



EBOLA PATIENT PREPARATION FOR TRANSPORT, PATIENT MOVEMENT & DECONTAMINATION PROCEDURES - Updated November 11, 2014

Scheduled Ebola Patient Transport

For information about the Ebola virus and modes of transmission see the Public Information Tab at www.amr.net/Ebola

CALL PRE-SCREENING/PLANNING

It is possible that AMR or other EMS organizations might be asked to transfer a Person Under Investigation ("PUI) or known Ebola ("Known Ebola") patient between healthcare facilities. To assure patient, public, and employee safety, such a transport must be carefully planned. The steps below describe the process local practices should follow:

- During the prescreening and planning process place a call to the **EVHC Clinician Hotline at 855-448-1742**. The hotline is staffed 24/7 by Evolution Health Nurse Navigators in the Medical Command Center in Dallas who have access to Ebola-related information, protocols and resources. They will be valuable resources to assist you in completing planning for the transport.
- Ask for or coordinate a **phone discussion between the treating physician and AMR's Chief Medical Director**. The purpose of this call is to clarify the patient's diagnosis and discuss the patient's acuity and treatment plan. It will also be important to establish that the patient's condition is stable enough for transport.
- Identify hospital personnel who will be planning the transfer, accepting the patient, and coordinating disinfection and cleanup following the transfer. Have contact numbers on file for each.
- As with any inter-facility transport, confirm the treatment that the patient will need to receive during transit (medications, ventilator, etc.) and assure that it is within the scope of practice for your crew. If necessary request that the hospital provide an appropriately trained clinician to provide "out of scope" care during transport.
- Assure that the receiving facility is aware of the patient's status and has the appropriate team to receive the patient. Confirm the timing of the transport.
- Identify Safety & Risk and Clinical Leaders that will supervise vehicle preparation, monitor transfer, and provide information and support to crews following the transport.

- Secure appropriate equipment and supplies for the transport, as listed below. This may take up to 24 hours. As you plan for the transport, consider disposables if needed. For example, disposable radios are available from the Regional Cache Sites. An Ebola Caregiver PPE kit is available in Procureit. Gloves and respirators should be obtained from the ambulance. Duct tape and plastic sheeting can be obtained locally or from the Regional Cache Sites.
- **Ebola Virus Disease PUI Personal Protective Equipment (“EVD – PPE”) Kits are available from McKesson through ProcureIT using the following item numbers. Note these kits will not include the necessary respirators.**

Item Number	Description
934904	KIT, E-PPE MED (25/BX)
934902	KIT, E-PPE LGE (25/BX)
934903	KIT, E-PPE XLG (25/BX)

PERSONAL PROTECTION

Various means of protection will include protecting the Caregiver from all routes of entry through the use of PPE, barriers in the patient compartment of the ambulance, proper decontamination of the ambulance/equipment and proper disposal of the waste generated. The following guidelines will be observed during these processes.

- Isolation of the ambulance surfaces in the Patient Compartment while making available necessary patient care equipment.
- Wearing of appropriate PPE for a Known Ebola patient available from regional cache sites and deployed based upon local planning:
 - Ebola Virus Disease – Personal Protective Equipment (“EVD - PPE”) with the N-95/P-100 and Full Face Shield
 - Fluid impermeable coveralls without integrated hood
 - Single use (disposable) hood extending to shoulders
 - Single use disposable shoe covers, hi-top booties
 - One Single-use full face shield
 - Single-use N-95 or P-100 Respirator
 - Pair of nitrile gloves - regular length
 - Pair of nitrile gloves - extended length
 - EVD – PPE with the Powered Air Purifying Respirator (“PAPR”)
 - Fluid impermeable surgical type coveralls without integrated hood
 - Single use disposable shoe covers, hi-top booties
 - Pair of nitrile gloves - regular length

- Pair of nitrile gloves - extended length
 - PAPR Assembly: PAPR belt, Double-bib Hood, Breathing Tube, Filter Cartridge, Battery Charger
 - Note: PAPR is reusable if decontaminated properly. Battery Charger is reusable.
- Prudent hand hygiene including hand washing and/or alcohol based hand rub.
 - Avoid aerosol-generating procedures, such as airway placement, administration of nebulized medications, tracheal suction, CPAP, etc. If it is necessary to perform these procedures, do so after the unit pulls to a safe location and stops.
 - If possible avoid starting IV access during transport. If necessary, venous access should be obtained after the unit pulls to a safe location and stops. Careful attention should be taken with the disposal of all sharps in the sharps container.

**For information on the PPE needed for a PUI patient, see AMR Personal Protective Equipment Guidelines for Day-to-Day Use, Persons Under Investigation and Known Ebola Patients dated October 28, 2014.

AMBULANCE PATIENT COMPARTMENT PREPARATION

Ambulance preparation will be done with the purpose of segregating the cab from the patient compartment and covering the cabinetry/shelving, ceiling, seating and floor with an impermeable barrier. There are two options for preparing the patient compartment of the ambulance for transport. Initial test drills have shown this process to take 3-3 ½ hours on first run. Use of the Ebola Virus Disease Mobile Kit takes approximately 30 minutes.

Supplies:

Option 1 - Ambulance Patient Compartment Wrap

- 6 mil clear plastic sheeting (10' X 100')
- Duct Tape (Note duct tape has a rating scale for adhesiveness and weatherability so choose a 4 or higher for adhesiveness and weatherability based upon local climate humidity factors.)
- Scissors
- Large plastic sheeting if needed for seat at patient's head (Jump Seat/Captain's Chair)

Option 2 - Ebola Virus Disease ("EVD") Mobile Kit

- 6 mil clear plastic sheeting

- Duct Tape (Note duct tape has a rating scale for adhesiveness and weatherability so choose a 4 or higher for adhesiveness and weatherability based upon local climate humidity factors.)
- Scissors
- Large plastic sheeting if needed for seat at patient's head (Jump Seat/Captain's Chair)
- Five 10" lengths of ½" PVC pipe
- PVC couplings, T connectors and 90 degree corners with glue
- Cutting tool for PVC pipe

Procedures for Option 1 - Ambulance Patient Compartment Wrap:

All sheeting should overlap prior sheets of plastic by a minimum of 1 inch. All seams should be sealed completely by duct tape.

1. From the patient compartment, seal openings to the cab using plastic sheeting and duct tape.
2. Place plastic along the top edge of the wall and attach with duct tape.
3. Any overlapping layers of wall sheeting should overlap with the upper portion over the lower portion to prevent any body fluid from leaking between sheets by gravity. Wall sheeting will continue down and over bench and jump seats being formed to the seat using folding, cutting, taping etc.
4. Leave openings around ventilation ports to allow proper air flow and exchange.
5. Cover the ceiling of the patient compartment with plastic sheeting and affix with duct tape to the top of the wall sheet.
6. Place sheeting on the floor of the rig and affix to bench seat, jump seat and walls to create a slight bowl affect in an effort to channel any body fluids towards the center of the floor which will cause fluids to collect in one area. The sheeting on the sides should overlap the floor sheeting and be sealed with duct tape to keep fluids flowing down.
7. The gurney antlers will need to be attached through the plastic sheeting on the floor for safe transport of the gurney and patient. Seal these openings generously with duct tape so that all fluids flow to the sheeting on the floor.
8. The gurney side clamp will need to protrude through the side wall sheeting for safe securement of the gurney. Be sure to seal any cut plastic/seams with duct tape to prevent contamination of the wall.
9. Cut slits around gurney arm catch on the floor of the unit to allow gurney to catch when unloading.
10. Cover rear doors with plastic sheeting and duct tape.

Procedures for Option 2 - EVD Mobile Kit

1. Create the POD using the instruction in Attachment A below.
2. Remove all unnecessary equipment from the patient compartment and check for loose items in the gap between the bench seat and the wall.
3. Close all vents.
4. Remove gurney mounts.
5. Test fit the frame prior to install to ensure proper length of support legs and check for any obstructions that would prevent the frame from properly seating to the ceiling.
6. Open the POD pack and set end pieces and vent baffles aside.
7. Place pack on floor of patient compartment and unfold with tape seam facing up, centered, and running forward and aft.
8. Unfold tube and insert frame.
9. Using two people, lift frame to ceiling ensuring it is well seated and back to the rear.
10. Carefully adjust the sheeting as needed to ensure it is centered on the markings made in step 6 of the "creating the POD" section.
11. With one person holding the frame in place, install the shorter support legs on the bench seat side. Place leg base behind the seat cushion and insert top into the appropriate fitting. If measured correctly, a slight bend should remain in the support leg to ensure frame is secured to the ceiling.
12. Install the longer cabinet side supports in similar fashion.
13. Make any adjustments necessary to the sheeting to ensure proper positioning. Sheeting should be smooth and follow the contours of the floor and bench seat.
14. Identify 2 or 3 vents to port into the pod. Cut plastic sheeting around the vents exposing about 1" of wall surrounding the vent for the duct tape to adhere to. Liberally apply tape to secure sheeting and open the vent.
15. Cut appropriate length of the 1" sheeting for the vent baffle. Place duct tape on one end then starting on the ceiling, slide the opposite end over the PVC pipe allowing it to then slide down the wall over the vent. When in proper position, press the duct tape end to the ceiling then secure the two sides to hold in place. Tape the sides in a slight "V" shape to allow adequate slack in the vent to prevent flapping during operation.
16. Reinstall gurney mounts. Remove and install the larger chrome mount as it provides better access to the nuts on the back side. Using one of the 5x5 sheets of plastic, align the edge of the top center with the edge of the top center of the main tube. Roll the two ends together 3 or 4 revolutions and secure with clamp. Do the same on the opposite end (center bottom) this time adding enough rolls to ensure the bottom of the tube is 6" or more above the floor to create a bowl effect in the main tube. From the top clamp, start working the roll around the rest of the seal adjusting the number of rolls you use to accommodate any additional slack and placing clamps

as needed, about 1” apart.

17. Prep the back end on the main tube by securing the plastic sheeting to the back of the patient compartment. This will be to protect the ends during the patient loading process so they do not touch the patient or gurney.
18. Prior to loading the patient, turn on rear exhaust fan and air. Ensure you have adequate airflow through the vents into the POD.
19. Load patient and crew paying close attention to not allow contact with the open end of the plastic sheeting.

GURNEY PREPARATION

Supplies:

- Impermeable mattress cover and Duct Tape

Cover mattress pad with fitted impermeable mattress cover. If no impermeable mattress cover is available then use plastic sheeting and over each end overlapping and sealing with duct tape.

AMBULANCE CAB

Supplies:

- Spare PPE based upon selection for transport as noted in “Personal Protection” section as noted above”.
- Impermeable Decontamination Disposal Sheet
- Multiple Red Biohazard Bags
- Extra Gloves and Boot Covers
- MEDS Computer and other equipment that may be positioned outside the patient compartment.

CREW PREPARATION

EVD patient transports will be done by three person crews. The third crew member “Driver” will assume no patient contact nor enter the patient compartment, so as to remain uncontaminated during the transport and to avoid contamination of the cab area.

Prior to patient contact, each patient caregiver will don the PPE using AMR’s Ebola Donning Procedures while the third crew member assists by both checking for integrity issues, improper fit, exposed body surfaces.

Supplies:

- PPE based upon selection from “Personal Protection” section noted above.

FACILITY ARRIVAL

Driver will notify the receiving facility of arrival and don PPE.

Throughout movement of patient into facility the patient care crew will take steps to prevent secondary contamination of any surfaces, such as avoiding the touching doors handles with contaminated gloves.

Procedure:

1. After notifying receiving facility staff of arrival, coordinate with Hospital staff for the transfer of the patient from the ambulance into the facility.
2. The following items may be considered with regard to the movement of the patient from the ambulance into the facility:
 - The Driver should take all precautions to remain a safe distance from the patient to avoid contamination. The Driver may assist by opening doors and clearing the path for patient movement.
 - The Driver will take decontamination and disposal sheet placing it on the ground at rear of unit with a change of shoe coverings and gloves available for the patient crew.
 - If using EVD Mobile Kit the Driver will remove clean clamps while the Caregiver in the patient compartment supports the rear plastic panel using the attached handle.
 - The Caregiver folds and places the rear panel inside the patient compartment.
 - Any body fluid contamination on gurney wheels will be disinfected with an EPA-registered hospital disinfectant with label claims against non-enveloped viruses (e.g., norovirus, rotavirus, adenovirus, poliovirus).
 - Two disinfectant solutions proven to kill non-enveloped viruses include a 1:10 bleach to water solution allowed to dry for 10 minutes or McKesson's Pro-Tech RTU Disinfectant Cleaner available in ProcureIT through McKesson using these two item numbers:
 - **Item #484484 CLEANER/DISINFECTANT, PRO-TECH RTU 32oz W/SPR (12/CS)**
 - **Item #484483 CLEANER/DISINFECTANT, PRO-TECH RTU 1GL LF (4/CS)**
 - Patient crew will unload patient and then remove current shoe covering, outer gloves and put on clean ones so as not to track potential contamination into the receiving facility. Dispose of used PPE in Red Biohazard Bag.
 - Patient will be transferred into hospital by patient crew at the direction of hospital staff.

- Patient crew will remove and dispose of PPE at the hospital at the direction of Hazardous Materials Personnel, Hospital Epidemiologist, Health Department or after being transported to the designated decontamination site or on the decontamination sheet at the rear of the unit based upon the current transport plan and local regulations. PPE will be removed using AMR's Ebola PPE Doffing Procedures.
- The gurney and all equipment will be considered infectious and handled with the appropriate PPE until properly decontaminated.
- The decontamination sheet, PPE, materials, and equipment will be collected and double bagged with Red Biohazard Bags at the ambulance observing body fluid precautions and disposed of in a properly labelled and hard sided Infectious Waste container.

AMBULANCE DECONTAMINATION

At the request of Health Department or Hazardous Materials Teams the Ambulance should be decontaminated onsite or at a designated decontamination site at their direction. The ambulance may be disinfected by the authorities listed above if requested. Otherwise, the Ambulance will be driven to a designated AMR location for decontamination taking into consideration segregating it from nonessential personnel. Also, consider indoor facility to prevent contaminated materials from incidentally getting blown away or protecting it from weather.

Supplies:

- Impermeable Decontamination Sheet
- Disinfectant proven to kill non-enveloped viruses such as an EPA-registered hospital disinfectant with label claims against non-enveloped viruses (e.g., norovirus, rotavirus, adenovirus, poliovirus) or a 1:10 bleach to water solution allowed to dry for 10 minutes (use bleach and water solution only in well-ventilated area with both rear and side doors open) or McKesson's Pro-Tech RTU Disinfectant Cleaner available in ProcureIT through McKesson using these two item numbers:
 - **Item #484484 CLEANER/DISINFECTANT, PRO-TECH RTU 32oz W/SPR (12/CS)**
 - **Item #484483 CLEANER/DISINFECTANT, PRO-TECH RTU 1GL LF (4/CS)**
- Disposable rags
- Red Biohazard Bags
- EVD Containers or Red Biohazard Containers labelled "Class A Infectious Waste"
- EVD PPE listed above in Personal Protection.

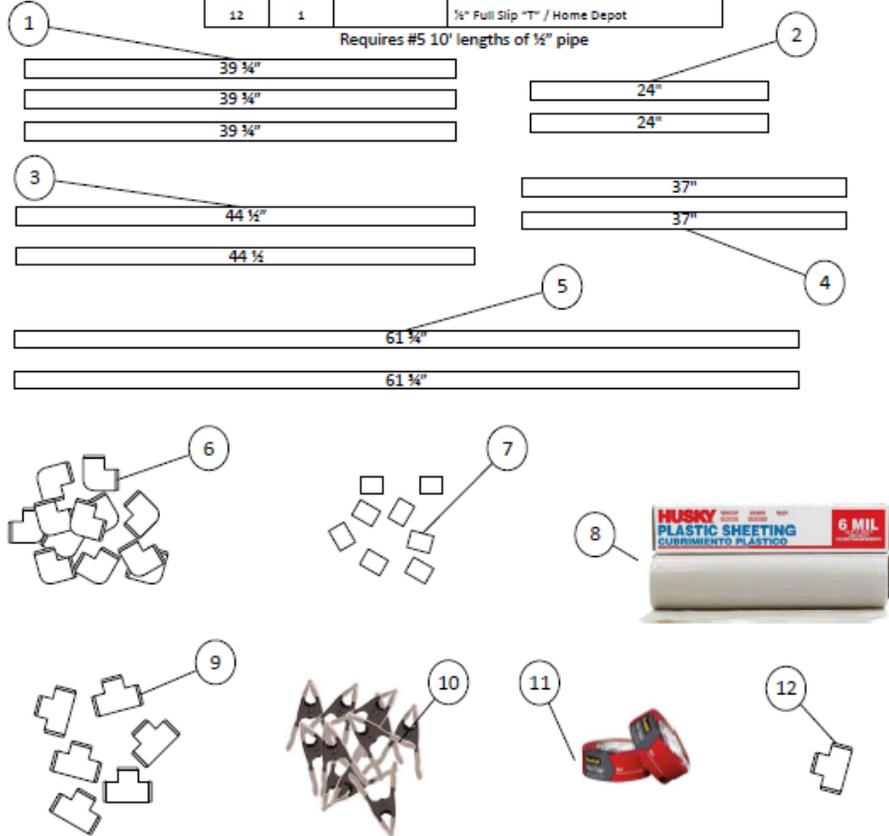
Decontamination Procedures:

1. Don necessary EVD PPE according to AMR's Ebola Donning & Doffing Procedures.
2. Lay impermeable decontamination sheet on the ground at the back of the ambulance and side doors and have Infectious Waste containers available.
3. Clean up any body fluids and double bag (Red Biohazard Bags) cleaning materials placing those materials in Infectious Waste containers.
4. Infectious Waste containers should be containers labelled "Class A Infectious Waste" and maintained separate from all other red bag waste (See Stericycle's Category-A Waste Handling and Packaging Procedures.
5. Double bag (Red Biohazard Bags) and treat bags and all disposable materials/equipment according to Stericycle's Class-A Waste Handling procedures and place into Infectious Waste containers.
6. Place equipment including gurney antlers on decontamination sheet for proper disinfecting.
7. Remove any contaminated materials from equipment and disinfect equipment using recommended disinfectant and place on clean sheet for drying.
8. Properly treat and double bag (Red Biohazard Bags) all contaminated rags/wipes.
9. Remove impermeable barriers from unit and double bag (Red Biohazard Bags) placing those properly labeled Infectious Waste containers.
10. Fold decontamination sheets and properly dispose of in double red bag according to Class-A waste procedures.
11. Place new contamination sheets out.
12. Wipe down all surfaces inside ambulance and outside door handles with recommended disinfectant and dispose of according to Class-A waste procedures.
13. Remove PPE following AMR Ebola PPE Doffing Procedures and dispose of according to Class-A waste Procedures.
14. Using gloves fold decontamination sheets keeping the potentially contaminated top side on the inside of the folds and dispose of according to Class-A waste procedures.
15. Wash outside of ambulance in normal fashion and location using PPE.

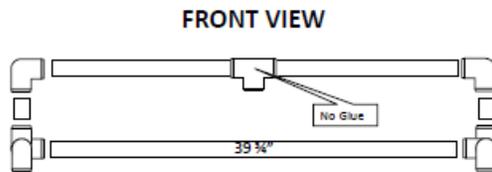
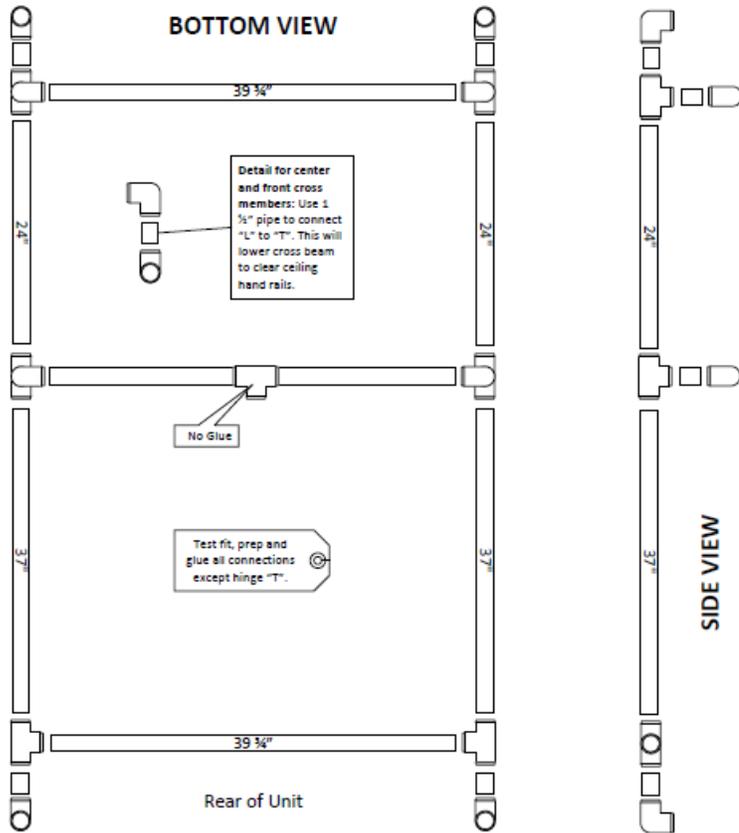
Attachment A – EVD Mobile Kit (Type II Contaminate Isolation Kit)

Type II - Contaminate Isolation Kit
Parts List

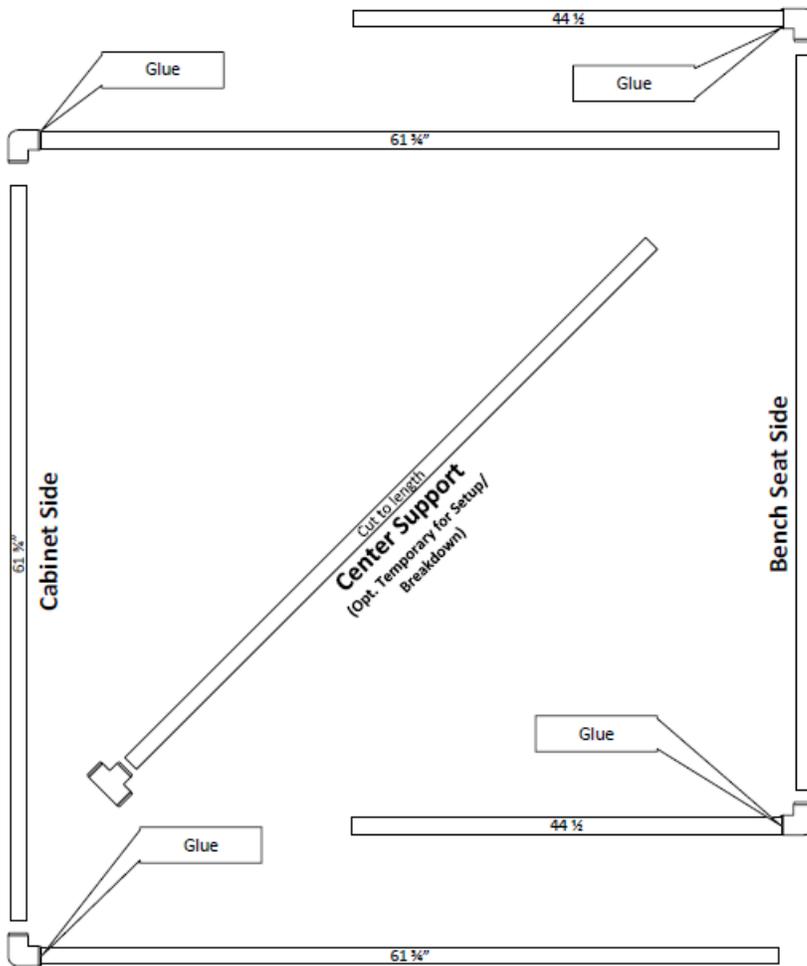
ITEM	QTY.	PRICE EA	DESCRIPTION / SOURCE
1	3		1/2" x 39 3/4" PVC Pipe / Home Depot
2	2		1/2" x 24" PVC Pipe / Home Depot
3	2		1/2" x 44 1/2" PVC Pipe / Home Depot
4	2		1/2" x 37" PVC Pipe / Home Depot
5	2		1/2" x 61 3/4" PVC Pipe / Home Depot
6	12		1/2" PVC 90 deg "L" / Home Depot
7	8		1 1/2" of 1/2" PVC pipe / Home Depot
8	1		10' x 100' 6 mil sheeting / Home Depot
9	6		1/2" PVC "T" / Home Depot
10	30		1" Steel Spring Clamp / Harbor Freight
11	2	\$6.97	2" x 60 yds Duct Tape
12	1		1/2" Full Slip "T" / Home Depot



Type II - Contaminate Isolation Kit
Ceiling Frame

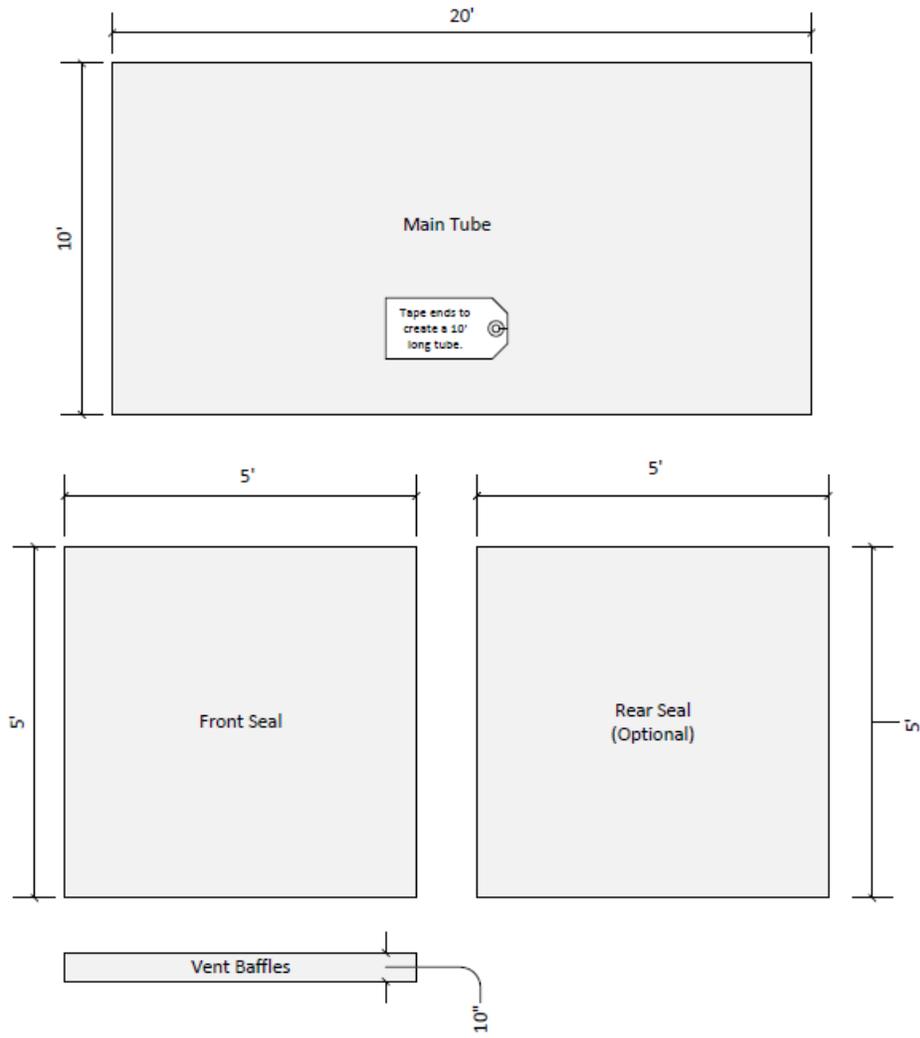


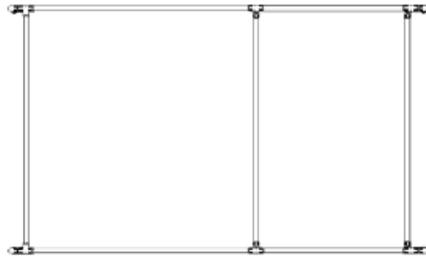
Type II - Contaminate Isolation Kit
Support Legs



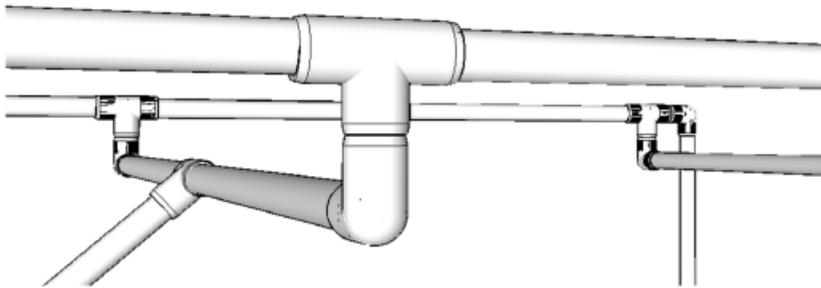
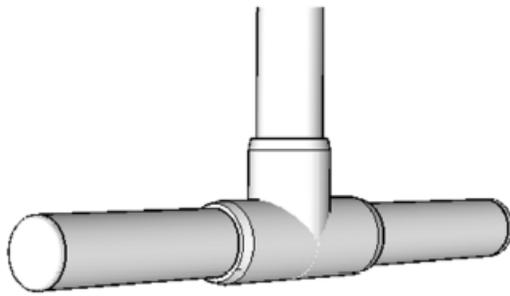
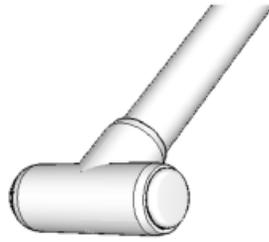
Type II - Contaminate Isolation Kit

Plastic Sheeting





Temporary
Center Support
and hinge not
shown



Creating the POD

Supplies needed: 10 foot wide roll of 6 mil plastic sheeting. Duct tape, scissors.

1. Pull and cut a 20' length of 6 mil plastic sheeting to create a 10' x 20' rectangle. This will be used to create the "tube".
2. Pull and cut a 5' length of 6 mil plastic sheeting then halve to create two 5'x5' squares for the end pieces.
3. Pull and cut a 1' length of 6 mil plastic sheeting. This will be used after install to create protective baffles for the air vents.
4. Lay the 10x20' sheet flat and fold the 10' sections together ensuring a 3" overlap.
5. Seal seam with multiple cross lengths and at least 3 lengthwise runs of duct tape to ensure a good hold.
6. Lay your frame down on the completed tube and center so the seam is running center to the frame. Mark these locations with either tape or sharpie. This will be used as an aid to ensure proper centering during installation.
7. When folding tube for storage or installation you want to do so to both preserve the integrity of the seam and aid in installation.
 - a. Starting with tube lying flat with seam centered on top, fold each 10' end to center and fold the ends to center again. This will leave you with a 2½' x 10' pack.
 - b. Next fold the 2 1/2 'end to center and fold to center again. This will leave you with a 2 ½ "square pack.
 - c. Fold the two 5' x 5' end pieces and the sheeting for the vent baffles, place on the pack then fold the pack in half and secure with tape.

Installation

1. Create the POD using the instruction in Attachment A below.
2. Remove all unnecessary equipment from the patient compartment and check for loose items in the gap between the bench seat and the wall.
3. Close all vents.
4. Remove gurney mounts.
5. Test fit the frame prior to install to ensure proper length of support legs and check for any obstructions that would prevent the frame from properly seating to the ceiling.
6. Open the POD pack and set end pieces and vent baffles aside.
7. Place pack on floor of patient compartment and unfold with tape seam facing up, centered, and running forward and aft.
8. Unfold tube and insert frame.
9. Using two people, lift frame to ceiling ensuring it is well seated and back to the rear.
10. Carefully adjust the sheeting as needed to ensure it is centered on the markings made in step 6 of the "creating the POD" section.

11. With one person holding the frame in place, install the shorter support legs on the bench seat side. Place leg base behind the seat cushion and insert top into the appropriate fitting. If measured correctly, a slight bend should remain in the support leg to ensure frame is secured to the ceiling.
12. Install the longer cabinet side supports in similar fashion.
13. Make any adjustments necessary to the sheeting to ensure proper positioning. Sheeting should be smooth and follow the contours of the floor and bench seat.
14. Identify 2 or 3 vents to port into the pod. Cut plastic sheeting around the vents exposing about 1" of wall surrounding the vent for the duct tape to adhere to. Liberally apply tape to secure sheeting and open the vent.
15. Cut appropriate length of the 1" sheeting for the vent baffle. Place duct tape on one end then starting on the ceiling, slide the opposite end over the PVC pipe allowing it to then slide down the wall over the vent. When in proper position, press the duct tape end to the ceiling then secure the two sides to hold in place. Tape the sides in a slight "V" shape to allow adequate slack in the vent to prevent flapping during operation.
16. Reinstall gurney mounts. Remove and install the larger chrome mount as it provides better access to the nuts on the back side. Using one of the 5x5 sheets of plastic, align the edge of the top center with the edge of the top center of the main tube. Roll the two ends together 3 or 4 revolutions and secure with clamp. Do the same on the opposite end (center bottom) this time adding enough rolls to ensure the bottom of the tube is 6" or more above the floor to create a bowl effect in the main tube. From the top clamp, start working the roll around the rest of the seal adjusting the number of rolls you use to accommodate any additional slack and placing clamps as needed, about 1" apart.
17. Prep the back end on the main tube by securing the plastic sheeting to the back of the patient compartment. This will be to protect the ends during the patient loading process so they do not touch the patient or gurney.
18. Prior to loading the patient, turn on rear exhaust fan and air. Ensure you have adequate airflow through the vents into the POD.
19. Load patient and crew paying close attention to not allow contact with the open end of the plastic sheeting.

Removal

1. Follow AMR guidance on preparation for patient transfer of care.
2. Wearing proper PPE, open rear doors and communicate with crew to coordinate removal of the patient.
3. Remove gurney and / or patient.
4. Remove vent baffles and completely cover vent holes with duct tape
5. Using an appropriate decontamination solution, spray down the interior of the POD and allow drying.

6. Remove and secure gurney mounts for decontamination.
7. Install center support beam and remove the side supports securing them for decontamination.
8. Exit the POD and with one person maintaining hold on the center of the frames rear cross member, slowly pull the bottom of the center support beam towards the rear of the unit allowing the POD to collapse down.
9. Remove the frame and secure for decontamination and disposal.
10. With clean crew assisting from the side door to prevent snags, slowly pull the POD out of the patient compartment onto a waiting decontamination sheet. Starting from the clamped front end, fold and roll the POD and clamps allowing the air to escape from the open end. Place the rolled POD into an appropriate Infectious Waste container and secure for disposal.