SOP: Phlebotomy Sample Collection

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1. Purpose

This SOP describes the blood collection procedure for storage in the SickleInAfrica biorepository. This SOP aims to minimize discomfort, infection of consenting participants, and the risk of infection to healthcare professionals extracting the blood. All blood samples will be collected by a registered and trained nurse or sister.

2. Background

Whole blood refers to unclotted blood collected in a tube containing the anticoagulant, EDTA. The samples will be collected to diagnose diseases and to extract plasma, serum, DNA or RNA, needed for genomic studies.

3. Scope

To present the procedure for collecting and handling blood samples in participants.

4. Equipment and reagents

1. 5ml syringe;
2. 23g butterfly needle;
3. Alcohol swab;
4. EDTA Blood tubes (Purple cap)
5. Gloves
6. Cotton-wool/plaster

5. Responsibilities

The registered and trained nurse or sister is responsible for collecting patient consent and specimens and that the vials are labeled accordingly. Transport and the processing of blood should be maintained by the researcher.

6. Procedure

- Practice good hygiene and wash hands
- Identify the participant prior to collecting the blood sample and explain the procedure to each participant
- Use alcohol swabs to clean the area
- Prick the vein gently, pull the syringe plunger, collect the specified amount of blood, and release the tourniquet
- Withdraw the needle, apply a dry cotton swab, hold for a few seconds, or fold the elbow until the bleeding stops
- Put on a plaster
- Dispose of all used waste into the appropriate containers
- Label the sample tubes with the participant's code
- Mix blood (by inversion) promptly with the EDTA to avoid sample clotting. **Do not shake the tube.**
- Blood samples should be refrigerated until processing

7. Transport

The researcher is responsible for transferring samples from the patient to the laboratory or specified area, where samples will be processed and/or stored.

All specimens must be transported in a sealed biohazard bag.

8. Processing and storage

Once the sample is collected, it ~~sample~~ can be stored at room temperature in an upright position for 15-30 minutes, this minimizes the risk of hemolysis, and thereafter should be placed in its dedicated rack within the fridge (4°C). Whole blood can be stored in EDTA tubes <3 days.

Do not centrifuge blood tubes!

9. QA/QC

The standardized guidelines for correct blood collection should be clearly communicated to the clinician and all the staff involved. The total volume of blood collected (10mL) should be monitored to ensure strong quality assurance.

10. References

1. **WHO Guidelines** https://www.euro.who.int/__data/assets/pdf_file/0005/268790/WHO-guidelines-on-drawing-blood-best-practices-in-phlebotomy-Eng.pdf
2. De Plato, Francesca, Fontana, Carla, Gherardi, Giovanni, Privitera, Gaetano Pierpaolo, Puro, Vincenzo, Rigoli, Roberto, Viaggi, Bruno and Viale, Pierluigi. "Collection, transport and storage procedures for blood culture specimens in adult patients: recommendations from a board of Italian experts" *Clinical Chemistry and Laboratory Medicine (CCLM)*, vol. 57, no. 11, 2019, pp. 1680-1689. https://doi.org/10.1515/cclm-2018-1146

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