Principal Investigator: _____ ***Date Approved:*** _____

Venipuncture

Venipuncture is the collection of blood from a vein, usually for laboratory testing.

Personal Protective Equipment & Supplies		
 **Personal Protective Equipment**	 **Venipuncture Supplies**	 **Waste Disposal**
• Non-latex exam gloves	• Alcohol swab/pad • Vacutainer(s) • Sterile double-ended safety needles or butterfly needles • Non-latex tourniquet • Gauze and tape/adhesive bandage	• Sharps container • Biohazard container

Training & Requirements

Any individual performing venipuncture complete the following training:

- TWU Bloodborne Pathogens training*
- CITI Human Subjects Research training**
- First Aid/CPR/AED training**
- TWU Venipuncture training (both online and hands-on portions)**

Though third-party certified phlebotomists contracted by individual studies are not required to complete TWU training, they must sign a TWU IRB confidentiality agreement if contracted.

Additionally, individuals performing venipuncture must have another trained person present to provide assistance, if needed.

*If individuals performing venipuncture are employed by the university (e.g., Graduate Assistants), they must be offered a Hepatitis B vaccine within 10 days of employment. If these individuals are non-paid students or volunteers, they must provide documentation of their vaccination to their PI and/or department before performing venipuncture.

**Nursing students, registered nurses, and others administering venipuncture as part of their normal scope of work or education are exempt from these indicated training requirements.

Online training courses for employees may be found in the TWU employee learning management system, Bridge. Bridge is also the system that tracks training requirements and completion records for employees, including student assistants. Supervisors can view employee completion, assign training, create reports, and track analytics in Bridge; follow this link to the TWU Knowledge Base article for more information.

A similar learning management system has been set up for volunteers and students who are not employees, but who may need to complete online training courses. **Access to this system is via invitation and requires the creation of separate login credentials.** Email risk@twu.edu for information on how to set up student training accounts.

Possible Risks to Participants

Drawing blood from a vein may cause discomfort, bruising, excessive bleeding, or infection at the site of puncture. Light-headedness or fainting may occur.

Procedures

1. Assemble all equipment and supplies (see list above), including vacutainers pre-labeled with participants' names and/or their study ID numbers.

2. Wash hands thoroughly and put on exam gloves. When multiple participants are undergoing venipuncture procedures, hands should be cleaned with soap or hand sanitizer and exam gloves should be changed between participants.

3. Confirm the identity of the participant by asking their name and/or their study ID number.

4. Explain the procedure to the participant and remind them that they can end the procedure at any time for any reason.

5. Position the participant so that they are seated or reclined comfortably, with their arm extended to form a straight line from the shoulder to the wrist. The participant's arm and elbow should be firmly supported and not bent. Additionally, the participant's legs should not be crossed.

6. Check both arms to identify a vein, preferably one which runs along the inner part of the forearm close to the surface of the skin. Use of the median cubital vein is preferable; other options include the median cephalic or the median basilic veins. Select the largest, fullest vein.

7. Palpate and trace the path of the chosen vein several times with your gloved index finger.

8. Open packaged equipment and supplies in the presence of the participant so that they can see that these items come from original, sterile packaging.

9. Tap the vein at the site of the draw with your index finger and third finger; this will help the vein to dilate.

10. Apply tourniquet three to four inches (3" to 4") above the desired site of puncture.

11. Ask the participant to form a fist, holding it tightly. They should avoid opening and closing their fist.

12. Clean the draw site with an alcohol swab (70% isopropyl alcohol) in concentric circular motions, moving outward from the center to avoid spreading oils and microbes (for 15-30 seconds), and allow the alcohol to air dry (15-30 seconds). **DO NOT** touch the venipuncture site again; do not blow or wave to help the site dry more quickly.

13. At this point and throughout the procedure, verify that the participant feels well. If the participant does not feel well, immediately end the procedure (see steps 20 through 26) and follow the steps outlined in the *Dealing with Lightheadedness or Fainting* section.

14. Just before needle insertion, ask the participant to take a deep breath. This helps keep them occupied and provides a distraction.

15. Engage the person in conversation as the needle is inserted and throughout the procedure to create a diversion.

16. Using a sterile needle, gently insert the needle into the vein at an angle roughly 15 degrees parallel to the vein, making sure that the bevel of the needle is pointing up. To prevent a hematoma from forming, only the uppermost wall of the vein should be punctured. **It is important to be sure that the needle completely penetrates the uppermost wall of the vein.** Failure to do this may allow blood to leak into the soft tissue surrounding the vein by way of the needle bevel.

17. Push the vacutainer tube into the holder so that the needle punctures the tube top. Blood will flow into the tube and stop when it is full. Tell the participant to relax their fist. Gently remove the collection tube and repeat as necessary. As each tube is removed from the holder, gently rotate the tube to mix blood with additives in the tube. Keep the holder steady to avoid unintentionally pushing the needle too far into the vein.

18. Vacutainers should be used in the following sequence, based on Clinical and Laboratory Standards Institute guidelines, to limit cross-contamination:

    a. Blood culture tube or bottle (e.g., clear closure)

    b. Sodium citrate tube (e.g., blue closure)

    c. Serum tubes, including those with clot activator and gels (e.g., red, red-speckled, gold closures)

d. Heparin tube with or without gel (e.g., dark green, light green, speckled green closures)

e. EDTA tube with or without gel separator (e.g., lavender, pearl, pink closures)

f. Sodium fluoride/potassium oxalate glycolytic inhibitor (e.g., gray closure)

19. If the venipuncture is not successful, a second attempt can be made on the other arm. If the second attempt is not successful, the procedure should be terminated.

20. When the last vacutainer tube is filling, release the tourniquet. Remove the collection tube from the holder. Gently remove the needle at the same angle it was inserted.

21. Immediately discard the needle in the designated sharps container.

22. Using gauze, apply firm pressure to the venipuncture site for 2 minutes or until bleeding stops. If willing, the participant can assist in applying pressure to the site.

23. Apply tape and gauze or a bandage to the venipuncture site and discard used gauze in the biohazard container.

24. Remove gloves and wash hands.

25. Provide the participant with a take-home *Venipuncture Information Sheet*.

26. Advise participants to consult with a primary care provider and inform the investigator if any complications develop at the site of venipuncture.

Dealing with Lightheadedness or Fainting

Individuals having venipuncture may experience lightheadedness or fainting (sudden transient loss of consciousness with concurrent loss of postural tone). This usually results from any mechanism that decreases cerebral blood flow. The common faint is often precipitated by fear, anxiety, or low blood sugar levels due to prolonged fasting and may be accompanied by dimming vision, sweating, nausea, and loss of balance.

If the participant feels lightheaded or faint

- Remain with the participant and summon help from a colleague.
- Help the participant lie down and raise legs above the level of the heart.
- When the participant no longer feels faint, allow the participant to sit up in place.
- When the participant can tolerate sitting in place without feeling faint, assist them into a chair. Offer sips of juice, if able to swallow.
- When the participant can tolerate sitting in a chair without feeling faint, assist them with standing and walking.
- Retain the participant for 15-20 minutes to verify recovery, then allow them to leave.

If the participant loses consciousness

- Remain with the participant and summon help from a colleague.
- Attempt to wake the participant by loudly calling their name and briskly tapping their shoulder. If the participant is unresponsive and not breathing, or not breathing normally (e.g., only gasping), have a colleague call 911 and obtain the AED.
- While 911 is being called and the AED is being obtained, check for responsiveness and breathing for no more than 10 seconds.
- If there is no breathing and participant is unresponsive, or unsure, begin and continue CPR until the AED arrives. Properly position and utilize the AED and follow any prompts. Continue CPR as directed by the AED.
- When emergency responders arrive, continue to provide care and supply information as needed until they have assumed responsibility for the participant.

File an incident report

- If the person performing the procedure is not the PI for the study, they should immediately inform the PI of the incident and ensure that the procedures outlined in the protocol are followed.
- Incidents must be reported verbally or in writing to the Institutional Review Board (IRB) office within two (2) working days of the incident (940-898-3378 for Denton and Dallas; 713-794-2480 for Houston; or irb@twu.edu).
- A completed IRB Incident Report must be submitted to the IRB within five (5) working days of the occurrence. Legacy studies should submit a completed IRB Incident Report to irb@twu.edu with the PI's name, campus, and protocol number in the subject line. For studies submitted through Cayuse, an incident report should be submitted through the Cayuse system following the Incident Report Submission instructions.

Dealing with Excessive Bleeding

Excessive bleeding at the venipuncture site may occur. Causes may include laceration of the vein, excessive tourniquet pressure, or failure to apply enough pressure after withdrawal of the needle.

- If excessive bleeding occurs, apply firm pressure at the site for several minutes with gauze, bandages, or a clean cloth.
- If the gauze, bandages, or cloth become soaked with blood, add additional bandages and maintain pressure. Do not remove soaked bandages.
- If the bleeding is not controlled or if bleeding occurs in spurts (suggestive of arterial bleeding), maintain pressure on the site and:
    - Call 911 or have a colleague call 911.
    - The individual placing the call should verbally direct emergency responders to their precise location on campus. If a colleague is available, the colleague should then go to the front of the building to help guide emergency personnel to the room.
    - If there is time, alert TWU Department of Public Safety (Denton: 940-898-2911, Dallas: 214-689-6666, Houston: 832-870-6128).

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Bloodborne Pathogen Exposure Incident

The following is a summary of the required procedures when an employee or student has an exposure incident. For complete instructions, refer to the Post Exposure Incident Evaluation and Follow-Up section of the TWU Bloodborne Pathogens Exposure Control Plan.

Following an exposure incident, all of the following must be completed:

1. Cleanse the wound and surrounding area with soap and water (for a puncture, cut, or similar incident) and/or flush eyes, nose, or mouth with copious amounts of tap water (for a splash to the face).
2. Report the incident to the exposed individual's supervisor immediately, regardless of the location or time the incident occurred. Upon notification, the supervisor should notify the Worker's Compensation Coordinator in the Office of Human Resources at (940) 898-3555 immediately if the individual is an employee.
3. Exposure incidents should be considered urgent medical concerns. The supervisor of the exposed individual must ensure that they receive immediate medical attention. The CDC states that post-exposure incident preventive medications are most likely to be effective if administered as soon as possible after the exposure (within hours of the incident, not days). The exposed individual must immediately be sent to a nearby hospital or clinic to receive the post-exposure evaluation described below. Students may be sent to Student Health Services in Denton or to a local clinic or hospital. Employees must be sent to a clinic or hospital within the network specified by the University (visit TWU's Bloodborne Pathogens webpage for more information).
    a. The exposed individual must receive a confidential medical evaluation and follow-up exam, including identification and documentation of source individual, collection and testing of blood, post-exposure prophylaxis when medically indicated, and appropriate counseling regarding infection status/results of tests/necessary precautions.
    b. The information on the TWU BBP Exposure Incident Reporting Form must be provided to the healthcare professional providing the medical evaluation as

soon as possible (but do not delay sending the exposed individual for treatment). This may be accomplished verbally or by using the form, but all information on the form must be provided.

4. The exposed individual's supervisor must obtain and provide the individual with a copy of the medical provider's written opinion within 15 days of completion of the evaluation. This opinion must be limited to the items listed on the TWU Medical Provider's Written Opinion Form.
5. Employees and their supervisor(s) must complete several required injury/incident forms and submit them to TWU Human Resources as soon as possible after the employee receives medical care. The forms can be obtained from the TWU Human Resources website, or by contacting the Worker's Compensation Coordinator at (940) 898-3555.
6. Students can submit a claim for post-incident medical care under the BBP insurance program.
7. If the exposed individual is an employee who has not previously been offered the Hepatitis B vaccination (deferred vaccination position), the individual must be offered the vaccination within 24 hours. This includes any incident where they render assistance, even if they themselves have not had an actual exposure incident and may not require full medical evaluation.
8. If the incident involved a percutaneous injury from contaminated sharps, the DSHS "Contaminated Sharps Injury Reporting Form" must be completed by the supervisor and mailed to the local health department (with a copy to Risk Management) within 10 days of the incident.

By signing and dating the log below, individuals are certifying that they have been informed and understand this Standard Operating Procedure and agree to abide by its contents.

Name	Signature	Date

Venipuncture Information Sheet

Please keep this information sheet accessible until your venipuncture site has fully healed.

General Care

Keep the gauze or bandage on your blood draw site dry for several hours, until the site has had adequate time to heal. You may change this gauze/bandage, if necessary.

Potential Complications

If you experience any problems with your venipuncture site, seek medical attention and notify your contact for the research study so that they can file the appropriate reports within Texas Woman's University.

Excessive Bleeding

A small amount of bleeding is normal after blood is drawn, but this bleeding should stop after firm pressure has been applied for several minutes. If you have continued bleeding from the site, continue to apply firm pressure for a few more minutes. If the bleeding persists, seek medical attention.

Infection

The risk of infection following blood draws is minimal but should be taken seriously. Signs of infection include:

- Excessive pain, warmth, redness or swelling at the site
- Oozing/drainage from or around the site
- Fever, chills, fatigue, increasing aching or stiffness in your joints

Nerve Irritation

Irritation of a nerve may occur during blood draws. Signs of nerve irritation include:

- Localized numbness
- Localized tingling
- Localized weakness

If you experience any of the above signs, you should contact your primary care provider for advice. If you do not have a primary care provider, proceed to an urgent care clinic or emergency room for immediate medical attention.