

## Echo Scanning Barrier Drape Procedure

Theodore J. Kolas, MD; Diane Eberhart, RDCS; Kristin Bradsher, RDCS

University of Michigan

Written March 31, 2020

Updated April 9, 2020

**Background:** Echocardiography laboratories worldwide have been developing processes to safely scan patients with known or suspected COVID-19 during the pandemic crisis. We are sharing a process that we are using at the University of Michigan to try to additionally reduce sonographer risk, in case anyone else also finds it useful. This process is a barrier technique in COVID-19 patients that was adapted from a picture credited to Dr. Stuart Moir and Michelle Anderson from Melbourne, Australia, which was posted online on a Mayo clinic slide by Dr. Garvan Kane. The process we are using is described below, and we have made an attached video illustrating it.

**Description:** We use a clear plastic drape (the initial ones that we used were C-arm covers from the cath lab, but we are now using nonsterile alternatives). We connect it to two IV poles set up parallel to the bed on whichever side the sonographer will scan from, using two Z clips obtained from the OR. This sets up a hanging clear plastic drape between the patient and the sonographer/machine, which they reach under to scan. The sonographer would still have full personal protective equipment (PPE). This technique can also be implemented with other procedures, including other ultrasound scanning procedures or non-scanning procedures such as device interrogations, etc.

### **Step-by-step Instructions:**

1. Obtain a clear plastic drape: Initially, we used a “C-arm Image Intensifier and Mobile X-ray Drape” that is a clear plastic sheet which is used to cover the C-arm in the cath lab. Its dimensions were 42 inches by 72 inches. Subsequently, we have been using a nonsterile alternative called a set-up cover with dimensions of 44 inches x 82 inches.

Prior to going to the patient’s room:

- a. We remove the drape out of the package
  - b. We place the drape into a clean plastic bag (such as a patient belonging bag) for transport without getting it dirty
  - c. We also get two large Z clips that are blue plastic clamps used in the OR by anesthesia to secure drapes to IV poles, and place them in the same bag for transport
2. When you get to the patient’s room, before entry, make sure there are 2 IV poles available (or something else the drape could be clipped to or hung on). The patient’s bed itself may have an IV pole that can be raised up from a folded position; this could be one of the poles used for hanging the drape. Do not enter the room to check, however, unless the next step is performed first.

3. Prior to entering the room, all the proper preparation for entry of a COVID-19 patient's room is undertaken including appropriate donning of PPE. This includes the appropriate mask, eye protection, gown and gloves.
  4. Once the room has been entered with the echo equipment and the bag with the drape and clamps, the two IV poles (or other supports) are positioned about 6 feet apart in a line parallel to the side of the patient's bed, next to the bed on the side the sonographer will be scanning.
  5. The drape is then hung from the two IV poles (or other supports) using the Z clips, positioning the drape so that the bottom extends to just below the level of the top of the mattress.
  6. Scanning can then proceed with the sonographer reaching their arm holding the transducer underneath the drape, so that only the covered hand and arm are on the side of the drape toward the patient.
  7. After the echo is completed, the drape is unclipped and discarded into the trash before removing PPE and before leaving the room. The clips are cleaned with the same antiviral agent as the echocardiography system.
  8. Careful doffing of PPE is undertaken according to guidelines after the procedure is completed.
- This barrier drape should not be considered as a substitute for proper PPE for the sonographer, nor as a substitute for proper cleaning and disinfection of the ultrasound system, transducers, and ECG wires. Follow manufacturer's instructions, as well as your facility's policy on cleaning and disinfection of the ultrasound system after use on potentially infectious patients.
  - This technique can be used for left-handed scanners and right handed scanners.
  - This technique could also potentially be used for other procedures such as device interrogations or other ultrasound scanning procedures to minimize exposure, while still taking all appropriate recommended precautions for those specific procedures.
  - Please see accompanying video illustrating how the technique is performed. We also recommend practice setting up the drape prior to implementing it with a patient.

For correspondence or questions, please contact:

Theodore J. Kolas, MD, FACC, FASE  
Professor of Medicine  
Director, Adult Echocardiography Laboratory  
University of Michigan  
Ann Arbor, Michigan, USA  
[tkolias@umich.edu](mailto:tkolias@umich.edu)