

SAFETY TIPS FOR CLINICAL RESEARCH PERSONNEL: SAMPLE COLLECTION & TRANSPORT

Infectious agents that may be present in human body fluids may be spread from person-to-person **indirectly** through hygiene breaks, or **directly** through injuries involving contaminated sharp items or splashes to the eyes, nose or mouth. This document outlines practices that will minimize your exposure risk to human body fluids when collecting and transporting human-derived materials (samples) to support clinical research protocols.

1. Know before you go.

- a. Review your protocol thoroughly ahead of time and ensure that you have assembled all sample collection and safety-related supplies that you will need before your sample collection appointment. Ensure that all items are in good working order.
- b. If your role will require you to enter a patient care area, ensure that you have all the information that you need regarding additional safety practices or logistical restrictions. Your PI or Study Coordinator should be able to assist with this.
- c. Whenever permitted by protocol, do any manual tasks required for the sample collection (such as preparing labels, organizing forms, etc.) ahead of time. In doing so, you will reduce the potential to inadvertently handle these items once you are wearing gloves and handling sample materials.

2. Contain samples to protect yourself and others.

- a. When planning your sample collection and transport tasks, consider all the ways that a release of materials could occur and adopt the use of devices that would contain a spill. For point of collection activities, work over a tray or plastic backed disposable pad. Adopt practices or use devices (such as racks) that will keep primary containers upright when protocol permits.
- b. For non-sharps procedure waste collection (i.e., gloves, packaging, tips, towelettes, etc.), line a small, solid-walled container constructed of cleanable material (i.e., plastic) with a small biohazard bag (zip-loc style recommended). For ease of transport, select a container with a secure lid. Deposit wastes directly into the lined container as generated. At the conclusion of procedures, and after disinfection is complete, securely close the bag. The waste bag needs to be placed in a securely closed, solid walled secondary container with a biohazard label for transport to a location where it can be discarded with other biohazardous waste.
- c. For specimen transport, the provisions of [Transporting Clinical Research Samples from Offsite Locations](#) or [Transporting Biological Research Materials on Campus](#) must be followed as applicable to the situation. Additional pointers for sample transport include:
 - If you must transport specimens in a personal vehicle, these materials are subject to Department of Transportation's Hazardous Materials Regulations. You must keep a copy of the [Transporting Clinical Research Samples from Offsite Locations](#) document with your materials while in transit.
 - If your samples need to be kept cold, avoid the use of wet ice and place ice packs in a zip-loc style bag to minimize the potential for condensation in the container.

- If your outer transport container does not have a positive means of closure, secure it closed for transport. Packing tape or straps are good alternatives.
- If your outer transport container does not have a gasketed seal (some may not, especially if dry ice is necessary), then ensure that primary containers are contained in a closed plastic bag.
- Don't use double-bagging, Styrofoam containers or cardboard boxes as a substitute for a solid-walled, cleanable, securely closed secondary container. The only exception to this would be a scenario where your study protocol permits you to package samples at the point of collection for immediate shipment. If this scenario applies, you should be currently IATA-trained and certified to ship clinical samples. See this [link](#) for more information regarding shipping requirements.

3. **Wear personal protective equipment (PPE) suitable for the task at hand.**

- Minimally, all sample collection tasks will require the use of fluid-resistant disposable gloves. Make sure that you have gloves available in your size. Also, have at least 2 pair more than you will need to perform the procedure.
- In the case of collecting or handling samples from a known infected source, double-gloving is recommended if technically feasible. By double-gloving, you can easily reduce contamination spread by removing the outer layer after the sample has been collected. This will allow you to continue with sample handling procedures without having to wash hands and re-glove for the remaining steps.
- Don't wear gloves in public areas if possible. If you are carrying a transport container and prefer to handle that with a gloved hand, ensure that your other hand is not gloved so that you do not inadvertently touch door handles, elevator buttons, or common contact surfaces with a gloved hand. Don't handle your cell phone or any other personal items with gloved hands. NOTE: See VUMC Infection Control Guidance: Clinical Personnel (PPE and hygiene) link at end of this document for more information regarding SARS-CoV-2 PPE requirements if this applies to your studies.
- Always wash your hands (preferably with soap and running water) after glove removal. Collect used gloves in a biohazard bag for disposal.**
- Additional PPE may be required depending on the task. Safety glasses and a body covering that is impermeable to body fluids should be worn if any sample handling steps at the point of collection may create a splash or spray.

4. **Don't get stuck: practice sharps safety.**

- If your collection activities will require the use of a sharp (especially needle/syringe sets), ensure that you fully understand the device design and are proficient in using the device in a way that is safe for you and the subject. Seek assistance from your PI or designated trainer for the study when in doubt.
- Place a sharps container (in good working order and not overfilled) within arm's reach before assembling a sharp for use. Discard the sharp immediately into that container after use.
- Do not bend, break, recap or re-sheath a sharp device. Putting physical stress on a sharp device or moving your hands in a manner that will put your non-dominant hand in front of

the blade or needle can result in injury. Learn more about sharps safety practices at this [link](#).

5. Prepare for the unexpected (spills and exposure).

- a. While the potential for spills and exposures may seem low, these can occur during sample collection and transport, especially if blood draws or bulk body fluid samples are part of the study. Reduce your spill potential by always using secondary containers as outlined in point 2.
- b. Ensure that you have spill cleanup supplies assembled and available that would be sufficient and appropriate for the largest spill that could occur. Minimally, supplies should include the following:
 - extra biohazard bags,
 - extra fluid-resistant gloves,
 - safety glasses,
 - paper towels or other absorbent,
 - extra disinfectant, and
 - a small broom and dustpan.

More information about biomaterial spill kit assembly and procedures can be found at this [link](#).

- c. If during the course of your sample collection and transport activities an incident occurs that exposes you to human body fluids through a sharps-related injury or splash to the eyes, nose or mouth, take the following steps:
 - Immediately flush/cleanse the exposure site with running water (and soap if it was a cut or puncture) for 15 minutes. Apply first aid if needed.
 - Notify your supervisor (if available) and report immediately to the Vanderbilt Occupational Health Clinic (7 am to 5:30 pm; Monday through Friday), or Vanderbilt Adult Emergency Room (if outside the OHC hours of operation).
NOTE: If you will be collecting samples from locations outside the metro Nashville area, you will want to verify with your PI or Study Coordinator ahead of time what your options are for exposure follow up.

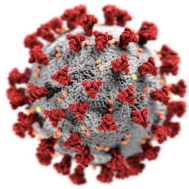
6. Leave no contamination behind. (Disinfection)

- a. At the conclusion of any procedures where samples were collected or handled, all “touch points” should be cleaned and disinfected. This includes surfaces where the samples, wastes and sharps container (if applicable) were placed and any items in the immediate area that may have been impacted. Because of this, it’s important when setting up your “workstation” to select an area with minimal non-essential or personal items and to remove items that cannot be easily cleaned and disinfected (like cloth-covered furniture).
- b. Use a ready-to-use disinfectant that is EPA-rated for destruction of viruses including SARS-CoV-2. Examples of listed products include: Super Sani-Cloths, Virex and most Lysol products. You can determine the rating of your product by cross-checking the EPA registration number from the product label with EPA’s list at this [link](#).

- c. Disinfection is only effective if visible contaminants are removed first. Remove visible contamination, then apply disinfectant and leave it wet for the contact time stated on the product label.
- d. Remember that most disinfectants have a hazardous chemical component. For your safety and the safety of your subjects, ensure that you:
 - Review the Safety Data Sheet (SDS) for the product that you are using and have a copy available if questions arise.
 - Wear gloves when handling the product.
 - Close the container and store/transport this in an upright fashion (secondary container/spill containment is also advised).

COVID-19 Considerations

If you are collecting and/or transporting samples to support a study involving subjects who are known or strongly suspected to have COVID-19, visit these links for additional considerations that may apply:



VICTR COVID-19 Guidance: Human Subjects Research

<https://victr.vumc.org/covid-19-guidance-for-the-vanderbilt-research-community/>

VUMC Infection Control Guidance: Clinical Personnel (PPE and hygiene)

<https://www.vumc.org/coronavirus/clinical-guidance>

VEHS Biosafety Guidance: COVID-19 Sample Handling in Research Labs ([Biosafety Action Grid](#))

<https://www.vumc.org/safety/bio/emerging-infectious-agents>

FULL LINKS MENTIONED IN THIS DOCUMENT

Transporting Clinical Research Samples from Offsite Locations

https://www.vumc.org/safety/sites/default/files/public_files/bio/materials-of-trade-exceptions-clinical-research.pdf

Transporting Biological Research Materials On Campus

https://www.vumc.org/safety/sites/vumc.org.safety/files/public_files/bio/transport-bio-on-campus.pdf

Clinical Specimens Shipping Training Requirements

https://www.vumc.org/safety/training/biosafety-training#Ship_Bio-Clinical

Using Sharps Safely in Research

https://www.vumc.org/safety/sites/vumc.org.safety/files/public_files/bio/using-sharps-in-lab.pdf

Responding to Spills and Personnel Exposures Involving Biological Materials

https://www.vumc.org/safety/sites/vumc.org.safety/files/public_files/bio/responding-to-bio-exposures-and-spills.pdf

EPA List N: Disinfectants for Use Against SARS-CoV-2

<https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>

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