

2 User Instructions

2.1 Blood Specimen Collection and Handling Procedure

The purpose of this procedure is to give guidance on achieving a quality blood sample, in a safe and efficient manner for the patient and the health care worker and preparing the specimen for transportation to the laboratory.

Equipment

- Gloves (non-sterile)
- Clinically clean surface e.g. Trolley, Tray etc.
- Cotton Wool
- Tourniquet (disposable or re-useable)
- Vacutainer Eclipse Needle with integrated Holder
- 2% Chloraprep solution
- Sharps Container
- Alcohol Gel
- Appropriate Specimen Tubes
- Disposable Aprons
- Micropore tape/ Elastoplast's
- Danger of infection label's
- Sample bags (clear/green/red/blue)
- Sample transfer bags large (red)

Method of Phlebotomy using Vacutainer Blood Tubes

1. Wash your hands with soap and water.
2. Consult the request form to confirm which blood tests are required.
3. Refer to the [test library](#) or for the sample tubes required and any special requirements for the test.
4. Ensure that all equipment required for the procedure is present, that seals are intact as proof of sterility, and that the correct blood bottles for the tests are available and are within the printed expiry date on each bottle.
5. Put on apron, Gel Hands.
6. Check you have the correct patient using **POSITIVE PATIENT IDENTIFICATION** (ask them their name and date of birth) and check this information against the information on the request form. Blood transfusion specimens, taken in hospital, also require the information to be checked against the patient's wrist band.

Patients requiring specimens for blood transfusion must have a fully completed printed wristband (5 identifiers). If they do not have a completed wristband, or if the details conflict those on the request form or those

provided by the patient, DO NOT TAKE THE BLOOD and communicate this to a member of staff on the ward.

7. Explain the procedure to the patient and ensure that they consent to the procedure before progressing. Allow the patient to ask any questions and discuss any problems that may have arisen previously.
8. Ensure that the patient is sitting comfortably. Patients should **not** stand or sit on high stools during the procedure because of the possibility of fainting. A reclining (supine) position is preferred; however, sitting in a sturdy, comfortable chair with arm supports is also acceptable.
9. Apply tourniquet to the upper arm (always use the non-dominant arm if possible) at a pressure that is greater than venous and lower than blood pressure. This allows blood into the arm but stops it leaving causing the veins to fill with blood. **The tourniquet should not be left on for more than 1 minute** because it becomes uncomfortable and causes haemoconcentration (increased blood concentration of large molecules, such as protein, cells and coagulation factors).
10. Select a vein (see “Choosing a Vein” below) on the non-dominant arm and palpate. Avoid the brachial artery and avoid thin and thrombosed veins. The patient may be asked to clench their fist and straighten their arm; this is to increase the prominence of the veins. Only ask to clench and unclench a few times because excessive clenching can also lead to haemoconcentration.
11. Clean the area of skin with 2% Chloraprep solution wipe for 15 seconds in a crisscross action and leave for at least 15 seconds to dry.
12. Gel hands and apply gloves.
13. Anchor the vein by applying manual traction on the skin a few centimetres **below** the proposed site. Do not re-palpate vein at the insertion site.
14. Insert the needle into the vein, smoothly with the eye facing up at an angle of 30 degrees; this is to enable the entry to be as flush as possible with the skin. Level off the needle once it is in the vein.
15. Advance the needle approximately 1 mm into the vein to prevent it from becoming dislodged during venepuncture. Do not exert pressure on the needle; otherwise a through puncture may occur.
16. Placing your forefinger and middle finger on the flange of the holder and the thumb on the bottom of the tube, push the tube to the end of the holder, puncturing the diaphragm of the stopper. NB [Refer to order of draw](#) of samples.
17. Withdraw the required amount of blood. Using the Vacutainer, as soon as the tube is inserted (and the needle is in the vein), blood will begin to flow immediately. Release the tourniquet once the blood starts flowing. If the tube is inserted and nothing happens, draw back slightly. As long as the needle remains under the skin the tube will retain its vacuum and when the vein is found the blood will immediately flow into the tube.

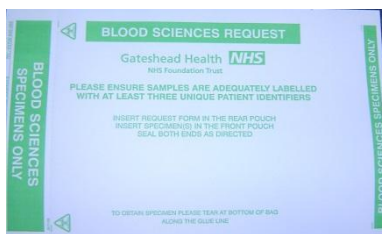
18. When the vacuum is exhausted and the blood ceases to flow, apply a soft pressure with the thumb against the flange of the holder to disengage the stopper from the needle and remove tube from the holder.
19. If more samples are required repeat from step 17. While the blood is flowing into succeeding tubes, gently invert previously filled tubes containing anticoagulants. Do not shake as this may cause haemolysis (breaking up the red cells).
20. Apply cotton wool to the puncture site. Remove the needle from the skin. And activate the safety device to retract/sheath the needle. This is to prevent needle stick injury.
21. Apply pressure on the puncture site until any bleeding stops. Cover the puncture site with an Elastoplast or use micropore to hold the cotton wool in position.
22. Discard the needle into a sharps container.
23. Label the samples with the patient's details, this should be carried out in front of the patient. If using an electronic request please use the ICE or Order Management label. If using a manual request card, the patient details must be written on the tube. Blood transfusion samples must **ALWAYS** be labelled manually.

Essential Details

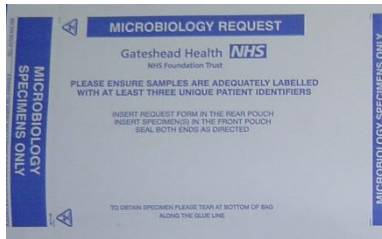
- Patient's full name (or proper coded identifier)
- Date of birth
- Hospital number and/or NHS number
- Location (ward or surgery for return of report)
- Date and time

For Serology requests please also give details of the date of onset of illness and the nature and length of clinical illness.

24. Place the samples into the appropriate sample bag. For manual requests this will be attached to the sample form. For electronic requests use the clear transport bags or the colour coded bags (Please add the electronic request to the bag, together with the samples)



Biochemistry, Haematology, Immunology samples



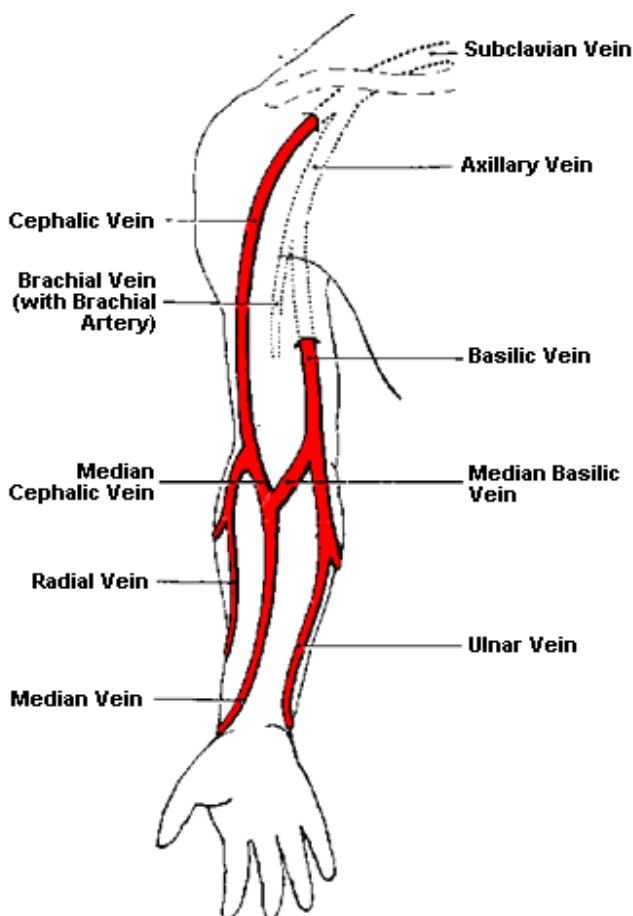
Microbiology samples



Cellular pathology samples

25. Thank the patient. Remove gloves and apron apply alcohol gel or wash hands with soap and water.
26. Samples should be transported to the laboratory without delay. For hospital samples this may be via pneumatic tube or via a porter. For community samples please follow the sample packaging instructions.

Choosing a Vein



Superficial veins of the right upper limb

It is important to choose the least hazardous site for blood collection by skin puncture or venepuncture. The most common sites for venepuncture are in the antecubital area of the arm, where the median cubital, cephalic and basilica veins lie close to the surface of the skin and are most prominent. The median cubital vein is most commonly used; the cephalic vein lies on the outer edge of the arm, and the basilic vein lies on the inside edge. The basilic vein is in close proximity to the median nerve so the other choices are preferable. Palpating this area usually help the Phlebotomist get an idea of the size, angle and depth of the vein.

The dorsal side of the hand or wrist can be used, only if arm veins have been determined to be unsuitable. Hand veins or the veins on the dorsal side of the wrist are preferred over the foot or ankle.

Special Precautions

- Samples from patients with blood borne viruses should be labelled with danger of infection stickers.
- Patients who have had mastectomies often have their lymph nodes removed. Without lymph vessels to remove fluid, swelling occurs on the affected side of the body. This blood should not be drawn from the mastectomy side if possible.
- Whenever a patient is on Intravenous Line (IV) therapy including Blood Transfusion (patients who are receiving blood transfusion should only have a blood sample taken if needed at the time if possible defer to when the transfusion has been completed) The arm with the visible IV line should not be used for venepuncture because the specimen will be diluted with IV fluid. Instead the other arm or another site should be considered.