SOP on 20-Minute Whole Blood Clotting Test (20WBCT) Procedure in the Ward Setting

Department of Medicine
Faculty of Medicine
UWUSL

Standard Operating Procedure on 20-Minute Whole Blood Clotting Test (20WBCT) Procedure in the Ward Setting

(1) Title
20-Minute Whole Blood Clotting Test (20WBCT) Procedure in the Ward Setting

(2) Issued By
Department of Medicine, Faculty of Medicine, Uva Wellassa University of Sri Lanka

(3) Purpose & Scope
This Standard Operating Procedure (SOP) establishes a standardised approach for the safe and accurate performance and interpretation of the 20-Minute Whole Blood Clotting Test (20WBCT) at the bedside for the assessment of coagulopathy in patients with suspected or confirmed snakebite.

It is intended to minimise procedural and interpretative errors, promote patient safety, and support appropriate clinical decision-making. The SOP primarily applies to medical students and also to medical officers, nursing officers, and other healthcare personnel involved in the preparation, sample collection, timing, interpretation, documentation, and supervision of the 20WBCT in ward settings.

It further provides a structured framework for the supervised training of medical students, supporting the development of competency and preparedness for clinical practice as house officers.

(4) Principle
The 20-Minute Whole Blood Clotting Test (20WBCT) is a bedside procedure used to assess venom-induced consumption coagulopathy and evolving disseminated intravascular coagulation (DIC) following snakebite.

When freshly drawn venous blood contacts the inner surface of a clean, dry, ordinary borosilicate glass tube, the intrinsic coagulation cascade is activated, producing a solid blood clot within 20 minutes in individuals with intact coagulation. Failure of the blood to clot after 20 minutes indicates severe depletion of fibrinogen and other clotting factors due to systemic envenoming.

Accurate testing requires positive patient identification, strict adherence to aseptic venepuncture techniques, exclusive use of uncontaminated and detergent-free borosilicate glass tubes, undisturbed incubation, and clinical correlation alongside laboratory coagulation assays.

(5) Responsibilities

(5.1) Medical students

(5.1.1) Observe and participate in the 20WBCT procedure under the direct supervision of a medical officer.
(5.1.2) Acquire knowledge of each step of the 20WBCT process, including indications, blood collection tube selection, sample collection, timing, interpretation, and causes of false positive and false negative results through supervised clinical exposure to prepare for future independent practice.
(5.1.3) Assist in basic tasks such as monitoring the 20-minute incubation period, observing vital signs and bleeding manifestations, and promptly reporting any abnormalities.

(5.2) House officers / Medical officers

(5.2.1) Assess the clinical indication for the 20WBCT, evaluate the patient for systemic envenoming, and request parallel laboratory coagulation studies.
(5.2.2) Verify patient identity, inspect the borosilicate glass tube for suitability, and perform or supervise the bedside test.
(5.2.3) Interpret the 20WBCT result at 20 minutes, correlate findings with the clinical condition of the patient, initiate antivenom therapy when indicated, and ensure accurate documentation in the bed head ticket (BHT).

(5.3) Nursing officers and other healthcare staff

(5.3.1) Prepare the patient and ensure a dedicated supply of clean, dry, detergent-free 5 ml borosilicate glass test tubes (10 mm internal diameter) prior to the procedure.
(5.3.2) Ensure the collected blood sample remains upright and completely undisturbed at the bedside for the full 20-minute duration.
(5.3.3) Immediately report positive (non-clotting) test results or any spontaneous systemic bleeding to the medical officer and assist in subsequent management.

(6) Indications

(6.1) Initial bedside assessment of a patient with suspected or confirmed snakebite for evidence of venom-induced coagulopathy.
(6.2) Assessment of suspected systemic envenoming in patients with spontaneous bleeding or other clinical features suggestive of coagulopathy.
(6.3) Assessment of restoration of coagulation following antivenom administration, in conjunction with clinical assessment and appropriate laboratory investigations.

(7) Contraindications & Limitations

(7.1) Overriding clinical evidence of envenoming - The 20WBCT has **low sensitivity** for detecting mild coagulopathy in snake envenoming and **must not override** clinical assessment-based decisions or delay antivenom administration when spontaneous systemic bleeding distant from the bite site is present.
(7.2) Inappropriate or contaminated collection vessels - The test must not be performed in plastic tubes, non-borosilicate vessels, wet tubes, or recycled glass tubes cleaned with soap, detergent, or washing fluid, as these produce **false positive (non-clotting)** results in non-envenomed patients.

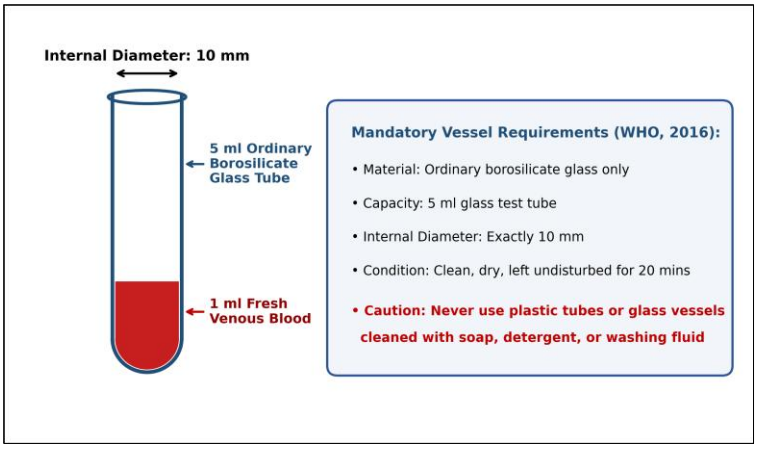
(7.3) Early or mild coagulopathy - A **false negative (clotting)** result may occur in the early stages of evolving snake venom-induced DIC or when milder depletion of fibrinogen and other clotting factors is present.

(8) Procedure

(8.1) Equipment needed

(8.1.1) Clean, dry 5 ml ordinary borosilicate glass test tube with an internal diameter of 10 mm (unused or strictly free of soap, detergent, cleansing fluids, and moisture).





(8.1.2) Disposable non-sterile examination gloves.



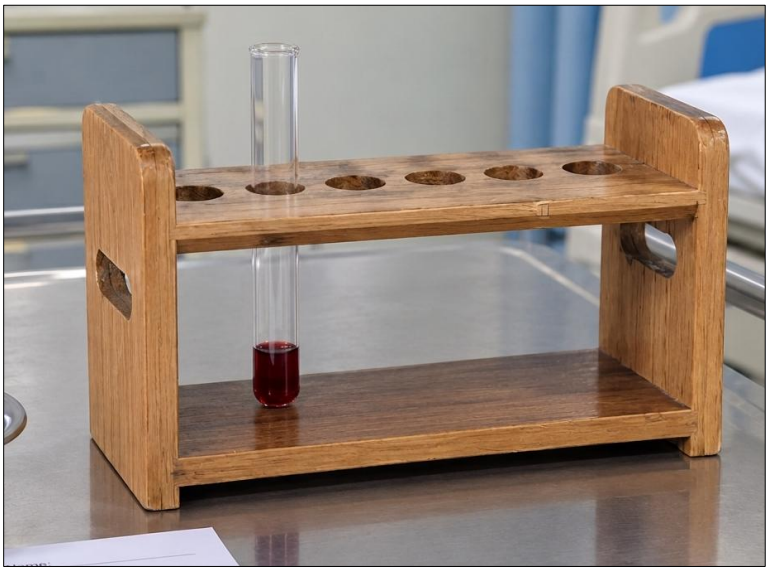
(8.1.3) Sterile syringe and needle for venipuncture.



(8.1.4) Blood sample collection tubes for routine laboratory coagulation assays (prothrombin time [PT], International Normalized Ratio [INR], activated partial thromboplastin time [aPTT] and fibrinogen assay).



(8.1.5) Test tube rack to hold the glass tube upright and undisturbed at the bedside.



(8.1.6) Watch or timer to measure the exact 20-minute interval.



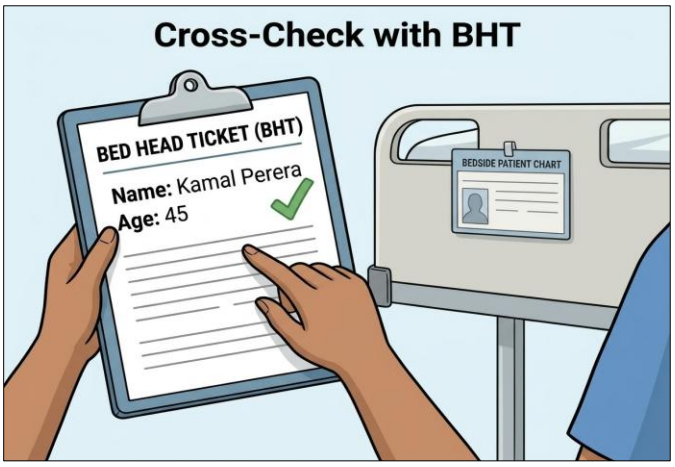
(8.1.7) Biohazard clinical waste and sharps disposal containers.





(8.2) Pre-procedure verification and tube inspection

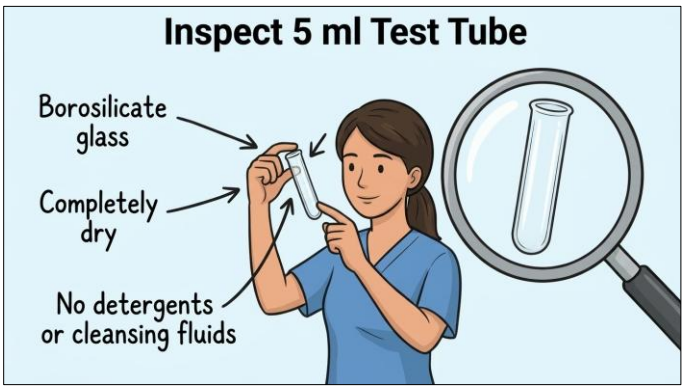
(8.2.1) Confirm the patient's identity by asking the patient to state their full name and age and cross-check the patient's identity details against the bed head ticket (BHT).



(8.2.3) Explain the purpose and steps of the bedside test to the patient and obtain consent.



(8.2.4) Inspect the 5 ml test tube (10 mm internal diameter) to verify that it is made of ordinary borosilicate glass, completely dry, and has not been washed with detergents or cleansing fluids.



(8.3) Collecting the blood sample and bedside incubation

(8.3.1) Wash hands thoroughly with soap and water and put on a clean pair of disposable gloves prior to venepuncture.



(8.3.2) Clean the entry site with a 70% alcohol swab for about 30 seconds and allow it to dry completely for another 30 seconds. Then Perform an atraumatic venepuncture and withdraw venous blood.



(8.3.3) Immediately place 1 ml of freshly collected venous blood directly into the clean, dry 5 ml borosilicate glass test tube of 10 mm internal diameter at the bedside.

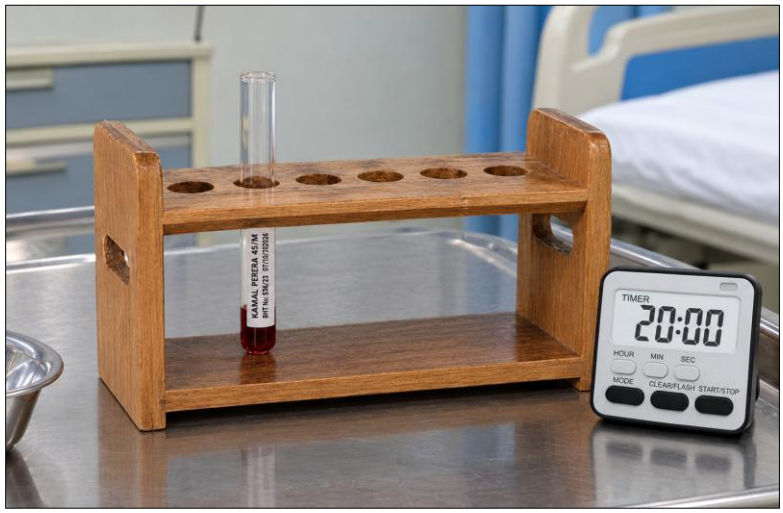


(8.3.4) Whenever laboratory facilities are available, collect concurrent blood samples to routinely estimate prothrombin time (PT) and the International Normalized Ratio (INR) together with the 20WBCT.



(8.3.5) Label the test tube at the patient's bedside immediately after collection with the patient's name, BHT number, and the exact time of blood collection.

(8.3.6) Place the tube upright in a rack at the bedside and leave it completely undisturbed for exactly 20 minutes.



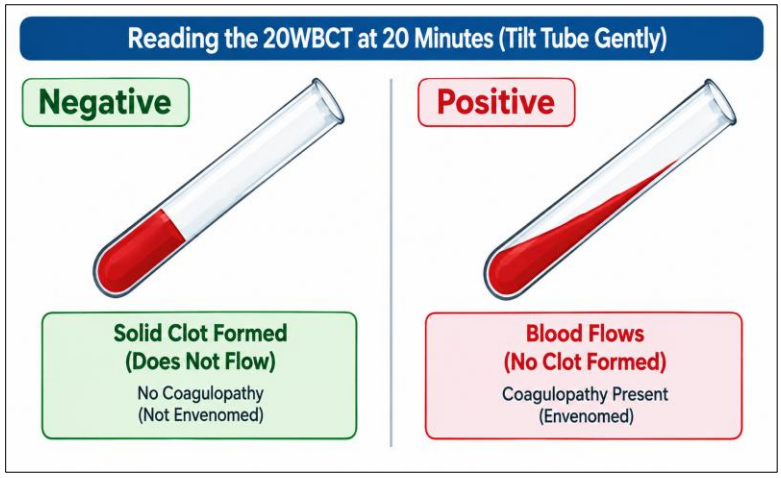
(8.3.7) Ensure the tube is not tilted, shaken, or disturbed by staff, patients, or bystanders before the 20-minute period concludes.

(8.4) Reading and interpreting the result at 20 minutes

(8.4.1) At the exact end of 20 minutes, gently tilt the test tube to observe whether the blood has clotted or flows down the side of the tube.

(8.4.2) Positive Test Result: If the blood flows (i.e. no clot forms), the test is positive, indicating coagulopathy due to systemic envenoming.

(8.4.3) Negative Test Result: If the blood does not flow (i.e. remains solidly clotted), the test is negative, indicating no detectable coagulopathy at the time of testing.



(8.5) Interpretation of Results and Further Assessment

(8.5.1) If the 20WBCT result is doubtful or inconsistent with the clinical condition of the patient, repeat the test immediately using a normal control blood sample for comparison.

(8.5.2) Where available, perform laboratory coagulation tests, including prothrombin time (PT), international normalized ratio (INR), activated partial thromboplastin time (aPTT), and plasma fibrinogen assay, particularly when the 20WBCT result is inconsistent with the clinical condition.

(8.5.3) In patients with suspected snakebite and possible coagulopathy, repeat the 20WBCT as clinically indicated, as the test may initially be negative during the early stages of evolving venom-induced disseminated intravascular coagulation (DIC).

(8.5.4) A negative 20WBCT should not delay antivenom treatment when there is other clinical evidence of systemic envenoming, including spontaneous systemic bleeding distant from the bite site. Antivenom should be administered promptly when indicated.

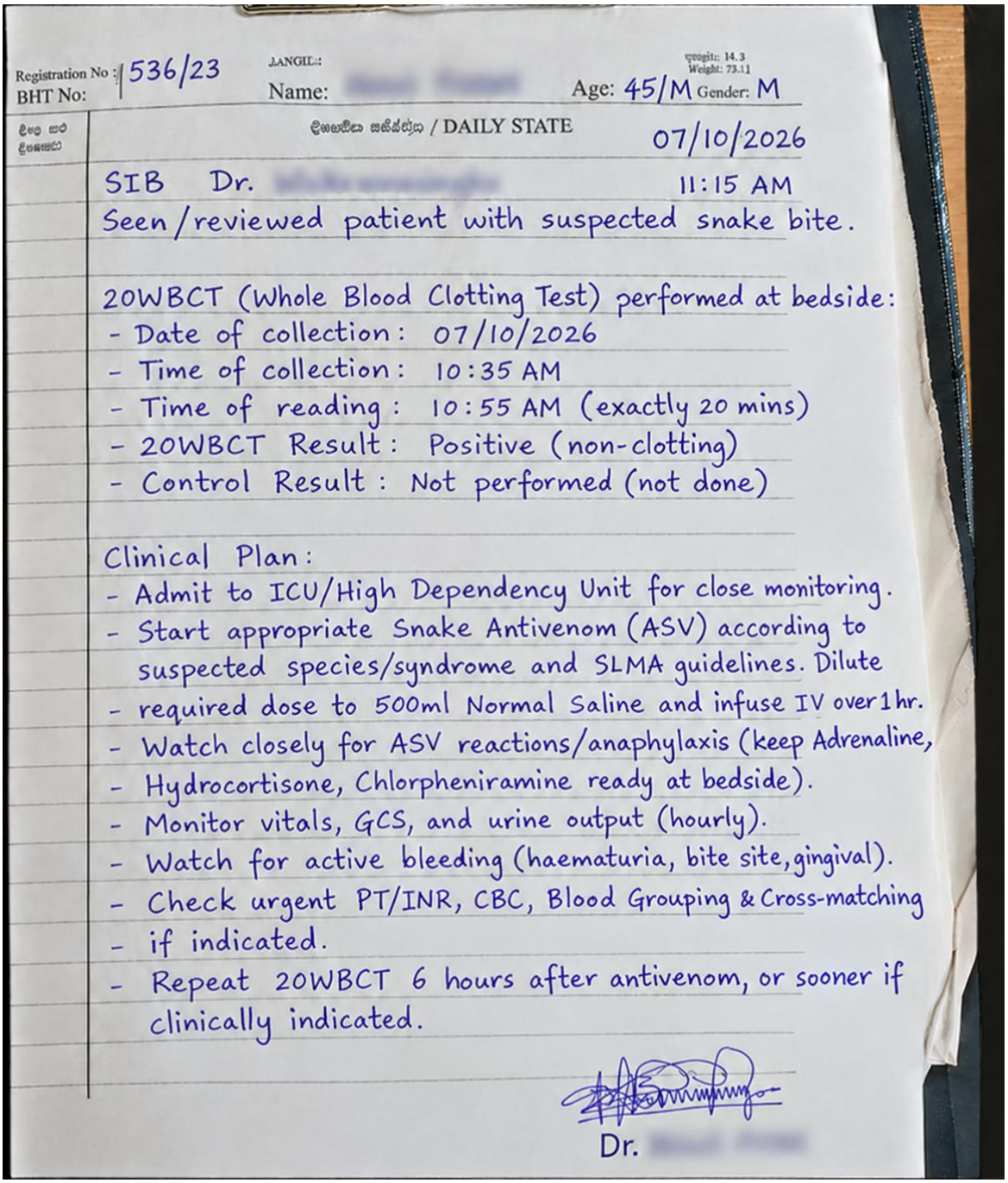
(8.6) Post-procedure waste disposal

(8.6.1) Dispose of the used glass test tube, syringe, needle, and gloves immediately in the designated biohazard clinical waste and sharps containers in accordance with hospital policy.



(8.6) Post-procedure documentation

(8.6.2) Record the date, time of sample collection, time of reading, 20WBCT result (positive/non-clotting or negative/clotting), control result (if performed), and clinical management plan in the patient's BHT.



Registration No : 536/23
BHT No:
JANGIL::
Name: [redacted]
Age: 45/M Gender: M
Weight: 73.11

/ DAILY STATE 07/10/2026

SIB Dr. [redacted] 11:15 AM
Seen/reviewed patient with suspected snake bite.

20WBCT (Whole Blood Clotting Test) performed at bedside:
- Date of collection: 07/10/2026
- Time of collection: 10:35 AM
- Time of reading: 10:55 AM (exactly 20 mins)
- 20WBCT Result: Positive (non-clotting)
- Control Result: Not performed (not done)

Clinical Plan:
- Admit to ICU/High Dependency Unit for close monitoring.
- Start appropriate Snake Antivenom (ASV) according to suspected species/syndrome and SLMA guidelines. Dilute
- required dose to 500ml Normal Saline and infuse IV over 1 hr.
- Watch closely for ASV reactions/anaphylaxis (keep Adrenaline,
- Hydrocortisone, Chlorpheniramine ready at bedside).
- Monitor vitals, GCS, and urine output (hourly).
- Watch for active bleeding (haematuria, bite site, gingival).
- Check urgent PT/INR, CBC, Blood Grouping & Cross-matching
- if indicated.
- Repeat 20WBCT 6 hours after antivenom, or sooner if clinically indicated.

Dr. [redacted]

(9) References

(9.1) World Health Organization. Guidelines for the management of snake-bites. 2nd ed. New Delhi: World Health Organization Regional Office for South-East Asia; 2016.

(9.2) Sri Lanka Medical Association. Guidelines for the management of snakebite in hospital. Colombo: Sri Lanka Medical Association; 2021.

(10) Prepared by

Prof. S.A.M. Kularatne
Emeritus professor of Medicine
University of Peradeniya

Dr. S.P. Abeywickrama
Head of the Department (Acting)
Department of medicine
Faculty of medicine
Uva Wellassa University of Sri Lanka

Dr. Akalanka Jayasekara
Probationary lecturer
Department of medicine
Faculty of medicine
Uva Wellassa University of Sri Lanka

Dr. Navodi Gurusinghe
Temporary demonstrator
Department of medicine
Faculty of medicine
Uva Wellassa University of Sri Lanka

Snr. Prof. Muditha Vidanapathirana
Dean
Faculty of medicine
Uva Wellassa University of Sri Lanka

(11) Date of implementation

22/10/2026