



World Anti-Doping Program

GUIDELINES FOR BLOOD SAMPLE COLLECTION

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Appendix 1: On-site screening of Blood Samples for Hematological Parameters

1. Objective

This guideline expands upon the International Standard for Testing and details the recommended process for the collection of blood for doping control purposes in accordance with Article 2.1 of the *Code* (Presence), both in and out-of-competition. The guideline therefore includes information on preparation, sample collection and post-test processing and administration to collect and prepare samples for the analysis of prohibited substances and methods (eg detection of Blood Transfusion, hGH and HBOCs).

NOTE: Longitudinal hematological profiling (“the passport”) may be used for anti-doping purposes in accordance with Article 2.2 of the *Code* (Use). Mandatory technical documents to supplement both the IST and ISL will soon be made available to Anti-Doping Organizations who wish to employ the indirect detection (passport) methodology.

With the exception of those mandatory areas which are part of the World Anti-Doping Program, the processes outlined in this document are not mandatory, but are aimed at assisting *Anti-Doping Organizations* in the development of systems and protocols for Blood Sample collection. The method of sample collection may vary from these recommendations in some circumstances; however, minimum standards should apply to ensure that the integrity of the sample is maintained.

When collecting blood for doping control purposes, the protection of the *Athlete* and *Sample Collection Personnel* is paramount. The process must be carried out by experienced professionals who possess qualifications in phlebotomy recognized by the relevant public authorities, and the highest standards of hygiene and safety must be maintained at all times.

As with all Guidelines under the World Anti-Doping Program, these documents are subject to on-going review and reassessment. WADA encourages feedback on the content of the Guidelines, and recommends that stakeholders always consult the WADA website for the latest version. Please direct any feedback to doping.control@wada-ama.org

2. Scope

This guideline begins with the arrival of *Sample Collection Personnel* at the Blood Collection Facility, and ends with the hand-over of the Blood Sample(s) to the courier or the WADA accredited or approved laboratory.

3. Responsibility

3.1 *Doping Control Officer (DCO)*

- One lead/senior DCO shall take responsibility for sample collection services

A DCO may also perform the duties of a Blood Collection Officer, if qualified to do so.

- Organize and brief *Sample Collection Personnel*.
- Ensure that *Chaperones* are trained in carrying out relevant activities.
- Liaise with sport representatives, if relevant.
- Organize equipment, including all relevant documentation.
- Assess and organize the facilities.
- Arrange or perform notification and escorting of *Athletes*.
- Ensure that the *Athlete's* rights and responsibilities are explained.
- Explain, or arrange explanation of, the process for Blood Sample collection to *Athletes* and Athlete Representatives, as necessary.
- Collect and/or oversee the collection of the sample.
- Oversee the post-collection process.
- Co-ordinate collection of accompanying urine sample, if required.
- Complete, or arrange completion of, and verify the relevant documentation.
- Verify the chain of custody.
- Organize courier services, if necessary, or on-site screening of blood.

3.2 *Blood Collection Official (BCO)*

- Possess qualifications in phlebotomy recognized by the relevant public authorities, have experience in sample collection, and be approved by the authorized collection agency to conduct the blood collection procedure.
- Answer relevant questions from *Athletes* about the procedure.
- Prepare the *Athlete*, collect a Blood Sample and advise the *Athlete* on aftercare procedures.
- Dispose of the blood collection equipment in an appropriate manner.
- Carry out first aid on the *Athlete* if required.
- Verify the collection procedure and sign the relevant documentation.

3.3 *Chaperone*

- Notify the *Athlete* in person as instructed by the DCO.
- Escort the *Athlete* from notification until arrival at the Blood Collection Facility

NOTE: A *Chaperone* may have additional duties for urine sample collection – the duties above relates to the collection of blood only.

3.4 *Athlete*

- Request the presence of an Athlete Representative, if desired.
- Report for doping control as soon as possible, and within the specified time frame.
- Be escorted from notification to sample provision.
- Be responsible for any food or beverage consumed prior to sample provision.
- Be familiar with the sample collection process.
- Be responsible at all times for his/her sample (s) from provision to sealing.
- Observe the procedure and ensure there are no irregularities.
- Declare any blood transfusions on the doping control documentation.

- Provide a TUE certificate, if applicable.
- Make comments relating to the sample collection process on the doping control documentation, if applicable.
- Sign documentation as requested by the DCO.

3.5 Athlete Representative (presence optional, at *Athlete's* request)

- Accompany the *Athlete* during notification.
- Accompany the *Athlete* to the Blood Collection Facility.
- Be present during blood collection procedures and assist in the selection of equipment and the sealing process where asked to do so by the *Athlete*.
- Assist the *Athlete* in the completion of paperwork where asked to do so by the *Athlete*.
- Be familiar with the sample collection process.
- Observe the procedure and ensure there are no irregularities.
- Sign documentation as requested by the DCO.

4. Definitions

4.1 Code Definitions

'*Anti-Doping Organization*' means a Signatory (of the World Anti-Doping Code) that is responsible for adopting rules, for initiating, implementing or enforcing any part of the doping control process. This includes, for example, the International Olympic Committee, the International Paralympic Committee, or other major event organizations that conduct testing at their events, WADA, International Federations, and National Anti-Doping Organizations.

'*Athlete*' means for purposes of doping control, any person who participates in sport at the international level (as defined by each International Federation), or national level (as defined by each National Anti-Doping Organization) and any additional person who participates in sport at the lower level if designated by the person's National Anti-Doping Organization. For purposes of anti-doping information and education, any person who participates in sport under the authority of any signatory, government, or other sports organization accepting the Code.

4.2 IST and/or Blood Collection Guideline Definitions

'*Athlete Representative*' means a person designated by the *Athlete* to assist with the verification of the sample collection procedure (not including the passing of the urine sample). This person may be a member of the *Athlete's* support personnel, such as a coach or team doctor, a family member, or other.

'Blood Collection Facility' means the place where the Blood Sample is collected. This may differ from the doping control station where urine samples are collected, or may be a separate, dedicated area of the doping control station.

'Blood Collection Procedure' means the procedure for taking a Blood Sample from an *Athlete*, from the *Athlete's* arrival at the Blood Collection Facility to the *Athlete's* departure from the Blood Collection Facility.

'Butterfly Needle' is a small needle with two plastic wings attached which are squeezed together to form a tab used to manipulate the needle. A long 6-12" plastic tubing is attached to offer better manipulation.

'Blood Collection Official' means an official who is qualified to and has been authorized by the ADO to collect a Blood Sample from an *Athlete*.

'Blood Sample' means an aliquot of whole blood, plasma or serum appropriately collected to perform one or more laboratory tests.

'Chaperone' means an official who is trained and authorized by the ADO to carry out specific duties including notification of the *Athlete* selected for sample collection, accompanying and observing the *Athlete* until arrival at the doping control station, (or Blood Collection Facility) and/or witnessing and verifying the provision of the sample where the training qualifies him/her to do so.

'Doping Control Officer' means an official who has been trained and authorized by the ADO with delegated responsibility for the on-site management of a sample collection session.

'Laboratory' means an accredited laboratory applying test methods and processes to provide evidentiary data for the detection and, if applicable, quantification of a Threshold Substance on the *Prohibited List* in urine and other biological *Samples*.

'Sample Collection Personnel' is a collective term for qualified officials authorized by the ADO who may carry out or assist with duties during the sample collection session.

'Venipuncture' means the process of collecting a sample of blood from an *Athlete's* vein.

5. Protocol for the Blood Sample Collection Session

Procedures involving blood shall be consistent with relevant principles of internationally recognized standard precautions in health care settings.

The protocol for the Blood Sample collection session is divided into the following steps.

5.1 *Brief personnel on roles and responsibilities*

5.1.1. The Lead DCO shall brief the Sample Collection Personnel on their roles and responsibilities prior to or upon arrival at the Blood Collection Facility. This will include *Athlete* notification, escorting, Blood Sample collection, and related urine sample collection if applicable.

5.2 *Assess the facilities*

5.2.1 The Blood Collection Facility shall ideally meet the following criteria:

- Maintain *Athlete* privacy and confidentiality
- Provide a high standard of cleanliness
- Be well-lit and well-ventilated
- Be accessible only to authorized personnel
- Be secure enough to store sample collection equipment
- Contain a table and chairs for administration and completion of paperwork
- Contain a comfortable chair or bed for sample provision
- Contain a refrigerator or cool-box
- Be large enough to accommodate the *Athletes*, Athlete Representative and *Sample Collection Personnel* who will occupy the area
- Be suitably located in relation to the field of play or other location where *Athletes* will be notified.

NOTE 1: Although the term Blood Collection Facility is used, for out-of-competition testing this facility might be an *Athlete's* home or a hotel room, rather than an officially designated facility for doping control, as long as it meets the minimum criteria in 5.2.2.

NOTE 2: The Blood Collection Facility may be located adjacent to, or in the same suite of rooms as the doping control station where urine sample collection is to take place.

5.2.2 The minimum requirements to be met to enable use of a facility as a Blood Collection Facility are privacy and cleanliness. The requirements are necessarily more stringent than for a doping control station for the purpose of urine sample collection. If the facility does not meet the minimum requirements, the Lead DCO may decide not to proceed with testing. The reasons for such a decision must be documented.

5.2.3 Access to the facility shall be restricted to the *Athlete* providing the sample, the Athlete Representative, an interpreter if required, and *Sample Collection Personnel*, unless otherwise agreed by the Lead DCO. Additional personnel requesting access may include an IF representative, an auditor or a WADA Independent Observer. These personnel shall have adequate authorization available for the Lead DCO to review upon arrival at the Blood Collection Facility.

5.2.4 The Lead DCO may wish to assign a member of the sample collection team to monitor access to the Blood Collection Facility, and ensure that only authorized persons are admitted.

5.3 *Prepare the necessary equipment*

5.3.1 The DCO should ensure that equipment supplies are adequate for the testing session. The type of equipment may vary but, as a guideline, will include:

- Sterile needles
- Butterfly needles
- Disposable plastic syringes
- Vacutainer collection tubes to draw a predetermined volume of blood (these may include serum separator tubes or and/or EDTA (anti-coagulant) tubes, as required).
- Sterile disinfectant pads
- Gloves providing barrier protection
- Tourniquets
- A disposal container for bio-hazardous waste
- A bio-hazard spill kit
- Adhesive bandage and gauze
- A cold-box
- Secure transport containers
- Secure transport bags and seals
- Transport temperature monitoring device
- All doping control documentation, including doping control forms, *Athlete* notification forms, supplementary report forms, chain of custody forms, etc

5.3.2 Any sample collection equipment systems used shall meet the following minimum criteria:

- Have a unique numbering system incorporated into all containers in which the *Athlete's* sample is sealed.
- Have a sealing system that is tamper-evident.
- Ensure the identity of the *Athlete* is not evident from the equipment itself.
- Ensure that all equipment is clean and sealed prior to use.

5.4 *Athlete Selection*

5.4.1 The DCO will select *Athletes* according to the selection policy indicated by the ADO. This may include one or all of the following: target testing (named *Athletes* or categories), *weighted* selection and random selection.

5.4.2 Following the selection of the *Athlete*, the Lead DCO shall ensure that selection decisions are disclosed on a need-to-know basis only to ensure that testing is *No-Advance Notice*.

5.5 *Athlete notification*

- 5.5.1 No-advance notice shall be the preferred type of notification.
- 5.5.2. The DCO/*Chaperone* shall establish the location of the selected *Athlete*, and plan the approach and timing of notification, taking into account any specific circumstances such as the competition/training schedule, and such that the notification will be carried out as *No-Advance-Notice* notification.
- 5.5.3 The DCO/*Chaperone* shall identify him/herself and shall show the *Athlete* the official card/document naming the ADO which has granted the authority to test. Additional identification proving affiliation to the authorized sample collection authority shall also be provided, if this authority is not the ADO which authorized the test. DCO identification documents shall include name, photograph, and the documents' expiry date. Chaperone identification documents shall ideally also include name, photograph, and the documents' expiry date, and as a minimum shall comprise a dated document naming them as an authorized member of the sample collection team, which they shall show to the *Athlete* in conjunction with a piece of photo ID.
- 5.5.4 The DCO/*Chaperone* shall, at a minimum, verbally confirm the *Athlete's* identity. If the *Athlete* is carrying photo ID, this may be checked at this stage. An *Athlete's* inability to provide photo ID shall not invalidate a test. Formal identification can be established by starting number, accreditation, third party witness, if the *Athlete* is known to the DCO/Chaperone, or other viable method. If the *Athlete's* identity is unknown and can not be established in any manner, the DCO must contact the ADO for further instructions.
- 5.5.5 The DCO/*Chaperone* shall show the *Athlete* the notification form (which may be part of the doping control form), and notify the *Athlete* of his/her selection for testing, the authority under which sample collection is to be conducted, and the requirement to provide a blood (and urine, if applicable) sample, and shall inform the *Athlete* of the following rights and responsibilities:
- a) For all types of testing
- The right to have a representative and, if required, an interpreter present.
 - The right to ask for additional information about the sample collection process
 - The possible consequence of an anti-doping rule violation for failing to submit to sample collection.
 - The requirement to remain in sight of the designated DCO/*Chaperone* until completion of the sample collection procedure.
 - The requirement to bring satisfactory identification to the Blood Collection Facility if this has not already been provided.

- 5.5.6 If a selected *Athlete* is not located based on available information, the DCO shall attempt to locate the *Athlete* by other means, but ensure that *No-Advance-Notice* notification is used as a notification method. The DCO shall notify the ADO for further instructions if the *Athlete* is not located.
- 5.5.7 The DCO shall report any decision to the ADO if an unexpected situation arises requiring the notification to become advance notice.
- 5.5.8 The *Athlete* shall read and sign the *Athlete* notification form or doping control form as directed by the DCO/*Chaperone*.
- 5.5.9 If an *Athlete* copy of the official notification record exists, this will be given to the *Athlete*.
- 5.5.10 If the *Athlete* refuses to sign that he/she has been notified, or evades notification, the DCO/*Chaperone* shall make all reasonable attempts to persuade the *Athlete* to comply, including informing the *Athlete* again that failure to comply may result in sanction for an anti-doping rule violation. If the *Athlete* continues to refuse, the *Chaperone* must report this to the Lead DCO immediately, and the DCO shall attempt to notify the *Athlete*. If the *Athlete* still refuses to be notified, the DCO shall document the facts, including the reasons for refusal given by the *Athlete*. The DCO shall endeavor to obtain witness signatures to confirm the *Athlete's* refusal, and shall contact the ADO for further instructions as soon as possible.

5.6 *Escorting the Athlete to the Blood Collection Facility.*

- 5.6.1 The DCO/*Chaperone* shall ensure that the *Athlete* is escorted from the place of notification to the Blood Collection Facility under constant supervision.
- 5.6.2 The DCO/*Chaperone* can not prevent the *Athlete* eating or drinking products of their choice, but shall recommend that the *Athlete* chooses from a selection of individually sealed, non-caffeinated and non-alcoholic beverages in order to hydrate. The DCO/*Chaperone* shall not handle food or drink items for the *Athlete*.
- 5.6.3 The DCO/*Chaperone* shall escort the *Athlete* at all times until the sample collection procedures have been completed, or shall ensure that another DCO/*Chaperone* has taken over escorting the *Athlete*.
- 5.6.4 The *Chaperone* shall inform the Lead DCO as soon as practical without leaving the *Athlete* unattended, and ensuring discretion, of any irregularities in notification and/or during the observation period. Irregularities shall be documented by the Lead DCO if relevant.

NOTE: The ADO is responsible for establishing guidelines for what constitutes suspicious *Athlete* behavior – examples might be; evading observation, ingesting an unidentified substance, a distressed call to a coach or other unusual behavior.

5.7 *Athlete arrival at the Blood Collection Facility*

- 5.7.1 The *Athlete* arrives at the Blood Collection Facility with a DCO/*Chaperone* and, if requested, an *Athlete Representative*. At this time, the *Athlete* should present photo ID to the DCO. An *Athlete's* inability to provide photo ID shall not invalidate a test.
- 5.7.2 A Blood Sample shall be collected from one *Athlete* at a time. Each *Athlete's* privacy shall be ensured.
- 5.7.3 The *Athlete* shall be provided with the opportunity to hydrate.
- 5.7.4 The *Athlete* must be under observation at all times until sample collection begins.
- 5.7.5 In order to ensure the same conditions for all, the *Athlete* shall remain seated and relaxed for at least 10 minutes before undergoing Venipuncture.
- 5.7.6 Before sample collection, the DCO shall ask the *Athlete* whether they have been tested before, and whether they require an explanation of the Blood Sample collection procedure.
- 5.7.7 If the *Athlete* has not been tested before, or requests an explanation of the procedure, the DCO shall explain the Blood Sample collection procedure to the *Athlete*.
- 5.7.8 As a minimum, the DCO shall ensure the *Athlete* is informed of his/her rights and responsibilities

5.8 Venipuncture

NOTE: The type of equipment used for blood collection, and the post-collection process, will differ depending on the type of analysis required. The vacutainers identified below are recommended as they have been submitted to full validation by WADA. Alternate equipment which may meet identical criteria to those identified herein may be permissible but should be validated by WADA prior to use consistent with the collection methodology presented herein. In summary:

5.8.1 Analysis of whole blood for prohibited substances and methods (eg detection of blood transfusion and HBOCs):

Number of samples: 2 (A sample and B sample)

Volume required: 2 x 3mL (or as specified by relevant laboratory)
(BD Vacutainer K2EDTA (K2) CE cat no 368856/ref US 367856)

The tube used contains an anti-coagulant, such as EDTA. The contents must be homogenized as soon as possible after collection. E.g. tubes can be gently inverted ten (10) times. The contents shall then be sent to laboratory with no further action.

5.8.2 Analysis of serum for prohibited substances and methods (eg detection of hGH and HBOCs):

Number of samples: 2 (A sample and B sample)

Volume required: 2 x 5mL (or as specified by relevant laboratory)

Blood is drawn into a tube that has an inert polymeric serum separator gel and a clotting activation factor. (BD Vacutainer® SST II, EU ref 367955)

The contents must be homogenized as soon as possible after collection. E.g. tubes can be gently inverted up-side down five (5) times. The contents shall then be sent to laboratory with no further action.

- 5.8.3 After the required rest period, and the DCO/BCO explanation of procedure, the DCO shall direct the *Athlete* to choose the appropriate number of Blood Sample collection kits, as required by the ADO. It is recommended that there are at least 3 Blood Sample collection kits from which to choose.

NOTE: The kit will typically include the sterile needle, syringe and the relevant vacutainer tubes packaged together in a sealed bag. If kits contain only one vacutainer, and an A and B sample are required, the *Athlete* shall choose two Blood Sample collection kits.

- 5.8.4 The *Athlete* and DCO shall check that the equipment is clean and intact. If either the *Athlete* or DCO is not satisfied with the equipment, the *Athlete* shall make another selection.

- 5.8.5 If the *Athlete* is not satisfied with any of the equipment, and the DCO does not agree with the *Athlete's* opinion that all of the available equipment is unsatisfactory, the DCO shall instruct the *Athlete* to proceed with the sample collection session and the *Athlete's* views must be recorded on the doping control documentation by the DCO.

- 5.8.6 If both the DCO and the *Athlete* agree that none of the equipment is satisfactory, the DCO shall terminate sample collection, and record the reasons.

- 5.8.7 When the Blood Sample collection kit has been selected, the *Athlete* and the DCO shall proceed with the selection of the secure transport kit. Selection will proceed in the same manner as 5.8.1 to 5.8.3.

- 5.8.8 If the secure transport kit includes pre-printed bar code labels, the *Athlete* shall remove these labels from the secure transport kit, and shall verify with the DCO that the code numbers match the transport kit numbers.
- 5.8.9 If the *Athlete* or DCO find that the numbers are not the same, the DCO shall instruct the *Athlete* to choose another secure transport kit, and shall document the occurrence.
- 5.8.10 The *Athlete* shall place one label longitudinally on each of the vacutainer tubes. The label shall be placed towards the top of the tube(s), near the cap. The *Athlete* may authorize the DCO, or the Athlete Representative to place the labels on the tubes.
- 5.8.11 The DCO shall record the numbers, and the *Athlete* and the DCO shall check the documentation to ensure that the DCO has accurately recorded the information.
- 5.8.12 The *Athlete* shall give the BCO the Blood Sample collection equipment, including the vacutainer(s). The BCO shall assemble the equipment in sight of the *Athlete*.
- 5.8.13 The BCO shall assess the most suitable arm for Venipuncture. This will always be the non-dominant arm, unless the BCO assesses the other arm to be more suitable or the *Athlete* requests a specific arm.
- 5.8.14 If the BCO believes that a butterfly needle is required for Venipuncture, the *Athlete* shall be asked to select a butterfly needle from a selection of sealed needles. The procedure then continues as normal.
- 5.8.15 If necessary, the BCO shall apply a tourniquet to the *Athlete's* upper arm. If the *Athlete* has a skin problem, the tourniquet shall be applied over thin clothing or a paper tissue so that the skin is not pinched.
- 5.8.16 The skin at the puncture site shall be cleaned with a sterile disinfectant wipe or swab.
- 5.8.17 The needle shall be inspected visually before insertion. After the BCO has inserted the needle into the antecubital vein, the tourniquet shall be removed.
- 5.8.18 The BCO shall collect the amount of blood advised by the relevant laboratory or ADO for the type of sample analysis to be conducted. The collection vessel (s) shall always be kept in full view of the *Athlete*.
- 5.8.19 In the event that the BCO is unable to draw sufficient blood from the first attempt, up to three attempts in total shall be made before the DCO, in consultation with the BCO, decides to terminate collection. No more than

three attempts to insert a needle into the *Athlete's* body shall be made. The DCO shall record the reasons for terminating the collection attempt.

- 5.8.20 The blood shall be collected into one or more vessels, depending on the requirements of the ADO.
- 5.8.21 Blood collection equipment must be disposed of in accordance with the required standards for handling blood and the BCO's protocol.
- 5.8.22 The recommended temperature recording device used to monitor the transport conditions should be turned on to ensure temperature reaches 2-8 degrees Celsius before samples are placed inside cool-box.

5.9 Aftercare procedure

- 5.9.1 After withdrawing the needle from the *Athlete's* arm, the BCO shall place a pad over the puncture site and instruct the *Athlete* to press firmly on the pad. The BCO may also choose to apply pressure to the wound.
- 5.9.2 If necessary, pressure shall be applied for 2 – 3 minutes prior to undertaking the sample sealing procedure. The BCO shall assess the wound and indicate to the *Athlete* and the DCO when the *Athlete* is ready.
- 5.9.3 The BCO or the DCO shall advise the *Athlete* not to undertake any strenuous exercise using the arm for at least 30 minutes. This minimizes any potential bruising.
- 5.9.4 The BCO shall be prepared to conduct first-aid if necessary.

5.10 Post collection processing for the purpose of:

5.10.1 Analysis of Whole Blood

- 5.10.1.1 For the analysis of whole blood, the 2 x 3mL Blood Samples, comprising of an A and a B sample will be inverted gently ten (10) times to mix the blood with the anti-coagulant contained in the tube to avoid clot formation. This step shall be taken as soon as possible. The Blood Samples should then be sealed and made ready for transportation in accordance with 5.11.

5.10.2 Analysis of Serum

- 5.10.2.1 Both of the 2 x 5mL Blood Samples shall be inverted gently five (5) times to initiate clotting and remain at room temperature for the time recommended by the tube manufacturer (15 minutes for BD Vacutainer®)

SST II advance tubes) before being sealed and made ready for transportation in accordance with 5.11.

5.11 *Sealing of the Blood Samples*

- 5.11.1. The *Athlete* shall take the secure transport kit already selected in 5.8.5, or, if not yet selected, shall choose a transport kit from a selection of kits in accordance with the process outlined in 5.8.
- 5.11.2. The DCO shall instruct the *Athlete* to place one Blood Sample into each of the A and B tamper evident sample transport kits. The *Athlete* may request the DCO or the Athlete Representative to complete this process on their behalf.
- 5.11.3 Both the DCO and the *Athlete* shall check that the kits are securely sealed. Care must also be taken to ensure that at all times, the samples are stored upright.
- 5.11.4 The DCO and *Athlete* should ensure that the equipment code numbers are accurately recorded on the Doping Control documentation. The *Athlete* and DCO should initial or sign the documentation to show they are satisfied with the procedure.
- 5.11.5 The DCO shall ensure the Blood Sample is stored in a secure, preferably cooled (2-8 degrees Celsius), location (i.e. transport bag) until ready to proceed to 5.14 - Transport of samples.

5.12 *Paperwork*

- 5.12.1 The DCO shall instruct the BCO to sign the form to confirm that he/she collected a Blood Sample from the *Athlete* in accordance with procedures.
- 5.12.2 The *Athlete* shall be provided an opportunity to document any blood transfusions over the last six months, and to indicate any medications, including those which may affect the ability of the blood to clot, taken over the past 7 days.
- 5.12.3 The DCO shall check all information on the form and sign to confirm that Blood Sample collection was conducted in accordance with procedures.
- 5.12.4 The *Athlete* and the Athlete Representative, if present, shall be invited to check that all information on the form accurately reflects the details of the sample collection session. The *Athlete* shall be invited to complete the comments section of the form if he/she has any concerns or comments regarding the procedure. If there is insufficient space on the form, the *Athlete* shall be invited to complete a supplementary report form.

- 5.12.4.1 Blood-only doping control form:
- The DCO, the Athlete Representative, if present, and the *Athlete* shall then sign the doping control form.
- 5.12.4.2 Combined urine/blood doping control form:
- If the urine sample has already been collected, the DCO, the Athlete Representative, if present, and the *Athlete* shall sign the doping control form.
 - If the urine sample has not yet been collected, the *Athlete* shall proceed to provide a urine sample before the DCO, the Athlete Representative, if present, and the *Athlete* shall sign the doping control form.
- 5.12.5 The DCO must give a full copy of the form to the *Athlete*.
- 5.12.6 The *Athlete* shall then proceed to provide a urine sample if required, or is free to leave the Blood Collection Facility.

5.13 *Sample Storage*

- 5.13.1 The Lead DCO is responsible for ensuring, in accordance with the ADO's criteria for Blood Sample storage, that all samples are stored in a manner that protects their identity, integrity and security whilst in the Blood Collection Facility.
- 5.13.2 Samples must not be left unattended, unless they are locked away, in a refrigerator or cupboard, for example. Access shall be restricted to authorized personnel.
- 5.13.3 The Blood Samples must be stored in a cool location, preferably in a refrigerator or cool box. The optimum temperature for the storage of Blood Samples is 4 degrees Celsius. Variations in temperature should not exceed 2 – 8 degrees Celsius.
- 5.13.4 If the conditions of storage did not meet the guidelines for temperature 5.13, the DCO shall document this, and shall also contact the ADO immediately to inform them of the variation in temperature, and the length of time the samples were affected.
- 5.13.5 If the variations in temperature were substantial and occurred for a period of time likely to affect the composition of a Blood Sample, the ADO and Laboratory shall determine whether or not analysis should proceed on the sample.

- 5.13.6 The DCO shall accurately complete appropriate documentation for each transport bag/container to ensure that the laboratory can verify the contents of the bag/container.
- 5.13.7 The DCO shall follow the ADO's system to ensure that instructions for the type of analysis to be conducted are provided to the laboratory.
- 5.13.8 The DCO shall complete the laboratory advice form/chain of custody form. The laboratory copy of this form and the laboratory copy of the doping control form shall be placed in the transport bag with the samples, and sealed, preferably in the presence of a witness. Documentation identifying the *Athlete* shall not be included with the samples.
- 5.13.9 If relevant, the DCO shall record the times the transport bag is opened and resealed, on the laboratory advice form or chain of custody form.
- 5.13.10 The DCO shall keep the samples under his/her control until they are passed to the courier. Blood Samples should be dispatched as soon as possible after collection to arrive at the laboratory ideally on the same day, and preferably within 24 hours of collection.
- 5.13.11 All documentation relevant to the testing session shall be forwarded to the ADO by the approved method as soon as possible after sample collection.

5.14 *Transport/handover of Samples*

- 5.14.1 The Blood Samples shall be transported to the Laboratory in a refrigerated state. No sample should be allowed to freeze, and should ideally be kept at a temperature of approximately 4 degrees. Variations in temperature shall not exceed 2 – 8 degrees Celsius. A temperature recording device is recommended to be included with the transported samples to ensure the appropriate temperature has been maintained.
- 5.14.2 Samples should remain in an upright position during transportation, whenever possible.
- 5.14.3 Samples may be taken directly to the Laboratory by the DCO, or handed over to a third party for transportation. This third party must document the chain of custody of the samples. If an approved courier company is used to transport the samples, the DCO shall record the waybill number.
- 5.14.4 Due to the more stringent temperature and analysis requirements for blood, blood and urine samples may be transported separately. The relevant paperwork linking the two samples shall be included with each shipment, however.
- 5.14.5 Transport of Blood Sample(s) from site of collection to laboratory should be made in less than 48 hours.

5.14.6 The laboratory is required to document receipt and the subsequent chain of custody of samples. Samples are reviewed for evidence of tampering or damage, and stored in appropriate conditions until analysis in accordance with the International Standard for Laboratories.

Appendix 1

On-site screening of Blood Samples for Hematological Parameters

NOTE 1: Blood screening does not form part of anti-doping testing however longitudinal hematological profiling ("the passport") may be used for anti-doping purposes in accordance with Article 2.2 of the *Code*. Mandatory technical documents to supplement both the IST and ISL will soon be made available to Anti-Doping Organizations who wish to employ the indirect detection (passport) methodology.

NOTE 2: Blood screening does not form part of doping control activities, but may be conducted by some Anti-Doping Organizations in order to plan effective target testing. In such cases, the following conditions should apply:

Number of samples: 1

Volume required: 1 x 3mL (or as specified by relevant laboratory)

For blood screening purposes, such as for reticulocyte, hematocrit and haemoglobin levels, whole blood is the medium analyzed. In such cases the tube used contains an anti-coagulant, such as EDTA.

For screening of blood for hematological parameters, the 1 x 3mL Blood Sample will be inverted gently at least 5 times to mix the blood with the anti-coagulant contained in the tube, sealed and made ready for transportation in accordance with 5.11

The contents can be mixed and sent to the laboratory or screened on site with no further action.

In those instances where Blood Samples are screened on-site, Steps 5.1 to 5.9 are completed. The following should also be taken into account:

- The sample collection vessel (s) should first be checked according to Step 5.8
- In order to protect the integrity of the sample, there shall be an additional tamper-evident mechanism for guaranteeing the integrity of the samples between collection and on-site analysis. This could take the form of an identifying seal which covers the lid of the sample collection vessel(s), or a temporary sealed container.
- The chain of custody of samples must be carefully documented throughout.
- On-site screening shall take place in a secure, clean area and be conducted only by qualified experts using equipment approved by the *Anti-Doping Organization*.
- On-site screening shall not take place in the Venipuncture room whilst other *Athletes* or *Athlete* support personnel are present.