

Transmission of EIA virus by man: Reducing risks from blood collections

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Transmission of disease agents from man to animals and animals to man are major items in the news today as the majority of “new diseases” in man are known to arise by transmission from animal reservoirs. When this information and knowledge is translated into situations that involve blood collections from animals in the United States, the National Association of State Public Health Veterinarians in their Compendium of Veterinary Standard Precautions (JAVMA, Vol 233, No. 3, August 1, 2008) state:

“Gloves should be worn during venipuncture of animals suspected of having an infectious disease and when performing soft tissue aspiration procedures. Currently, there are no data indicating that venipuncture of healthy animals constitutes an important risk of exposure to pathogens.”

This statement primarily addresses the risk that the animal poses to the human collector. But of equal importance, especially for this presentation on EIA, is the risk that man poses for transmission of blood-borne infections to the horse. That risk is best exemplified by recent experiences where humans have been implicated as the major vectors of EIA virus. These experiences prompt us to review human interactions with the horse and to urge adoption of methods to minimize the risks our actions present.

Major risk with people and EIA virus is contamination of man/materials and transfer of blood to a second horse

When collecting a blood sample, three major factors must be considered:

1. Protecting the horse from surface contaminants
2. Protecting the horse from the collector, and
3. Choosing equipment to minimize risk

Collectively, our preferred methods are as follows:

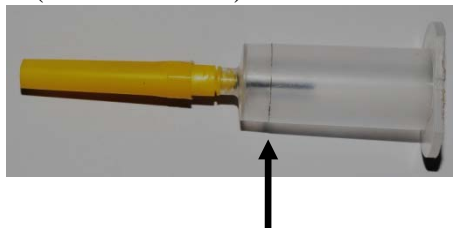
In preparing to draw a blood sample, attention should be given to the dermis (or skin) over the jugular vein at the collection site. If the area is heavily contaminated, a providone-iodine soap and water scrub is recommended. Otherwise, an alcohol swab applied once to the area, allowing the area to dry, will suffice. A single-draw blood collection apparatus utilizing one multi-sample needle and one vacuum blood tube should be used, and the needle then discarded in a sharp's container. Should bleeding occur at the site following the venipuncture, the alcohol swab may be used to apply pressure to assure hemostasis. When the blood collection is done properly, no blood contamination of the operator should occur. In cases where there is overt blood contamination of the equipment or operator, additional safeguards must be taken.

In all cases, the operator must use appropriate methods to prevent iatrogenic transmission of blood-borne pathogens. This should include adoption of standard precautions, such as reducing contamination of hands with washing or use of hand sanitizers and/or the use of disposable gloves for each patient.

Multi-sample needle
(Gasket prevents backflow)



Needle in holder
(Arrow to mark)



Needle partly inserted in evacuated tube
(Do not insert tube beyond marked area)



See comments on minimizing risks with single-sample needles (and other methods) on the following page.

Remember, one of basic tenets of medical practice is to “First, do no harm” (Primum non nocere)

Shorthand Notes:

Preparation of the site for blood collection

Methods: surgical scrub>>clipping & disinfection>>cleaning the area

Routine blood collection: usually less than IV prep; often surface just “cleaned”

The use of alcohol wipes varies widely

Without clipping the site, the real benefit of alcohol wipes is debatable

No standard practice guidelines exist for horses and would be desirable

Good technique reduces risk even without surface decontamination

Preparation of the collector:

Reducing hand contamination

Adequate washing or decontamination of hands with sanitizers

Gloved hands (change between donors)

Protection for collector:

Gloved hands

Equipment use:

Safest: Multi-sample needles (with gasket to prevent backflow) and evacuated glass tubes

Single use; No blood contamination of tube, collector or donor if done correctly

Remove needle without wiping off venipuncture site with bare hand

Spot of blood at needle exit?

Perspective: 1 drop of blood from an acute case of EIA theoretically has the **potential** to infect 100,000 horses!

For aesthetic purposes, clean site with a sterile cotton pledget or alcohol wipe

Better to leave it there than wipe with bare hand!

Let us explain how risks could potentially differ with other techniques

Less safe: Single collection needles and evacuated glass tubes

High risk of blood contamination of donor, collector and tubes

Especially if needle is inserted before tube is put in holder, e.g., fractious donor

Risk decreases if the needle is in gasket of tube while probing, left in tube until filled

Then removed with needle in tube

Even more potential risks: Syringes and needles

Blood from syringe must be discharged into tube for submission to lab

Aerosols generated

Probability of lysis of sample increases

Collector exposed to risks of needles and more blood contamination

Threat from recapping needles; newer styles with recapping cover

Greater potential risks associated with disposal

Risk increases exponentially with non-disposable syringes if used without adequate sterilization between uses

Never Never Never reuse disposable syringes or needles! Even the large expensive ones!!!