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Last review date: August 11, 2011

Purpose

To obtain blood samples from a research subject using venipuncture.

Responsibility

Personnel associated with the LCBRN Biospecimen Resource Sites who are trained in venipuncture are responsible for carrying out these procedures competently and safely. Data entry into the LCBRN online database may be carried out by different personnel than those entering data onto the LCBRN Biofluid Collection Form at the time of procurement.

All personnel handling human biosamples must have training in, and adhere to, universal biohazard precautions and human subject research ethics/confidentiality principles.

Equipment/Reagents

1. LCBRN blood collection kit containing collection tubes and labels.
2. A blank LCBRN Biofluid Collection Form.
3. Blood collection system (sterile needles and vacutainer holder or butterfly needle and syringe)

Note: Permissible needle gauges for blood draw: 22 gauge or smaller (following WHO Best Practices in Phlebotomy)

1. Protective gear (eye/faceshield, disposable gloves, appropriate lab attire).

Procedure

1. A vacuum collection system will be used for venipuncture where possible. Syringes and needles may be used in place of the vacuum collection system in special circumstances. Materials should be gathered and placed adjacent to subject prior to venipuncture.
2. The research subject’s arm will be hyperextended and positioned comfortably on the armrest of the venipuncture chair/couch as appropriate.
3. A tourniquet will be applied 3–4 inches above the selected puncture site and will not be left in position for longer than two minutes.
4. The research subject will be asked to make a fist without pumping the hand.
5. The puncture site will be cleansed using an alcohol-containing swab (or other cleansing swab proscribed by the health institution) in a circular motion from the center to the periphery.
6. The cleansed site will be allowed to air dry prior to venipuncture.
7. The research subject’s vein will be anchored and the needle will then be inserted through the skin, bevel edge uppermost, into the lumen of the vein.
8. The research subject’s arm will not be placed in a bent position at any time following venipuncture.
9. The tourniquet will be released when the last collection tube to be drawn is filling.
10. Clean dry gauze or cotton wool will be placed on the venipuncture site and the needle will be removed in a swift backward motion using a needle protector.
11. The research personnel will press down on the gauze/cotton wool once the needle has been drawn out of the vein applying adequate pressure to avoid formation of a hematoma.
12. The research subject’s arm will be inspected to ensure bleeding has stopped and an adhesive bandage or taped gauze pad will be applied.
13. The research personnel will ensure that the research subject has not experienced any adverse events from the venipuncture and will then assist them from the chair.
14. Tubes containing anticoagulants must be properly mixed immediately after each is drawn by inverting the tube. See specific SOPs for number of inversions required.
15. All contaminated materials/supplies will be disposed of in designated contaminated medical waste containers. Needles will be disposed of in sharps containers also designated as contaminated medical waste containers.
16. Specified data is recorded onto an LCBRN Biofluid Collection Form, which is identified with the subject’s study ID and a duplicate label that matches the specimen tube label, as provided in the LCBRN specimen collection kit.
17. Processing and aliquoting of blood samples is carried out as specified in separate SOPs.

References

Protocol adapted from: Guerin JS et al. (2010) Biopreservation and Banking 8:3-63.

WHO guidelines for drawing blood: Best practices in phlebotomy (WHO Press, Geneva) (2010)

**Change History**

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| --- | --- | --- | --- |
| Version # | Significant change(s) | Author | Effective Date |
| 1 |  | Moskaluk | 12/1/2011 |
| 2 | Needle gauge specification. Changes in sequence of procedure steps. | Moskaluk | 8/15/2011 |