Provision of requests for Pathology Tests

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ASSOCIATED PROCEDURES & FORMS	
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1. Purpose and Scope

The purpose of this document is to provide guidance for service users for the provision of requests (Request forms and samples) to enable the laboratories to undertake tests and report accurate results in a timely manner.

The purpose of this procedure is to provide guidance to service users regarding the provision of requests; it provides information required on request forms and blood samples, to enable the Laboratory to process tests and provide accurate and timely blood test results.

This procedure includes guidance regarding the communication of urgency to ensure due priority is given to the processing of requests and to enable results to be communicated appropriately.

This procedure includes provision for users to request additional (Add-on) tests, as this may differ for different tests and Pathology disciplines, to reduce the need for patients to be unnecessarily re-bled.

This procedure summarises sample acceptance criteria which is important to prevent the use of samples that lack sufficient accurate patient information for confidence that they were taken from the correct patient; the purpose of this procedure is also to minimise the need for patients to be re-bled unnecessarily. Samples must also be appropriate for the test(s) requested and compatible with current instrumentation; this procedure provides guidance and directs users to more detailed user information available on Pathology Handbook. Information on the Pathology Handbook should be referred to as it includes limitations of methods and lists the factors that may influence the quality and accuracy of results; this information includes test repertoires, identifies when tests can be processed, which need to be discussed with a Pathology Consultant before requesting and which need to be referred to reference centres.

This procedure also provides guidance as to the labelling of blood sample bottles and other sample types with respect to the use of pre-printed (addressograph type) labels as some of these may not be compatible with current instrumentation.

2. Responsibility

It is the responsibility of the Phlebotomist to ensure that the risk to patients due to unsuitable or inadequately labelled requests is reduced and kept to a minimum by enforcing standards of best practice, as detailed within this procedure.

Only individuals trained to obtain and label blood samples are authorised to bleed patients. Only individuals who have been trained and competency assessed to take and label blood samples for Blood Transfusion are authorised to take samples for Blood Transfusion (Group & Save). Only Medical staff may request blood tests or blood products except where this is delegated to specific individuals working according to protocol

The Director of Nursing and Medical Director are responsible for the implementation of this procedure ensuring that the Trust provides/supports the training required for staff to undertake and that there is appropriate competency framework to support this.

Clinical Directors / General Managers are responsible for ensuring staff involved in all aspects of blood test requesting and blood sample collection undergo relevant training for the procedures that they are required to undertake.

Unit / Ward / Department managers are responsible for identifying training needs and ensuring staff training is available for all staff and that all staff expected to participate (in the taking of blood samples, completion of request forms, transport of blood samples, receipt or accessing of results) are trained against competency framework. Unit / Ward / Department managers are responsible for ensuring staff who bleed patients have been trained and are competent to accurately label blood samples and are responsible for ensuring requests are transported to the Laboratory in a timely manner.

Clinicians are responsible for ensuring adequate samples are taken and accurate and sufficient clinical & patient information is provided on samples and request forms. The Pathology Department relies on requesting Clinicians to meet the requirements for patient consent for the appropriate investigations requested and conducted. Clinicians requesting blood tests are responsible for ensuring the results of tests are followed up and acted upon in a timely manner.

3. Definitions

Sample - A specimen of venous blood supplied in a blood bottle for the purpose of analysis.

Test - An individual result used to assist in diagnosis or monitoring of treatment; a list of tests is available in the Test Directory in the Pathology Handbook; this includes the type of bottle to be used, volume of blood required, test limitations and additional User information. Individual tests may be grouped together for ease of requesting e.g. LFT, FBC.

Request - Sample and Form (handwritten or via Order Comms) provided with written information which must include patient information, the tests required and relevant clinical data. Each section of request forms must be fully completed to enable requests to be processed and results to be interpreted. Requests may be made on paper forms or electronically.

Instrumentation - The Analytical equipment and or methodology used in the analysis of the sample to obtain Blood test results.

User - The Clinician providing the request and to whom result will be sent, by whichever means they are conveyed.

4. Records

All records / documentation generated as a result of a process shall be entered onto the departments Storage of Clinical Material, Records and External Documents Matrixes / Policies.

5. Process

5.1 Completion of Requests

5.1.1 Type of Request form

The correct request form must be used; there are different forms for:

- A&E (Haematology and Clinical Biochemistry)
- General Pathology (Haematology and Clinical Biochemistry)
- Antenatal Booking (Haematology & Serology)
- Blood Transfusion (Group & Save)

Images of these can be found in the Pathology Handbook Test directory on the screens for individual blood tests. Pathology Request forms are ordered via Office Depot.

5.1.2 Patient demographic information to include on Requests

Sufficient accurate patient information must be provided on request forms and samples to eliminate uncertainty as to the patient's identity; if some erroneous data is provided, this will call into question the accuracy of other information and may mean a request cannot be accepted. The minimum amount of information acceptable on most Requests is the patient's surname plus **two** of the following:

- First Name
- Hospital (or NHS) Number
- Date of Birth

Allowance is made for unrepeatable or difficult to obtain samples; in the case of these or minor demographic errors, requests may be accepted and a comment added to the report to record details of the error.

In the case of Blood Transfusion requests, the First name, Surname, Hospital Number and Date of birth are all required on the form and sample.

5.1.3 Time of Phlebotomy

It is important to include the time and date of phlebotomy so in the case of tests that require the use of fresh samples, allowance can be made for old samples if delivery to the Laboratory is delayed. Some old samples (bled more than four hours previously) may give erroneous results which could lead to unnecessary interventions. In the case of other requests i.e. when testing antibiotic levels (or pre and post dialysis), it is important to be able to establish which was taken first.

5.1.4 Signature of Phlebotomist

The person who bled the patient must sign the request form and sample to confirm that they identified the patient correctly; this must be legible so if there is any problem with the request it is possible to identify and contact the person who bled the samples. Staff must sign or record a numerical identifier where such a system is in use; before assigning staff numeric codes to use on request forms, Pathology should be involved to ensure the codes assigned are not already in use.

In the case of Blood transfusion requests, the form must also be signed by a requesting clinician as this form acts as a prescription for blood.

5.1.5 Clinical information to be included on Request forms

Clinical information must be provided to justify the tests requested and to avoid unnecessary Laboratory work. For instance, if a patient is known to have a haematological malignancy, this should be included on the request form because Laboratory staff are likely to repeat tests when results are abnormal and spend time trying to establish a diagnosis if they are unaware the patient's condition is already known. Some tests such as Coagulation screens from A&E may not be performed unless the clinical data provided justifies the request.

It is also important to supply foreign travel information if a Malarial parasite screen is being requested; the fact the patient has a 'foreign name' does not of itself justify a Malarial parasite screen if the patient has not travelled abroad.

In the case of Blood Transfusion requests, samples will be processed in order of clinical urgency so if (for instance) a patient is suspected to have a major haemorrhage, this should be recorded on the request form to allow the request to be given due priority. In the case of some tests it is important to know whether or not the patient has been fasting, so this should be recorded; when testing samples for antibiotic levels, it is important to know the time since last dose.

5.1.6 Blood Transfusion Request forms

Aside from clinical information necessary to prioritise requests, the following information is important:

- **Previous Transfusion** – A recent transfusion will influence how long a Group and Save (G&S) sample is valid for (can be used to crossmatch blood). If a patient has been recently transfused, they could develop red cell antibodies that were not previously detectable and the use of an old sample could lead to a transfusion reaction.
- **Special Blood products** – It is essential to know if a patient needs special blood products; if a patient who needs irradiated blood is transfused Non-irradiated blood, they are at risk of developing Transfusion Associated Graft vs Host Disease (TA-GVHD). In the case of post Bone marrow transplant patients or those under the care of a Haematology Consultant, it is important to ask if they carry a Special products card or need special blood products. For more information about this follow the link: Patients who must be given Irradiated blood
- **Previous pregnancies** – The likelihood of red cell antibodies is much higher in women who have had previous pregnancies. During pregnancy the G&S validity period is reduced because the presence of foetal cells may sensitise the woman and lead to the development of red cell antibodies capable of causing a transfusion reaction; a recent sample is necessary to check that no new antibodies have been made.
- **Reason for transfusion** – The indication for transfusion should be documented; in the case of surgery, the procedure and date & time should be provided so blood products can be prepared in time or a new sample requested if the one supplied will no longer be valid by the time of surgery.

Care should be taken to ensure that the sample and form are correctly labelled and also signed. The signature on the Group and Save sample must accurately match the signature on the form of the person taking the blood. Failure to fully complete the request form may result in delays in processing transfusion requests. More information about completing G&S requests forms is available in the Pathology Handbook: Guide to completing a G&S request form and about taking samples for Blood Transfusion: Labelling a blood sample for Blood transfusion.

5.2 Blood samples and bottles

5.2.1 Underfilled Blood samples

An attempt will be made to process underfilled samples but some (E.g. Underfilled Coagulation samples) cannot be used as the results obtained may be inaccurate due to an incorrect proportion of anticoagulant to blood. A **Sample Volume chart** is available in the Pathology Handbook.
Under no circumstances should two (or more) underfilled samples be combined.

5.2.2 Sample quality

Good phlebotomy technique is critical to ensure accuracy of results. The use of syringes and cannulas for drawing blood is associated with haemolysed samples that may give erroneous Potassium and Coagulation results; this is especially likely when blood is squirted from a syringe into bottles through the cap. For this reasons haemolysed samples will not normally be accepted for analysis. It is also important that blood is drawn using a vacutainer system into bottles in the correct order to avoid Chemistry samples being contaminated with anticoagulant in EDTA bottles; this can result in raised potassium levels.

Advice about the correct **Phlebotomy draw order** is available in the Pathology Handbook. Under no circumstances should syringes be used; refer to the **Venepuncture procedure**.

5.2.3 Sample bottles

Blood samples must be provided in the appropriate bottles for the test(s) requested and be compatible with current instrumentation; the sample bottles required are listed in the **Test Directory** for specific tests. The tests are listed alphabetically. See example for **Cold Agglutinin** test. Sample bottles must not be used after their expiry date, and must be stored in accordance with the manufacturer's specifications on the bottle (i.e. within the required temperature range)

5.2.4 Use of adhesive labels

Pre-printed/Addressograph labels may be used on blood samples for Haematology and Clinical Biochemistry tests but not for Blood Transfusion. The labels must include suitable information (Full name, Hospital number and Date of birth) as with hand labelled samples and be of appropriate size. The label must be placed on the sample bottle so that it fits within the existing label and leaves a 'window' that allows the level of blood to be checked (for haemolysis etc). Oversized labels that are longer than the sample bottle or need to be wrapped around the bottle will not be suitable for processing. Any adhesive labels to be used on sample bottles must be approved by Pathology in advance of their introduction.

5.2.5 Requests for Blood

It may be necessary to provide two Blood transfusion Group and Save samples taken at different times if the patients group has not been tested previously. Please phone the Blood Transfusion Laboratory on ext: 3535 (or 7080 outside core hours) to check whether there is a valid sample or whether a further sample is required.

5.3 Communication

5.3.1 Clinically urgent requests

Requests from Acute areas are automatically treated as clinically urgent; these include A&E, ITU, HDU, Labour ward, SRU, NICU, the Paediatric Acute Medical wards. Requests from other areas that are clinically urgent should be clearly marked as such on the request form so they can be prioritised. When a request is critically urgent, it should be phoned to the relevant Laboratory and hand delivered to Pathology so it can be fast-tracked. Please do not write 'please phone results' on request forms unless there is no access to electronic results (Result reporting); if this is the case, please provide a phone or bleep number on the request form. The laboratories have criteria for telephoning critically abnormal results.

5.3.2 Add-on tests

Clinical Biochemistry Add-on tests may be requested electronically **Add-ons (http://www.baspath.co.uk/addon.htm);** this can be accessed via the Pathology Handbook front page.

Haematology Add-on tests must be requested by phone (see Laboratory contact numbers) so a check can be made that a suitable sample is available whilst the requestor is still on the phone.

5.4 Limitations of method

Factors that may influence the accuracy of test results (such as age of sample) are listed in the Test Directory under limitations and causes of rejection.

5.5 Consultant approval

Some non-routine tests such as Thrombophilia screen must be discussed with a Haematology Consultant before being requested as they are only indicated in some cases and the timing of the test is critical (i.e. Thrombophilia and Lupus Anticoagulant screens should not be performed within four weeks of pregnancy or in acute phase). The tests are not run outside core hours and should only be sent to the Laboratory during office hours (9.00 – 17.00) weekdays. See also 4.9 for timing of testing. More detailed information can be found in the Test Directory. Consultant Contact details are available in the Pathology Handbook.

5.6 Non-routine & Referral tests

In the case non routine tests that need to be referred to Specialist centres for testing please refer to the Test Directory as it may be necessary to discuss the request with the appropriate Pathology Consultant before requesting. When samples need to be referred to a Specialist Laboratory, advice should be sought as to the timing of phlebotomy so the transport can be arranged and the samples sent while the receiving Laboratory is open.

Most samples can only be sent during the day and some cannot be stored overnight; others must not be sent on Fridays.

Other non-routine tests are processed on-site but may be tested infrequently; the Test Directory should be referred to before bleeding to establish when samples can be sent without prior discussion.

5.7 Repeat tests

5.7.1 Unnecessary Repeat tests
Typing tests such as HLA B27 typing need only be performed once as the result should not change. Please check that these tests have not already been performed.

5.7.2 Frequency of repeat tests
The timing and frequency of repeat testing is important. When it is necessary to repeat a test following an abnormal result (E.g. positive Kleihauer test), the repeat test should be bled after sufficient time has been allowed for an intervention (E.g. administration of Anti-D immunoglobulin) to take effect. In the case of a repeat Malarial parasite screens (when the initial one is negative), the sample should be taken when the patient has pyrexia.
Timing is also important for a number of other tests (including Troponin T, serum HCG, testosterone, cortisol etc.); please refer to the **Test Directory**.

6. Implementation

This document will be available on the Pathology Handbook

7. Monitoring and Audit Arrangements

Blood Transfusion samples are audited on an ongoing basis and reports submitted to the Hospital Transfusion Committee (HTC) and CQB. Incidents of 'Wrong blood in tube' and other incidents relating to Blood transfusion requests are also reviewed at HTC meetings and escalated either via CQB and OMB as necessary. The provision of poor quality samples (Haemolysed Chemistry and underfilled Coagulation) are monitored and results disseminated to relevant areas or reported via the RPRT quality indicator dashboard.

8. Content Contributions

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9. Approval Process

Approval of the document will be through Pathology Clinical Governance Group.

10. References