

## Peripheral Venepuncture

Date	Version
April 2013	1.0
<b>Purpose</b>	
The purpose of this Sop is to ensure that peripheral venepuncture is performed safely and effectively by competent healthcare professionals, thus eliminating risk of contamination and subsequent inaccuracy in results.	
<b>Who should read this document?</b>	
All Clinical Staff attempting Venepuncture	
<b>Key messages</b>	
Venepuncture is an invasive procedure that has potential risk to the patient and the health care professional. It is essential that all staff adhere to this SOP in order to reduce these risks.	
<b>Accountabilities</b>	
<b>Production</b>	Paul Cooper, Lead BMS,
<b>Review and approval</b>	Effective Care Group
<b>Ratification</b>	Paul McArdle, Assistant Medical Director
<b>Dissemination</b>	Paul Cooper, Lead BMS,
<b>Compliance</b>	Paul Cooper, Lead BMS,
<b>Links to other policies and procedures</b>	
<ul style="list-style-type: none"> <li>➤ Hand hygiene policy 2012</li> <li>➤ Policy for aseptic technique 2011</li> <li>➤ Prevention of Contamination incidents 2012</li> <li>➤ Management of Contamination incidents 2012</li> <li>➤ Plymouth Hospitals NHS Trust Pathology Handbook.</li> <li>➤ Plymouth Hospitals NHS Trust Hospital Transfusion Policy Edition 7 2012</li> <li>➤ The Venepuncture Service policy 2011. M0019.</li> <li>➤ PHNT order of draw – see Trust website – Pathology section.</li> <li>➤ ICM Labelling procedure – Appendix 5</li> </ul>	
<b>Version History</b>	
1.0	June 2013
Document created and approved	
<b>Last Approval</b>	
<b>Due for Review</b>	
June 2013	
June 2016	

*The Trust is committed to creating a fully inclusive and accessible service. By making equality and diversity an integral part of the business, it will enable us to enhance the services we deliver and better meet the needs of patients and staff. We will treat people with dignity and respect, promote equality and diversity and eliminate all forms of discrimination, regardless of (but not limited to) age, disability, gender*

*reassignment, race, religion or belief, sex, sexual orientation, marriage/civil partnership and pregnancy/maternity.*

**An electronic version of this document is available on the Trust Documents Network Share Folder (G:\TrustDocuments). Larger text, Braille and Audio versions can be made available upon request.**

Standard Operating Procedures are designed to promote consistency in delivery, to the required quality standards, across the Trust. They should be regarded as a key element of the training provision for staff to help them to deliver their roles and responsibilities.

<b>Section</b>	<b>Description</b>	<b>Page</b>
1	Purpose and Scope	3
1	Definitions	3
1	Key Duties	3
1	Monitoring and Assurance	3
2	Procedure to Follow : General Guidelines	4
2	Procedure to Follow: Improving Venous access	5
2	Procedure to Follow: Taking Blood Cultures	5
2	Procedure to Follow: Procedure for Peripheral Venepuncture	5
2	Procedure to Follow: Troubleshooting Guidelines	7
3	Document Ratification process	7
4	Reference Material	8

### **Appendices**

1	Required Documentation	10
2	Electronic Processes and Records	10
3	Order of Draw and Mixing Guidance	13
4	Elective Venepuncture pathway (Flowchart)	15
5	ICM Labelling procedure	16

## Standard Operating Procedure (SOP) Venepuncture

### 1 Purpose and Scope

#### Introduction

This document identifies staff groups permitted to perform venepuncture, the procedure they must adhere to and useful guidance for occasions when venous access is difficult to obtain.

#### Definitions

Peripheral venepuncture/phlebotomy is the withdrawal of blood from the vein (Dougherty et al 2010). This process is carried out to obtain blood samples for analysis. Venepuncture is also known as Phlebotomy, drawing of blood, taking blood or venesection.

#### Key Duties

Peripheral Venepuncture should only be carried out by staff who have been appropriately trained and assessed.

It is the responsibility of staff performing Peripheral Venepuncture to ensure that patients understand the reason for the procedure and that the procedure involves minimum distress to the patient.

Proper infection control procedures must be adhered to.

Positive Identification of the patient must occur.

The sample must be labelled immediately at the patient's bedside.

#### Monitoring and assurance

##### Staff Groups able to perform venepuncture

- Staff permitted to apply for training are:
  - Registered healthcare professionals
  - Unregistered healthcare professionals if educated to a NVQ level 2 or equivalent, Medical Assistants
  - Phlebotomy staff
- Healthcare Professionals can apply for venepuncture training by contacting the Directorate of Workforce and Organisational Development on 37130
- Staff must only attend training if there is a clinical need for them to have this skill in their clinical area and the skill will be used regularly to maintain user competence.
- Healthcare professionals must complete the Trust's venepuncture training programme and be assessed as competent before attempting the skill unsupervised. Assessment is by Registered Healthcare Professionals, who have been assessed as competent in this skill and have been using the skill regularly. Assessment should be repeated on a 2 yearly basis. Unregistered Healthcare Professionals may assess

staff as long as they have been assessed as competent, have practised the skill recently and have attended the observational assessor's course. For more information please contact 37130.

- The venepuncture suite situated within outpatients on level 06 offers supervised practice, contact 53035 for more details. Staff MUST complete the Trust study day before arranging this.
- Healthcare Professional's appointed from outside the Trust, who regularly performed peripheral venepuncture in their last post, must do the following;
  - Show evidence of previous training and recent practice
  - Read the Plymouth Hospitals NHS Trust venepuncture procedure along with all other relevant policies
  - Be observed by an assessor, nominated by their manager.
  - Complete and sign the venepuncture practical assessment form. A copy of this should be placed on the individual's personnel record.
- Apparent excessive rates of Haemolysis from any particular areas will be picked up by the Blood Sciences Laboratory and fed back to the area for investigation.
- Mis-labelling events will be recorded in DATIX and investigations undertaken by the area the error took place. Reports can be produced from the DATIX system to indicate levels of mis-labelling in the trust and to highlight any specific areas of concern.
- Should monitoring indicate a need for retraining and assessment it is the responsibility of the individual's line manager to arrange this.

**Non-Medical Staff must only take blood from the veins in the arms and hands. If this cannot be done, medical staff must be called. All Trust staff should only have 2 attempts at venepuncture on the patient. If both attempts fail a more experienced practitioner should be sought – see appendix 1**

## 2 Procedure to Follow

### General Guidelines

- The patient must be positively identified before obtaining a blood sample.
- Pre labelling of samples must not occur under any circumstances (PHT Hospital Transfusion Policy 2010).
- All equipment must be within its expiry date.
- Patients should be informed about the procedure and consent gained.
- If patients are needle phobic, a local anaesthetic cream may be used under direction of medical practitioner. This must be prescribed.
- The BD Eclipse safety needle and Vacutainer system, or Safety Lok Butterfly methods MUST be used to take bloods. Syringe and needle method should only be used in very exceptional circumstances. Where syringe and needle methods are used a Transfer device should be utilised to minimise Haemolysis and personal risk whilst transferring the blood to the vacutainer.
- Median Cubital veins should be used wherever possible. Other veins, including metacarpal veins can be used providing a suitable sized butterfly is used. Vacutainers should only be used in large veins.
- Gloves should always be worn (ICNA 2003)
- Skin does not need cleaning prior to venepuncture unless;
  1. Blood cultures are being taken
  2. The patient is socially unclean
  3. The patient is immuno-compromised.

- Blood should be taken from the non-cannulated side of the patient. If this is not possible the infusion should be stopped for at least 20 minutes and documented. If the infusion cannot be turned off then the line should be stopped, flushed, and the sample taken below (distal) to the cannula. This should only be undertaken by someone competent in IV drug administration and documented accordingly.
- Blood should be taken as per PHNT Order of Draw.
- Once the needle is removed from the patient, a minimum of 2 minutes direct pressure should be placed onto the affected area. Do not bend the patients arm. If the patient is receiving treatment which will cause blood to take longer to clot e.g. anticoagulants, steroids, then at least 5-10 minutes of pressure will be required.
- An appropriate dressing should be applied to the venepuncture site after the procedure. The patient should be advised to keep the dressing on for a minimum of 30 minutes.
- ICM requests / forms and blood bottles should be completed with patient's details whilst by the patient's bedside, using the patient's ID band. They should never be taken away from the bedside to be labelled (PHT Hospital Transfusion policy 2010)
- When handwritten, the patient's details must be legibly written on to the sample in the appropriate area and should include: Patients Forename, Patients Surname, Patients Hospital number **or** NHS number, Patients Date of Birth, Date and time of sample, Patients location (ward).
- All samples must be signed by the person performing the venepuncture, without obscuring other details or the barcode (in case of icm specimens)

### **Improving Venous Access**

A clean, soft, quick release tourniquet can be used. This should be placed 8-10cm above the insertion point (Weinstein 2001). Rubber gloves should not be used as these cannot be released quickly and can cause tissue damage. Tourniquets should be removed after 3 minutes whilst finding the vein, but must be removed within 1 minute of blood sampling to prevent haemolysis. Tourniquets should be cleaned after each use with a detergent wipe, and not used if soiled.

The following techniques can be used to try to improve venous access:

- Lowering the limb below heart level
- Applying a warm compress
- Opening and closing of the fist
- Massaging the area in one direction (tapping is not recommended as this can cause pain and bruising)

### **Taking Blood Cultures**

Please refer to the following for guidance in this procedure:

- Plymouth Hospitals NHS Trust Policy Guidelines for the Management of Peripheral Intravenous Devices. 2011.
- Plymouth Hospitals NHS Trust Pathology Handbook.
- 

### **Procedure for peripheral venepuncture**

#### **Equipment**

- Clinically clean tray containing prepared equipment.
- BD Eclipse safety needle or Safety Lok Winged Infusion Set.
- Needle holder
- Appropriate vacuumed specimen tubes

TRW.VAS.SOP.763.1 Peripheral Venepuncture

- Order of Draw Card.
  - Sterile dressing or swab for puncture site.
  - Clean Tourniquet.
  - Gloves and aprons as required for standard precaution measures.
  - Appropriate sharps bin.
  - Specimen request form or appropriate Order Communications equipment (iCm laptop and printer)
1. Positively identify the patient. Positive ID entails asking patient to state their full name and DOB and checking against wristband. (note: wristbands may not be available in OPD Phlebotomy suite and in the Emergency department)
  2. Explain the procedure about to be undertaken.
  3. Obtain informed consent.
  4. Allow the patient time to ask questions and discuss previous problems with blood taking.
  5. Assemble the equipment necessary
  6. Wash hands using soap and water and dry thoroughly
  7. Operator should cover any visibly broken areas of own skin with a waterproof dressing. Gloves and other protective measures should be worn as appropriate
  8. Check all packaging before opening and prepare the equipment on a clean receptacle.
  9. Proceed to the patient and check identity, using their wristband.
  10. Ensure lighting, ventilation, privacy and positioning are adequate.
  11. Choose which arm to use, being careful to avoid the same side where an infusion is present or if patient has had a mastectomy /lymph nodes removed Support the chosen limb.
  12. Apply the tourniquet (if required) 8-10cm from the puncture site to help with vein selection. Ensure arterial flow is not obstructed.
  13. If there is difficulty feeling a suitable vein you may do the following;
    - Ask the patient to clench and unclench fist.
    - Gently stroke the vein.
    - Apply warmth to the area.
    - Apply a local anaesthetic cream (medical prescription required).
  14. Select the vein of choice and then remove the tourniquet again until ready to proceed when it should then be re-applied again
  15. Select a suitable device, based on vein size, planned treatment etc.
  16. Use hand rub to decontaminate hands
  17. Put on gloves and other protective measures.
  18. Inspect the device carefully.
  19. Anchor the vein by applying manual traction on the skin a few centimetres below the proposed insertion site.
  20. Insert the BD Eclipse safety needle smoothly at an angle of approximately 15 degrees, ensuring bevel of needle is pointing up.
  21. Push Vacutainer bottles into the needle holder using firm but gentle pressure, ensuring the needle remains still. Bottles to be drawn in the order on the 'Order of Draw' card
  22. Needle and syringe only to used in exceptional circumstances of patients with very poor venous access.
  23. When blood is collected in a syringe using a butterfly (or in the very exceptional circumstance that a syringe and needle has been used), a blood transfer device should be used to transfer blood into specimen bottles. If this is not available transfer the blood by removing the specimen bottles top and then replacing top carefully. Mix contents of blood bottles following inversion guidelines on order of draw card.
  24. Release the tourniquet when blood is seen entering the first vacutainer tubes i.e. within 1 minute.
  25. Ensure all bottles are filled to the fill mark.
  26. Prepare swab, remove the needle fully and then apply pressure

27. Dispose of the needle safely into the sharps box.
28. Apply digital pressure directly over the puncture site until bleeding has stopped about two minutes, possibly longer with clotting disorders.
29. The patient should be discouraged from bending the arm if a vein in the antecubital fossa is used.
30. Label the bottles with the relevant patient details (see general guidelines). This must be done by the person taking the bloods, at the patient's bedside. Pre labelling of samples is not acceptable practice. Partial pre-labelling (Immediately prior to collection) should only be undertaken in exceptional circumstances for samples such as split bilirubin where the sample has to be kept in the dark and sent immediately to the laboratory.
31. Inspect the puncture site and apply dressing.
32. Discard waste into appropriate containers.
33. Remove gloves and discard in appropriate clinical waste bag and wash hands thoroughly
34. Ensure the patient is comfortable.
35. Follow hospital procedure for collection and transportation of specimens to the laboratory
36. Document actions in patient records.

### **Trouble-shooting guide for Venepuncture**

***Patient has no identity band in situ:*** In a ward situation do not take blood from this patient until identity is confirmed and an ID band has been attached to the patient. In an OPD situation – if the patient is unable to competently confirm their name and date of birth, then do not take blood from this patient until identity is confirmed by other means – this may for instance be via a carer or by reference to appropriate documentation.

***Patient is needle phobic:*** discuss their feelings and if appropriate arrange for a topical, local anaesthetic to be prescribed and administered to the patient. Use distraction therapy and lay the patient down before commencing procedure.

#### ***Needle penetrates artery instead of vein (red pulsing blood entering blood bottle):***

Remove bottle, remove tourniquet and carefully remove needle being aware that blood may splash at you. At least 10 minutes of direct pressure should be placed onto the area. Explain to patient and document in patient's notes and a clinical incident form. Reattempt procedure with new equipment. If you feel confident to do so, otherwise gain assistance from a more experienced practitioner.

***Patient complains of altered sensation in hand/fingers:*** this may indicate that the needle has touched/penetrated a nerve. Remove bottle, tourniquet and needle immediately, placing direct pressure for 2 minutes. Document in patients notes and complete a clinical incident form. Reattempt procedure with new equipment.

***The needle enters the skin and stops:*** The needle has probably touched a valve. Remove tourniquet and needle. Reattempt procedure with new equipment.

***No blood seen in bottle once needle is in patient:*** This may mean that needle is not in the vein or that the bottle has lost vacuum. If subsequent bottle still shows no blood, then withdraw the needle slightly so that it does not come out of skin. If blood still not present, feel for the vein as it may have moved, if so then gently insert needle into vein. If still no blood, release tourniquet and remove needle. Reattempt procedure with new equipment.

The design and process of review and revision of this procedural document will comply with The Development and Management of Trust Wide Documents.

The review period for this document is set as default of three years from the date it was last ratified, or earlier if developments within or external to the Trust indicate the need for a significant revision to the procedures described.

This document will be approved by the Effective Care Group and ratified by the Chair of the Effective Care Group.

Non-significant amendments to this document may be made, under delegated authority from the Chair of the Effective Care Group by the nominated author. These must be ratified by the Chair of the Effective Care Group and should be reported, retrospectively, to the Effective Care Group

Significant reviews and revisions to this document will include a consultation with named groups, or grades across the Trust. For non-significant amendments, informal consultation will be restricted to named groups, or grades who are directly affected by the proposed changes

### *Dissemination and Implementation*

Following approval and ratification, this procedural document will be published in the Trust's formal documents library and all staff will be notified through the Trust's normal notification process, currently the 'Vital Signs' electronic newsletter.

Document control arrangements will be in accordance with The Development and Management of Trust Wide Documents.

The document author(s) will be responsible for agreeing the training requirements associated with the newly ratified document with the Chair of the Effective Care Group and for working with the Trust's training function, if required, to arrange for the required training to be delivered.

## **4 Reference Material**

### References

Dougherty L, Bravery K, Gabriel J, Kayley J, Malster M, Scales K, Wilkinson R (2010) **Standards for Infusion Therapy**. Royal College of Nursing.

Infection Control Nurses Association (2003) **Reducing sharps injury – prevention and risk management, Infection Control Nurse Association**. February. (W)

Perruca R (2001) **'Obtaining vascular access'. In Intravenous therapy: clinical principles and practices**. Philadelphia: WB Saunders. (W)

Weinstein SM (2001) **Plumer's principles and practice of infusion therapy**. 7<sup>th</sup> Ed. Philadelphia: Lippincott Williams and Wilkins. (W)

### Bibliography

Arrowsmith J & Campbell C 2000 A comparison of local anaesthetics for venepuncture. Arch. Dis. Child 82 pp309-310

Duff AJA 2003 Incorporating psychological approaches into routine paediatric venepuncture. Arch. Dis. Child 88 pp931-937



Kelsey J., McEwing G. et al (2007) *Clinical Skills in Child Health Practice*. Churchill Livingstone

Lavery I & Ingram P 2005 Venepuncture: best practice. *Nursing Standard*.19(49) pp 55-66

May D& Brewer S 2001 Sharps injury: Prevention and Management. *Nursing Standard*. 15(32) pp45-54

Rourke C, Bates C & Read RC 2001 Poor infection control practice in venepuncture and use of tourniquets. *Journal of Hospital Infection*. 49 (59-61) pp 59-61

Strachan-Bennett S. 2004 Needles infect record number of staff. *Nursing Times* 100(38)

Willcock J et al 2004 Peripheral venepuncture in infants and children 18(27) pp 43-50

## Required documentation

Requests may be placed by using either paper request forms or by using the trust Order Communications system – ICM.

Blood Bank request form:



Blood Transfusion  
Request Form...

Combined Laboratory request form:



NEW Hospital  
Combined Pathology.

Microbiology request form:



[Untitled].pdf (107  
KB)

## Electronic processes and records

### iCM eLearning Link:

<http://www.training.plymouth.nhs.uk/captivatetraining/icm/iCM%20-%20Orders%20and%20Results.htm>

The user can also access the above link from Plymouth Healthnet selecting 'iCM eLearning – Full Access Training' under popular links.

Alternatively, staff can telephone the Clinical Systems Training Team on 37286 for an individual or group training session.

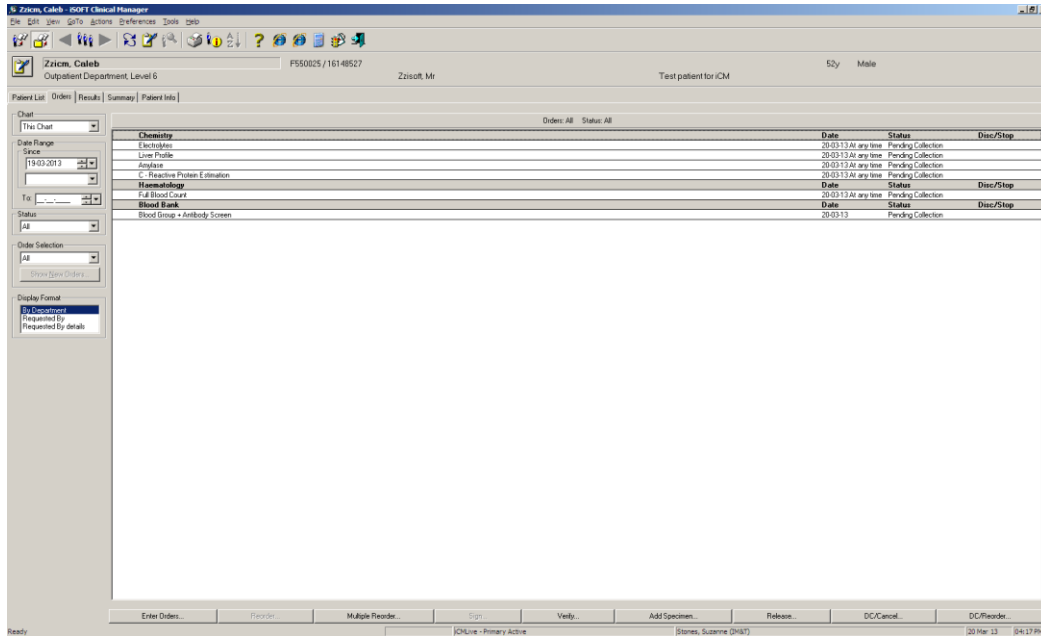
For the iCM Labelling Procedure, please see Appendix 5.

Searching for a patient in iCM.

You **MUST** ensure that you have selected the correct patient record in iCM before collecting a specimen.

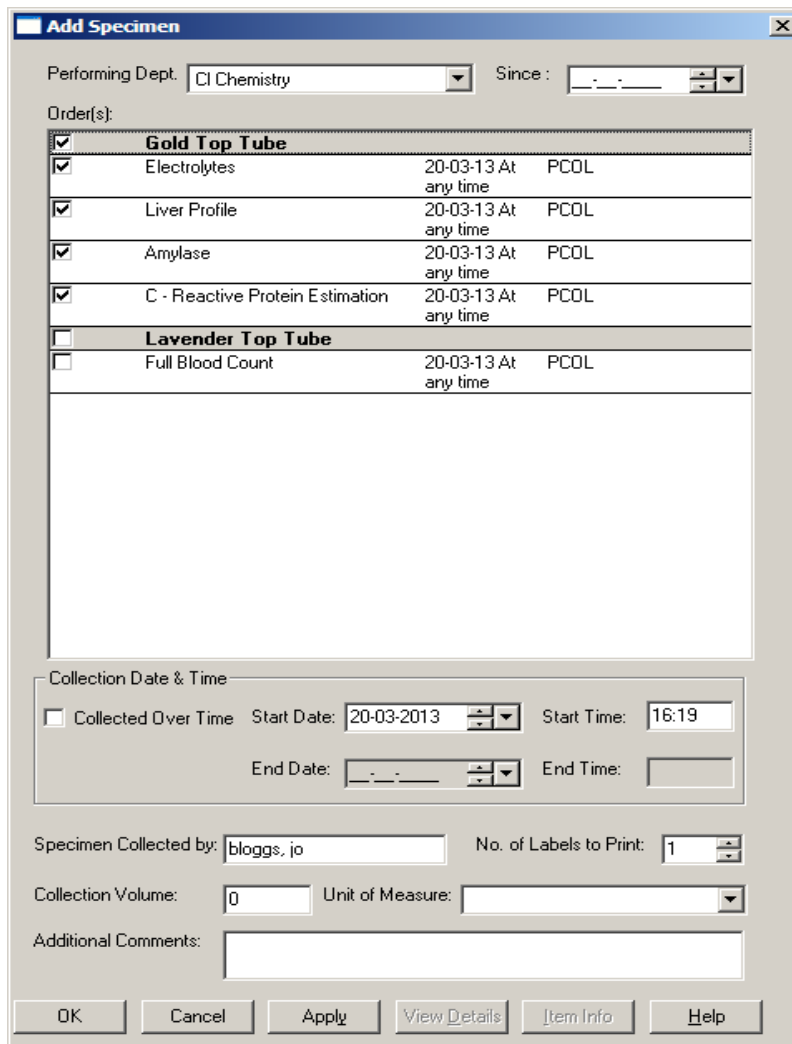
Name	Gender	Birth Date	Patient ID	Dece..
Zzicm, Caleb	Male	02-01-1961	F550025	
Zzicm, Caleba	Male	02-01-1961	F550027	

Review the orders for collection by selecting the 'Orders' Tab:



Select the 'Add Specimen' option.

Select the 'Performing Department' and a list of tests will be grouped by specimen tube type:



TRW.VAS.SOP.763.1 Peripheral Venepuncture

Select the relevant tests.

A printed label will now be produced:

F550025 Zziom , Caleb  
DoB: 02/01/1981      Outpatient  
Mr Zziom      Coll: 20/03/13 16:19



Gold Top Tube  
Signature :


**Contingency:** Utilise a Paper request form – BB, Chemistry & Microbiology ones and manually complete the container label.

Order of Draw and Mixing guidance:

# BD Vacutainer® Systems









BD Diagnostics - Preanalytical Systems

## Tube Guide including Order of Draw



**Directorate of Pathology, Derriford Hospital, Plymouth - August 2011**

*Blood samples should be taken in the following order:*

Colour Code	Tube Type	Determinations	Special Instructions
	Blood Culture	Aerobic followed by anaerobic - if insufficient blood for both culture bottles, use aerobic bottle only	
 Light Blue	Buffered Sodium Citrate 3.2%	INR, Clotting Screen, D-dimer DIC Screen, Fibrinogen	Ensure correct fill volume. Mix Gently. Inversions: 3-4 times.
 Black	Sodium Citrate E.S.R.	ESR Point of Care Testing only Not used in Derriford Laboratories	Mix Gently Inversions: 8-10 times.
 Gold	S.S.T.™II	All routine Biochemistry including CRP, Autoantibodies, B12, Ferritin, Folate, Complement, Immunoglobulins, Allergies, Antibiotic Assays, Serology for Bacteria and Viruses  To be used for Cryoglobulins. Refer to Laboratory before taking	Inversions: 5-6 times.
 Green	Lithium Heparin	Cytogenetics (Chromosome studies) Carboxyhaemoglobin, Methaemalbumin	Mix Gently Inversions: 8-10 times.
 Lavender	E.D.T.A.	FBC, PV, Retics, Film, IM Screen, Malarial Parasites, Haemoglobinopathies, HbA1c, Ammonia, Cyclosporin, Tacrolimus, Lead, Porphyrins, PCR testing for Bacteria and Viruses, Tissue Typing, PCR for Haematology	Mix Gently Inversions: 8-10 times.
 Pink	E.D.T.A	Group, Cross Match, Direct Coombs Test, Antenatal Grouping, Foetal Leak	Mix Gently. Inversions: 8-10 times.
 Grey	Fluoride Oxalate	Glucose, Galactose, Xylose, Alcohol	Mix Gently. Inversions: 8-10 times.

Further information on sample requirements can be obtained by reference to the Pathology Handbook or by contacting the Laboratory:

Derriford Combined Laboratory: **01752 792401**  
Microbiology Laboratory: **01752 792372**

**RECOMMENDED ORDER OF DRAW:** Please contact the Laboratory to obtain further copies of this guide  
 \*Clinical and Laboratory Standards Institute (Formerly NCCLS) Guidelines H3-A6, 6th Edition  
 BD, BD Logo, Vacutainer and Hemogard are all trademarks of Becton, Dickinson & Company.  
 BD Diagnostics - Preanalytical Systems, Tel: 01865 781603

TRW.VAS.SOP.763.1 Peripheral Venepuncture

# BD Vacutainer™ Systems

BD Diagnostics - Preanalytical Systems



## Mixing Guidelines and Order of Draw

All BD Vacutainer™ tubes require immediate mixing following collection

Colour Code	Tube Type	Inversions
 Light Blue	Sodium Citrate	3-4 Times
 Black	Sodium Citrate ESR	8-10 Times
 Red	Serum/Plastic	5-6 Times
 Gold	S.S.T.™ II	5-6 Times
 Green	Lithium Heparin & PST™ II	8-10 Times
 Lavender	E.D.T.A.	8-10 Times
 Pink	Cross Match	8-10 Times
 Grey	Fluoride Oxalate	8-10 Times
 Royal Blue	Trace Element	8-10 Times

Insufficient mixing can result in inaccurate test results and the need to re-draw

**Elective Venepuncture Pathway**

