Dear [Name],

Freedom of Information (Scotland) Act 2002
I refer to your e-mail dated 20th September 2013, requesting:

“1) Present day: Any guidelines, policy or Standard Operating Procedures used in NHS Grampian haematology laboratories today to provide guidance to technical haematology staff on the validation of Full Blood Count results, including the thresholds when examination of Blood Film should or must be done, and when a member of medical haematology staff should or must be contacted.

2) June 2004: Any guidelines, policy or Standard Operating Procedure used in NHS Grampian haematology laboratories in June 2004 to provide guidance to technical haematology staff on the validation of Full Blood Count results, including the thresholds when examination of Blood Film should or must be done, and when a member of medical haematology staff should or must be contacted.”

I can now respond as follows:

Present day: Any guidelines, policy or Standard Operating Procedures used in NHS Grampian haematology laboratories today to provide guidance to technical haematology staff on the validation of Full Blood Count results, including the thresholds when examination of Blood Film should or must be done, and when a member of medical haematology staff should or must be contacted.

All BMS staff are trained in screening of Full Blood Count results by senior staff using the Standard Operating Procedure “Screening and Authorisation of Results LP 000 026” dated 03.05.2013. This gives detailed instructions about the technical validation of results, the authorisation of results to be available for clinicians to view and when a blood film is required.
These instructions include:

“The following clinical details merit a film even if the Full Blood Counts results are normal:
Limping/irritable hip (child) Splenomegaly
Bloody diarrhoea HUS/EColi 0157 infection
? Leukaemia ? Malaria
FAO Laboratory Medical Staff”

If there are no previous blood counts on a patient the following applies:

**Guidelines for the authorisation of FBCs with no previous results**

<table>
<thead>
<tr>
<th>Normal Hb</th>
<th>Adult Male Age 14 - 70</th>
<th>Adult Male Age &gt;70</th>
<th>Adult Female Age 14 - 70</th>
<th>Adult Female Age &gt;70</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;120 or &gt;190 Film</td>
<td>140 - 180</td>
<td>116 - 156</td>
<td>120 - 160</td>
<td>108 - 143</td>
</tr>
<tr>
<td>&gt;105 - Film</td>
<td>&lt;95 or &gt;170 Film</td>
<td>&lt;90 or &gt;160 Film</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Any Hb <80 – Urgent Film

<table>
<thead>
<tr>
<th>Normal MCV</th>
<th>83 - 98</th>
<th>83 - 98</th>
<th>83 - 98</th>
<th>83 - 98</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;75 - Film</td>
<td>&lt;75 - Film</td>
<td>&lt;75 - Film</td>
<td>&lt;75 - Film</td>
<td></td>
</tr>
<tr>
<td>&gt;105 - Film</td>
<td>&gt;105 - Film</td>
<td>&gt;105 - Film</td>
<td>&gt;105 - Film</td>
<td></td>
</tr>
</tbody>
</table>

### Normal PLT

- 100 - 800 same regardless of sex and age
- Plt <100 with previous plt clumping - Film
- Plt <100 - Urgent Film
- Plt >800 – Film if no clinical reason for raised count

### Normal WBC

- 4.0 – 10.0
- WBC <3.0 >30.0 - Film
- Neutrophils <1.0 - Urgent Film
- Lymphocytes >5.0 – Film
- Monocytes >1.5 - Film
- Eosinophils >1.5 - Film
- LUCs >0.5 – Manual Diff then film if appropriate
- Baso >0.2 – Manual Diff then film if appropriate

These guidelines are based on the published guidelines of the International Society for Laboratory Haematology. Members of laboratory staff reviewed these guidelines and adapted them for use in the laboratory. We were not comfortable with some of the recommendations for blood count levels when a film was indicated, feeling that they were too restrictive. By relaxing some of the levels more blood films are sent for reporting.
Much of the workload of blood count results is managed by auto-verification. This involves setting up rules in the laboratory information system to assess the result against a laboratory range described as limits and delta checking. If the result lies out with the laboratory limits it indicates action may have to be taken. Delta checking compares the current result with the most recent previous result. If the result fails delta checking again it indicates action may have to be taken. Such results are put into a queue for review by BMS staff. All other results are auto-verified.

Blood counts in children show much more variation in the normal ranges related to age. For this reason all results on paediatric samples are sent to the queue for review. Delta checking still applies and on the screening computer terminals there is a colour coded system for alerting staff of results out with normal range.

When BMS staff complete their training in screening of results competency sheets are completed and signed off.

**June 2004:** Any guidelines, policy or Standard Operating Procedure used in NHS Grampian haematology laboratories in June 2004 to provide guidance to technical haematology staff on the validation of Full Blood Count results, including the thresholds when examination of Blood Film should or must be done, and when a member of medical haematology staff should or must be contacted.

At this time there were also Standard Operating Procedures for screening of and authorisation of blood count results and the requirement for the film review. Copies of these Standard Operating Procedures, dated April 2001, are available for review.

The use of the International Society for Laboratory Haematology guidelines were not in place at this time and auto-verification was not established.

There were two levels of screening. Primary screening of all Full Blood Count results were performed by senior BMS staff referring to paper request forms and the current and cumulative results. A decision was made to authorise the results, make a film for reporting urgently, by medical staff or by BMS staff, or refer to secondary screening by medical staff. Secondary screening allowed medical input at an early stage and a decision about further tests, film review or contacting of clinicians in Primary or Secondary Care.

As noted above it is very difficult to be definitive about the decision to refer a result for a blood film or to notify a member of haematology medical staff. It depends on the clinical context and the actual result, particularly in comparison with any previous results. The primary screening was by senior BMS staff trained and experienced in haematology with access to the “safety net” of secondary screening with more clinical input.

Under section 20 (1) of the Act, if you are dissatisfied with the way NHS Grampian has dealt with your request, you have a right to request a review of our actions and decisions in relation to your request, and you have a right to appeal to the Scottish Information Commissioner.

A request for review must be made within 40 working days and should, in the first instance, be in writing to: Directorate of Corporate Communications, Ashgrove House, Foresterhill, Aberdeen, AB25 2ZN or by email to grampian@nhs.net.
Requests for appeal should be made in writing to: Scottish Information Commissioner, Kinburn Castle, Doubledykes Road, St Andrews, Fife, KY16 9DS
Telephone: 01334 464610, Fax: 01334 464611
E-mail: enquiries@itspublicknowledge.info

Yours sincerely

Chris Morrice
Information Governance Manager
NHS Grampian