory test results to primary care; advice to pathologists and those that work in laboratory medicine".* The document itself is available for viewing on the website at www.rcpath.org/resources/pdf/g025v2outofhoursnov07.pdf

In the light of this publication, the Specialty Management Teams (SMTs) in Clinical Biochemistry, Haematology and Microbiology across Lothian undertook a comparison of existing practise within Lothian for telephoning abnormal results with the advice recommended by the RCPath. Revised proposals for these limits were agreed in consultation with the Primary Care Laboratories Interface Group (PLIG) and the GP Subcommittee (of Lothian Area Medical Committee).

The attached tables summarise the revised phone limits in Clinical Biochemistry (table 1) and Haematology (table2). The phoning thresholds occasionally differ from the RCPath recommendations but these are comparatively few in number and always err on the side of caution. The Microbiology SMT issued statements about contacting GP services in the out-of-hours period which are also included in this document.

The phone limits apply on a 24/7 basis and will be phoned to the GP surgery or LUCS, depending on the time when the abnormal result is identified. The majority of GP results are made available in the 08.00 – 18.00 h period Mon – Fri ('core period') so contact with LUCS should be on a limited basis only.

As far as possible, please use the patient addressograph label and confirm that the patient's contact phone number is up-to-date. All Lab results should phoned to the Prof to Prof line on 0131 537 2713.

Criteria for telephoning NEW abnormal results in Clinical Biochemistry to GP locations (table 1)

Analyte (serum/plasma)	Unit	Proposed Low limit	Proposed high limit
Sodium	mmol/L	<125	>150
Potassium	mmol/L	<3.0	>6.1
Urea	mmol/L	n/a	>30
Creatinine	µmol/L	n/a	>250
Glucose	mmol/L	<2.5	>20 mmol/L (>25 mmol/L if known diabetic)
Calcium (adjusted)	mmol/L	<1.80	>3.0
Magnesium	mmol/L	< 0.6	n/a
Phosphate	mmol/L	< 0.3	n/a
ALT	U/L	n/a	>750
Total CK	U/L	n/a	>750
Amylase	U/L	n/a	>200
Carbamazepine	mg/L	n/a	> 25 mg/L
Digoxin	µg/L	n/a	> 2.5 µg/L
Theopylline	mg/L	n/a	> 45 mg/L
Phenytoin	mg/L	n/a	> 40 mg/L
Phenobarbitone	mg/L	n/a	> 70 mg/L
Lithium	mmol/L	n/a	>1.5
Troponin I	µg/L	n/a	If raised

Comments

1. Limits are based on the **first** abnormal set of results or repeat results that have shown a markedly significant change for an individual patient. Results exceeding a threshold will not necessarily be phoned if it is clear that a recent set of results with a similar degree of abnormality is already known; the laboratory will exercise some discretion here.
2. The RCPath document defines phone limits for AST, CRP and triglyceride which have not been adopted here.
3. Phone limits are now identified for creatinine, ALT and CK (previously not phoned out).
4. Attention is drawn to other aspects of the RCPath document which cover identifying, communicating and acting upon these abnormal test results.

Criteria for telephoning NEW abnormal results in Haematology to GP locations (table 2)

Peripheral Blood Counting (FBC)			
Parameter	**Level**	**Unit**	**Comment**
Haemoglobin	< 70	g/l	Or fall of 40g/l in 24hrs
	>190	g/l	or Haematocrit > 54
WBC	< 2.0	x 10^9/l	Unless associated with chemotherapy
	> 30.0	x 10^9/l	
Neutrophils	< 1.0	x 10^9/l	**Core period**
	< 0.5	x 10^9/l	**Outwith core (LUCS)**
	> 50	x 10^9/l	**Outwith core (LUCS)**
Lymphocytes	> 50	x 10^9/l	Unless known CLL.
Platelets	< 50	x 10^9/l	**Core period**
	< 30	x 10^9/l	**Outwith core (LUCS)**
	>1000	x 10^9/l	
Coagulation parameters			
INR	> 4.5	Ratio	**Core period & Friday pm results only.**
	> 6.0	Ratio	**Outwith core (LUCS) – including PLT sessions**
Coagulation screen			Clinical details of bleeding, epistaxis, purpura etc
APTT	> 45	sec	
PT	> 20	sec	
Fib	< 1.0	g/l	
General parameters			
Unsuitable samples			Emergency samples in the following categories: (no/wrong sample, clotted, insufficient, haemolysed, Mandatory Data Set failure)
Vitamin B_{12}	< 125	ng/l	Initial diagnosis
Serum Folate	< 1.5	ng/l	Initial diagnosis
ESR	> 70	mm/hr	Only with clinical details of TA, giant cell arteritis, polymyalgia rheumatica
Malarial Parasites	Positive		
Morphology			New acute leukaemia or CML. Evidence of haemolysis if Hb < 80g/l. Grossly abnormal morphology.

Comments

Haematology phone criteria sometimes differ between laboratory core hours and out with core hours **(generally coinciding with LUCS time period).** Again, the majority of phoning should be in the core hour period with limited contact with LUCS.

Criteria for telephoning abnormal results in Microbiology (including Virology)

Microbiology will contact the out-of-hours hub with results:

1. That require urgent clinical action as determined by the on-call Consultant Microbiologist.
2. Where there are significant public health risks as per the Public Health etc (Scotland) Act 2008.
3. Where this has been prior arranged by the in-hours team in consultation with the Duty Microbiologist and out-of-hours hub.

For results arising in patients discharged from hospital the responsibility for action lies with the hospital team that cared for the patient. Microbiology will contact the team responsible and may remind the hospital team of the option of contacting the out-of-hours hub if they cannot contact the patient.

Examples of things that may need to be communicated (this list is not exhaustive):

- Acute infections with outbreak potential known to be in close community or residential setting, e.g. boarding school, nursing home: e.g. Salmonella in a nursing home. Transmissible enteric pathogens, e.g. Ecoli 0157. (All Ecoli 0157 results are phoned out at provisional identification stage).
- Transmissible respiratory pathogens with serious implications for the patient's immediate care and/or contacts, e.g. legionella infection, TB, invasive Lancefield group A streptococcus infection.
- Other serious infections such as diphtheria.
- Acute bacterial infections in pregnancy and the post-partum period, e.g. "Streptococcus pyogenes in a high vaginal swab".