

RECOMMENDED ORDER OF DRAW

POLICY STATEMENT

All PathWest Laboratory Medicine WA (LMWA) specimen collectors will collect blood sample tubes in a recommended order of draw to avoid cross contamination of additives between tubes.

INTENT

To provide clarity and understanding to PathWest collection staff about the correct order of draw to be used when collecting blood samples while avoiding possible test error due to cross contamination of the sample by tube additives.

SCOPE

Appendix A of the policy applies to all PathWest staff performing phlebotomy collections and can be provided to clinical hospital ward staff and external clients who request the PathWest policy be used in their clinical setting. For ward staff and external clients the Appendix A can be found at:

<http://pathwest.health.wa.gov.au/HealthProfessionals/Pages/Collection-Guides.aspx>

RESPONSIBILITIES

Employee

- Ensure they are familiar with the Order of Draw policy and how to access electronic or hardcopy information prior to performing specimen collection.
- To collect blood samples in the correct order prescribed by the Recommended Order of Draw policy to avoid cross contamination of additives between tubes.
- Read, sign and date document updates to acknowledge understanding of changes or amendments to the Order of Draw policy and forward acknowledgement to manager.

Pathology Specimen Collection Coordinator/Medical Scientist in Charge

- Ensure all staff have electronic or hardcopy access to the policy.
- Ensure all staff receive training and comply with the PathWest LMWA Recommended Order of Draw policy when collecting blood samples.
- Ensure the recommended order of draw is included in the staff annual competency assessment and records.
- Ensure all superseded documentation is replaced with the current version and staff are notified of any changes.

Document Author











- Undertake regular review, update documentation and maintain records of the notification date and the list of sites to which the documents are distributed.








Marketing

- Notify and inform external clients of changes to the policy including the distribution of updated documentation pertaining to the PathWest Recommended Order of Draw.
- Maintain register of external clients, including records for notification of updates i.e. date, reason for contact and name of PathWest staff member responsible for notifying clients.

APPENDIX A

PathWest Recommended Order of Draw

Hemogard™ Closure & Tube	TESTS & INFORMATION	SPECIAL INSTRUCTIONS
<p style="text-align: center;">BLDCULT</p>  <p style="text-align: center;">Blood Cultures</p>	<p>Blood Culture Investigation of a systemic bacterial or fungal infection</p>	<p>Must be collected using strict aseptic technique. Always collect using a winged infusion/butterfly First collect aerobic (grey/blue top) container followed by the anaerobic (purple/pink top) Pink top is Paediatric Recommend at least 2 sets from a single site for routine collections, or 3 sets from 3 sites for ?Endocarditis</p>
<p style="text-align: center;">BLUE</p>  <p style="text-align: center;">Sodium Citrate (3.2%)</p>	<p>Coagulation Testing e.g. INR, APTT, Coagulation profile, D Dimer, Protein C/S, ATIII, Prothrombin Time, NB. Please refer to your local testing laboratory for D-Dimer collection requirements.</p>	<p>Must be filled to the clear fill line marked on the tube. Send to the Lab within 4 hours of collection otherwise separate the centrifuged plasma within 4 hours of collection and transport chilled.</p>
<p style="text-align: center;">BLACK</p>  <p style="text-align: center;">ESR- Sodium Citrate</p>	<p>Erythrocyte Sedimentation Rate (ESR)</p>	<p>Must fill tube to midway between marked lines N.B can be collected at the end of the draw as tests performed on this tube not compromised by other additives</p>
<p style="text-align: center;">ACD</p>  <p style="text-align: center;">Acid Citrate Dextrose</p>	<p>HLA Studies</p>	<p>Store at room temperature.</p>
<p style="text-align: center;">RED</p>  <p style="text-align: center;">Serum [No Gel]</p>	<p>Therapeutic Drug Levels, antibiotic assays and drugs of abuse N.B - a red top non-gel serum tube is preferred when collecting outside the metropolitan area. For collections in the metropolitan area please use a lithium heparin (dark green top – see below) [Use EDTA for Anti-Rejection Drugs] Lithium assays can only be performed on a serum (red top) tube</p>	<p>Record Time & Date of Last Dose, Dosage and Collection Date & Time on the request form</p>
<p style="text-align: center;">GOLD</p>  <p style="text-align: center;">SST / Serum [with Gel]</p>	<p>All Referred Biochemistry [i.e.tests that take >1day for a result] All Viral Serology Immunology All Hormones</p>	
<p style="text-align: center;">DARK GREEN (DKGNLITH)</p>  <p style="text-align: center;">Lithium Heparin [No Gel]</p>	<p>Troponin I & Creatinine [A&E STAT ONLY] Therapeutic drug levels, antibiotic assays and drugs of abuse N.B - A dark green top non-gel lithium heparin tube is preferred for samples collected within the metropolitan area. NB. Please refer to your local testing laboratory for D-Dimer collection requirements. Do NOT collect gel tubes for D-dimer assays Do NOT collect Lithium Heparin (Green top) tubes for Lithium assays</p>	<p>DO NOT SPIN DO NOT REFRIGERATE</p>
<p style="text-align: center;">GREEN</p>  <p style="text-align: center;">PST / Lithium Heparin [with Gel]</p>	<p>Locally Performed Biochemistry [e.g. UEC, LFT, Lipids (Chol/Trig), HDL, CK, Lipase, CRP, Ca²⁺, Phos, Mg²⁺, LDH, NT proBNP, Cardiac Enzymes, Gamma GT, Bicarbonate, Uric Acid, Protein, Glucose (See N.B.)</p>	<p>Tests must be performed within 4 hours of collection for valid K⁺, or centrifuge tubes and store as per local guidelines." N.B. If delivery will take more than 2hrs before sample can be centrifuged GREY must be collected for glucose.</p>
<p style="text-align: center;">GREEN NA</p>  <p style="text-align: center;">Sodium Heparin [No Gel]</p>	<p>Some chromosomal studies [e.g. Karyotype, FISH]</p>	
<p style="text-align: center;">QUANT</p>  <p style="text-align: center;">4 Qiagen QuantiFERON TB In Tube vials</p>	<p>Interferon Gamma Testing for TB. First-line Interferon-gamma release assay against tuberculosis-specific antigens, and used for the diagnosis of latent tuberculosis</p>	<p>Order of collection for Quantiferon tubes: Grey, Green, Yellow, Purple Must be filled to the fill line marked on the tube. Always collect using a winged infusion/butterfly</p>

 <p>QUCMV 3 Qiagen QuantiFERON CMV In Tube vials</p>	<p>Interferon Gamma Testing for CMV. First-line Interferon-gamma release assay against CMV antigens, and used for the monitoring of CMV</p>	<p>Order of collection for Quantiferon CMV tubes: Grey, Blue Purple Must be filled to the fill line marked on the tube. Always collect using a winged infusion/butterfly</p>
<p>LAVENDER (and LAV9)</p>  <p>EDTA (K2EDTA)</p>	<p>Blood Count: FBC, FBP, CBC, WCC, Hb, Plt Glycated Hb: HbA_{1c} Malaria Anti-Rejection Drugs [e.g. Tacrolimus, Sirolimus]</p>	<p>Do not separate</p>
<p>PINK</p>  <p>EDTA (K2EDTA)</p>	<p>Cross Matching and all related blood bank tests [e.g. Group & Hold, antibody screening, blood group]</p>	<p>REMINDER: <u>Minimum</u> labelling is FULL NAME & DOB, TIME & DATE of COLLECTION, and COLLECTORS SIGNATURE/ INITIALS on both form & tube. All these details on the tube and form must match. A formal declaration printed on the request form must be signed by the collector. Samples that do not meet these requirements will be rejected by TM.</p>
<p>PEARL</p>  <p>PPT/K2EDTA [with Gel]</p>	<p>Parathyroid Hormone (PTH) Quantitative PCR</p> <p>If an EDTA Gel tube is not available, please contact your local testing laboratory for further advice.</p>	<p>N.B. Do not confuse with PTH related protein (PTHrp) which requires a special tube. Please contact your local laboratory.</p>
<p>NAVY</p>  <p>EDTA Trace Metal</p>	<p>Blood Lead & Other Heavy Metals</p>	<p>Always collect using a winged infusion/butterfly if collecting for Chromium, Zinc and Cobalt. Collect using a Winged Infusion Set (Butterfly Needle) and prepare a second (replacement) luer adapter. The first luer adapter must be changed immediately prior to collecting the Trace Metal tube to prevent contamination. Subsequent tubes can then continue to be collected as per the recommended order of draw.</p>
<p>GREY</p>  <p>Fluoride Oxalate</p>	<p>Glucose: BSL, Sugar, Blood Sugar</p>	<p>N.B. If delivery will take more than 2hrs before sample can be centrifuged GREY must be collected.</p>
 <p>Blood Gas Syringe</p>	<p>Venous or Arterial Blood Gases For venous /arterial blood gas testing.</p>	<p>Always collect using a winged infusion/butterfly Collect separately removing the luer adaptor from the winged infusion/butterfly and directly connecting the BGS to avoid contamination. Transport at room temperature and test within 30 minutes of collection.</p>
<p>SPECIMENS MUST BE LABELLED WITH PATIENTS SURNAME, FIRST NAME AND DATE OF BIRTH OR UMRN FOR ANY OTHER TESTS PLEASE CONTACT THE LABORATORY</p>		

Notes

- When collecting blood using a syringe and a transfer device is used; the above order of draw is to be followed.
- When collecting blood via a capillary collection method (heel/finger prick) or when using a syringe and siphoning the bloods directly into the tubes the Order of Draw (in order) is: Blood Gas Syringe, EDTA tubes, Sodium Citrate tubes, all other anticoagulant tubes, Serum/Clot tubes.
- When performing Paediatric Collections please refer to Appendix B for Blood Collection Volume Guidelines.
- Haemolysis Warning - Never inject blood into the collection tube through a needle from a syringe.
- Always mix the blood with anticoagulants gently, but thoroughly inverting the tube 6-8 times.=
- Do not shake tubes (exception is Quantiferon, which are to be inverted vigorously 10 times)
- Do not top up or transfer blood from one tube to another as this will result in additive transfer and the samples to be rejected due to contamination.
- This is a guide only. For all Point of Care Tests, or if you have any queries or require further information, please refer to the PathWest Test Directory or contact your local laboratory prior to sample collection.
- Use of a winged collection set/ butterfly requires the collection of a discard tube if the first tube to be collected is a blue top Sodium Citrate tube or black top ESR tube. This discard tube will prime the tubing of the collection set and ensure that the correct anticoagulant/blood ratio is maintained. The discard tube should be a non-additive or light blue coloured tube and need not be filled.

APPENDIX B
Blood Collection Volume Guide for Paediatric Blood Collection

Weight (kg)	Max. Draw (mL) per collection episode
1	2.4
2	4.8
3	7.2
4	9.6
5	12
6	14.4
7	16.8
8	19.2
9	21.6
10	24
11-15	27.3
16-20	37.8
21-25	48.3
26-30	58.8

Reference: Royal Children's Hospital Melbourne, December 2018

Notes

1. Please see Notes section in **Appendix A** for Order of Draw guidelines for **capillary collection methods** (heel/finger prick) collections for paediatrics.
2. When performing paediatric collections, if after consultation with the Test Directory the required blood volume **exceeds** the guidelines stipulated above for the weight of the child; please contact the testing laboratory to obtain tube minimisation advice.

NOTE: This document is uncontrolled after printing and may be subject to change.