

**HACKETTSTOWN REGIONAL MEDICAL CENTER  
CARDIO PULMONARY POLICY MANUAL  
SPECIMEN HANDLING AND ANALYSIS OF ARTERIAL BLOOD GAS SAMPLE-  
HEMORRHAGIC VIRUSES**

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**Effective Date: January 2015**

**Policy No: 4A.023**

**Cross Referenced:**

**Origin: Cardio Pulmonary**

**Reviewed Date: 10/15**

**Authority: Cardio/Pulmonary Manager**

**Revised Date: 01/15**

**Page: 1 of 5**

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**Purpose:** For patients known or suspected to be positive for Ebola or other hemorrhagic viruses such as Lassa Fever, Congo-Crimean Hemorrhagic Fever or Marburg Virus:

- To outline the process for receipt and transport of such specimens
- To assure proper analyzing of the blood sample using the 405/500.

**Policy:**

1. The specimen will be collected by the MD caring for the patient and prepared according to the procedure established in collaboration with the Infection Preventionist.
2. The Emergency Department will notify the Respiratory Therapist of a suspected Ebola patient. The Respiratory Therapist will contact his/her Manager or Supervisor.
3. The specimen will be walked to the Arterial Blood Gas Lab in the Cardiopulmonary Department in a designated, rigid, leak-proof red biohazard cooler, when given the okay that the ABG Lab has been prepped and ready.
4. All Respiratory Therapists involved in the analysis of such specimen will utilize personal protective equipment (PPE) in alignment with tasks being performed and according to training policy and procedure. This includes double gloves, impervious lab coat (blue), face shield, mask, disposable shoe covers and biohazard shield.
5. For preparation and analysis of such specimen, refer to the Appendix: Section IV.B. page 7; Section V.A. page 9.

**Procedure:**

**I. Room Preparation and PPE Donning:**

**1. ABG Lab Room Preparation:**

- The Arterial Blood Gas Lab will be prepared ahead by:
  - Place stand-by analyzer in use by installing new cartridges and performing necessary calibrations (see attached directions), and labeling machine appropriately and placing STOP sign outside ABG room door. Notify other therapists and cardiology (helters) that room can't be used for an hour.
  - Collecting appropriate PPE from designated cabinet for analyzer as well as OBSERVER (see room preparation checklist)
  - Draping the floor with a surgical drape
  - Place red waste basket, lined with 2 red bags on floor drape
  - Clear counter of any unnecessary items (anything but analyzers, computer, printers, biohazard shields, small red biohazard container, hospital approved bleach wipes and alcohol hand sanitizer)

**2. PPE Donning of Analyzer and OBSERVER:**

- Observer MUST be present and prepared to observe all donning steps.
- Checklist needs to be used for each procedure, reading each step and carefully and purposefully performing steps.
- Jewelry, badge, phone, pens, etc. must be removed and placed in appropriate bin.
- Hair should be tied back.
- PPE for analyzer:
  - Perform hand hygiene
  - Don inner pair of gloves
  - Don disposable shoe covers
  - Don disposable blue gown, utilizing thumb hole
  - Don N95 mask, perform safety check
  - Don outer pair of gloves. Extend gloves over the blue gown.

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**Page: 2 of 5**

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- Put on face shield.
- PPE for OBSERVER:
  - Perform hand hygiene, don inner pair of gloves, don disposable shoe covers, don disposable blue gown, don surgical mask and shield, don outer pair of gloves.
- 3. Upon completion of room preparation and PPE Donning, contact Emergency Department that specimen can be delivered to ABG Lab.

**II. Receipt of Specimen:**

1. With the ABG Lab room fully prepared and appropriate personnel donned in the appropriate PPE, receive cooler from Emergency Department (analyzing person)
2. Observer, donned in the appropriate PPE, will obtain ABG label from 'outer' bag and log specimen in to Cerner, according to Cardiopulmonary Policy and Procedure Section 4A, Policy 9.

**III. Analysis of ABG Specimen:**

1. Specimen should be run on back-up analyzer (the one that is not being used at that time for other specimens)
2. During specimen analysis, OBSERVER will read all needed information on patient ABG label to analyzing person. (Analyzing person will then read back and verify all information to OBSERVER while entering information into analyzer)
2. Donned in the appropriate PPE, analyze the specimen according to Appendix: Section IV.B. page 7; Section V.A. page 9. Use of biohazard shield is required.
3. Specimen syringe will be placed in small red biohazard container on counter and specimen bag will be placed in red bagged garbage.
4. After specimen has been analyzed, analyzer will disinfect all work surfaces with hospital approved bleach wipes. (Use multiple wipes to ensure surface is wet for 2 minutes and allow to air dry)
5. Analyzer to remove PPE according to training and HRMC Ebola Management Plan and discard in designated red bag waste container for proper disposal. (See Section IV. PPE Doffing)
6. Analyzer will be decontaminated as per vendor direction and red port changed, upon discharge of patient from facility, to ensure no more samples are to be analyzed.

**IV. PPE Doffing of Analyzer (All PPE is regulated medical waste and must be discarded in red bag waste.)**

Observer **MUST** be present and follow checklist

- Disinfect outer gloves with ABHR (alcohol based hand rub)
- Observer visually inspects for any contamination of PPE or integrity breach in PPE
- Remove outer gloves
- Inspect inner gloves for integrity
- Disinfect inner gloves with AHBR
- Remove face shield- removing from **back** of head
- Disinfect inner gloves with ABHR
- Remove blue gown- grasp from shoulders, pull forward to break ties. Roll gown off wrong side out as not to come in contact with the contaminated side of gown.
- Disinfect inner gloves with ABHR
- Remove inner gloves
- Perform hand hygiene
- Don clean pair of gloves

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**Page: 3 of 5**

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- Remove N95 mask. Touching only N95 elastic bands in back of head- always avoid touching front of mask.
- Disinfect gloves with ABHR
- Remove disposable shoe booties- stepping onto a clean area of the drape
- Disinfect gloves with ABHR
- Remove gloves and perform hand hygiene

**V. Clean Up, OBSERVER PPE Doffing and Waste Removal- Post Specimen Analysis:**

**1. The Observer will, donned in appropriate PPE (plastic blue gown, 2 pair of gloves, surgical mask with shield and disposable shoe covers):**

- Disinfect gloves with ABHR (alcohol based hand rub)
- Pour approximately a cup (no need to measure) of hospital disinfectant or bleach (located in large red garbage can) into small red biohazard container (with syringe in it) (Place small red biohazard container in bagged red garbage can prior to performing this step)
- Using hospital approved disinfectant (purple top) wipes, disinfect lab specimen area for second time (first time performed by analyzer upon completion of running specimen). Use multiple wipes to ensure surface is wet for 2 minutes and allow to air dry.
- Disinfect gloves with ABHR
- Remove disposable shoe covers, stepping onto a clean area of the drape
- Carefully roll up surgical drape from floor and place into red bag garbage
- Disinfect gloves with ABHR
- Follow waste stream procedure (see number 2 below)
- Disinfect gloves with ABHR
- Removing OBSERVER PPE-
  - Perform hand hygiene (ABHR)
  - Remove first pair of gloves
  - Perform hand hygiene
  - Remove blue gown. Grasp front of shoulders, pull forward to break ties. Roll gown off wrong side out as not to come in contact with the contaminated side of gown
  - Perform hand hygiene
  - Remove mask and shield from ties in back of head, avoid touching front of mask
  - Perform hand hygiene
  - Remove outer gloves and perform hand hygiene

OBSERVER PPE will be placed in a new red bagged garbage can.

**2. Ebola waste is treated as a Category A infectious substance which requires more stringent packaging and labeling than regulated medical waste. (This procedure will be completed while OBSERVER is still dressed in PPE)**

- All waste from a suspect or confirmed Ebola patient will go into the red bag waste
- Small red biohazard container on counter will be placed into red biohazard bag on floor, prior to closing it

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**Page: 4 of 5**

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- Prior to closure, treat potentially contaminated waste with hospital disinfectant or bleach (pour half of hospital disinfectant, into bag before closing).
- PPE will be discarded in designated red bag waste (doff PPE as on OBSERVER Checklist)
- Close the red bag by tying the bag into a knot in a way that will ensure the liquid contents will not leak from the packaging (see picture below)



- Disinfect the exterior surface of the red bag with bleach wipes or hospital disinfectant
- Place the red bag into a second red bag with the knot facing upward.
- Tie closed the second red bag. Make sure the primary bag does not interfere with the closing of the second bag. (see picture above)
- Disinfect the exterior surface of the second red bag with bleach wipes or hospital disinfectant.
- Contact ENV for outer packaging if it is not readily available.
- A quantity of absorbent material sufficient to absorb all free liquid (if any) in case of an inner packaging breach must be placed in the bottom of the outer packaging or within the liner of the fiberboard packaging, whichever is applicable.
- The double-bagged red bag will be placed in a hard sided leak proof red plastic container (located under counter in ABG Lab) or a triple wall corrugated fiberboard box with a 6 millimeter polyethylene plastic liner provided by Daniels Co.
- Disinfect the exterior surface of the box (third packaging) with bleach wipes or hospital disinfectant.
- At this time, the double bagged waste which is located inside the leak-proof red plastic container will remain in the ABG Lab until the final cleaning of the ABG Analyzer. Once the analyzer has been cleaned and the cartridges removed, the cartridges will be placed in another red bag, tied and wiped clean and placed into a second leak-proof red plastic container (located under the counter in the ABG room).
- Contact Environmental Service manager to have leak-proof red plastic container transported to a separate holding area. Outer packaging must be sealed and labeled.
- EVS to transport Infectious waste to a holding area separate from all other RMW.
- Sharps waste must be packaged in an FDA-cleared sharps disposal container that is securely closed in accordance with the manufacturer's instructions to prevent leaks and punctures and placed inside the inner red bags.
- Red bag trash will be placed in solid drum containers in a secured area (Main Accumulation Area-door on employee exit ramp). MAA must be emptied prior to storing containers of infectious waste (store temporarily in old MAA across from mailroom).

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**Page: 5 of 5**

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