



GENERAL BIOSECURITY GUIDELINES

For the purposes of these guidelines, biosecurity includes all practices intended to prevent the introduction and minimize the spread of infectious disease agents in equine populations. Veterinarians oversee the health of equids in many contexts where infectious disease is likely to be introduced and spread, including veterinary clinics, equine event facilities, and stables where there is frequent movement of equids on and off the premises. Appropriate biosecurity measures are important to protect equids, protect people (from zoonotic disease), and maintain business continuity of the facility. This document will concentrate on biosecurity recommendations for equine events and stables. Several private and university veterinary hospitals have written biosecurity standard operating procedures for their equine veterinary clinics, and practitioners are encouraged to contact one of these institutions if guidelines for these purposes are desired.

While there are overarching infection control principles that apply to most circumstances, every scenario has unique attributes. Therefore, it is important for veterinarians to work with other involved stakeholders in advance of an urgent issue (i.e. BEFORE an outbreak) to develop plans that are practical and effective for the particular facility in question. Many people focus on the “outbreak management” aspect of biosecurity, but arguably more important are the day-to-day biosecurity practices that minimize the likelihood of a disease outbreak in the first place or make it easier to quickly contain an outbreak with minimal disruption and expense. Therefore, a comprehensive biosecurity plan includes the development and implementation of routine protocols to control infection, as well as a response plan if infectious disease is recognized.

Table of Contents

[I. Identification of Key Personnel, Important Contacts, and Reference Materials](#)

[II. Routine Biosecurity Protocol](#)

[III. Outbreak Response](#)

I. Identification of Key Personnel, Important Contacts, and Reference Materials

1. Facility personnel responsible for organization of biosecurity (both routine and outbreak related) should be identified. Responsibilities and numbers of these personnel will vary dependent upon the type of facility but there should be a “person-in-charge” and a “chain of command” established. In the event of an outbreak, additional personnel will be required to facilitate isolation and should be designated ahead of time.
2. Other contacts to identify and record:
 - a. [State Veterinarian](#)
 - b. State Office of Public Health
 - c. Event or Stable Veterinarian
 - d. Veterinary diagnostic laboratory of choice
 - e. Competition/Event Manager
 - f. Governing body of event
 - g. Carcass removal company
 - h. Referral hospital for treatment of ill equids
 - i. Potential locations for off-site isolation



- j. Local feed store
 - k. Manure and bedding disposal company
 - l. Farrier
3. [The Equine Disease Communication Center](#) is an excellent resource for outbreak alerts, disease information, and additional advice on biosecurity.

II. Routine Biosecurity Protocols

1. Equine entry onto the premises
 - a. Routine requirements
 - i. For events or stables, restrict entry to healthy equids only and set policy for refusing entry of equids displaying clinical signs of disease. Ideally, staff should observe equids upon arrival to confirm animal identification, check health documents and observe equids for general signs of good health. Consideration can be given to the requirement for a recent certificate of veterinary inspection (CVI).
 - ii. New entries to stables where there are long-term resident equids should be isolated from the resident equids for 2-3 weeks and monitored for signs of contagious disease. During this time, equipment should not be shared among new and resident equids, and caretakers should ideally follow protocols described in [section III](#).
 - iii. Resident equids returning to their home stable from an event should be fully isolated or at least have their temperatures checked twice daily for at least 1 week to allow early detection of disease.
 - iv. It is good practice to segregate equids on a facility by use and age. For example, show equids should be segregated from resident broodmares and their foals.
 - v. Premises may require that equids have documentation of specific vaccinations (See [AAEP Vaccination Guidelines](#) for recommendations).
 1. For premises with increased public exposure risks, a rabies vaccination requirement is prudent in order to protect animal and public health.
 - vi. Apply animal health standards for other species of animals (e.g. cattle) entering the premises.
 - vii. Equids belonging to the same owner or trainer should be housed together with empty stalls between groups of equids if possible.
 - b. Requirements for entry during local disease outbreak
 - i. When an infectious disease outbreak occurs locally, additional restrictions should be applied for animal entry to events or stables,
 - ii. Restrict entry to equids for which the owner/agent provides a CVI issued within 7 days of arrival at the event venue. A CVI issued 72 hours before arrival is optimal. If a CVI is not required, then an owner/agent [declaration statement](#) attesting that the listed equid(s) arriving at the premises has/have been healthy with no clinical signs of a contagious disease or body temperature(s) above 102°F (38.9°C) for the preceding 7 days may be warranted.



- iii. Additional health requirements may be required such as a written statement on the CVI which attests to the equid's health and exposure status. For example, an additional requirement may include a statement that "The listed equid(s) has/have not been on a premise with a confirmed case of neurologic form of EHV-1 in the preceding twenty-one (21) days" if there is a local outbreak of neurologic EHV-1.
 - c. Facility records should be maintained on equid movements (entering, remaining on, and exiting the premises), location of individual animals, and equid health status procedures (monitoring and treatment records).
- 2. Equine Health Monitoring
 - a. **Continuous health monitoring of all equids on the premises should be required.** This is the key to early identification and containment of infectious disease with minimal disruption.
 - i. Options include having designated staff performing period walk-throughs of stables to directly observe equids for any clinical signs of disease or relying on self-reporting of disease by exhibitors or owners (the requirement for which should be stipulated in entry forms or boarding agreements).
 - ii. Any sign of disease should be reported to the designated individual with the authority to initiate immediate disease control measures, such as isolation.
 - iii. Requirements at events should include taking equid temperatures twice daily and documenting temperature readings in a log. Consider requiring the posting of a temperature monitoring log on the stall door which allows designated staff to easily perform checks on temperature recordings. To ensure compliance with the equid temperature monitoring requirement, staff should perform random audits of logs.
 - iv. Owners of equids at boarding stables should be instructed to report clinical signs of disease in their equid to the facility owner or manager.
- 3. General Protocols
 - a. Water sources
 - i. Communal water sources should not be offered at events and exhibitors should be instructed to use their own buckets and to not share equipment with other exhibitors.
 - ii. Hoses should not be submerged in the bucket when filling.
 - b. Housing
 - i. Stalls should be cleaned regularly, and waste stored in an area remote from equids. Equipment used for cleaning stalls should not be used for feed and vice versa.
 - ii. Stall construction impacts infectious disease agent transmission. Stabling which prevents equid to equid contact over the walls, through the walls, or into the aisle way limits disease transmission.
 - iii. Stalls should be cleared of bedding and disinfected after each use.
 - 1. Remove all buckets, hay nets, feed tubs, stall webbings, metal grates, etc. and scrub with detergent solution, rinse,



- disinfect and then rinse thoroughly with potable water and allow to dry.
2. For stalls with non-porous walls and floors (ideal situation):
 - a. Wet down all surfaces -- walls, ceilings, ledges (top of walls) -- with detergent and water. Powdered laundry detergent can be used; some veterinary disinfectants also have a detergent incorporated in the mix.
 - b. Allow 5-10 minutes for the liquid to soften caked-on organic material then scrub surfaces with a stiff-bristled broom to loosen all material.
 - c. Rinse, beginning at the top of walls and from walls towards the drain. Repeat until surfaces are clean, including corners, ledges and drains. NOTE: Do not use power washers set at >120 psi which can aerosolize pathogens. A garden hose with a regular nozzle can be used.
 - d. Squeegee excess water off surfaces, or allow them to dry.
 - e. Apply disinfectant prepared according to label directions on n surfaces, starting at the top of stall walls and working from the far end of the stall to the exit. Allow to dry.
 - f. Repeat disinfection step if suspect or confirmed difficult organisms are found or suspected. Bacteria such as *Salmonella* and certain viruses such as rotavirus are generally difficult to inactivate. Herpes and influenza viruses are more susceptible to detergents and disinfectant and one application of detergent and disinfectant should be sufficient.
 3. If stalls are constructed of porous materials (wood construction, dirt or clay flooring, etc), it must be recognized that these are extremely difficult to clean and disinfect.
 - a. Remove all bedding and organic matter and thoroughly dry scrub all surfaces water to remove as much organic matter as possible.
 - b. Follow up with scrubbing stall walls with a detergent solution. Cleaning with large quantities of water can turn dirt or sand floors into a slurry and should be avoided.
 - c. Disinfectants can be sprayed on surfaces but may have inadequate results, and persistence will depend upon the involved organism. Sunlight exposure may be helpful for inactivation of potential pathogens (Weese *et al*, Survival of *Streptococcus equi* on surfaces in an outdoor environment. *Can Vet J.* 2009;50(9):968-70).



4. Adequate air circulation with ventilation aids in reducing potential exposure to respiratory disease pathogens or ammonia. For exposure to a pathogen such as influenza, 100 equids stabled under one roof would all be considered exposed, however, with an exposure to *Streptococcus equi* more direct contact would be required to be considered exposed. Determine if alterations are necessary to improve air circulation and ventilation.
- c. General recommendations for disinfectant use
 - i. Follow label instructions for use. Note precautionary warnings and requirements for proper use and disposal of the disinfectant.
 - ii. DO NOT mix disinfectants with other chemicals.
 - iii. Select a disinfectant that has documented effectiveness in the presence of 10% organic matter, works in the water hardness of the locale, and is safe to use around equids and humans.
 - iv. Bleach is readily inactivated by organic matter; use only after thorough cleaning. Note: Bleach is the only practical, commercially available disinfectant that kills clostridial spores.
 - v. Viruses with envelopes (e.g. influenza, herpesviruses 1 & 4, equine arteritis virus, etc.) are readily inactivated by detergents and disinfectants.
 - vi. Phenolic and peroxygen based products are effective for viruses lacking an envelope (e.g. rotavirus).
 - vii. Determine where drains discharge prior to using detergents and disinfectants. Certain detergents and disinfectants cannot be discharged directly into bodies of water.
 - viii. Please see this practical table about common equine pathogens and the efficacy of disinfectants on various surfaces and materials [AAEP disinfectant table](#)
 - ix. The Center for Food Security and Public Health at Iowa State University has published [this helpful resource](#) about disinfectants, as well as [this table of characteristics of selected disinfectants](#).
 - d. Hand Hygiene
 - i. If equids are being inspected by facility staff for any reason, hands should be washed between equids or at least between groups of equids owned by different exhibitor groups.
 - ii. Whenever possible, touching the equid should be avoided. For example, in bit inspections, the handler can remove the bit from the equid's mouth without the inspector contacting the bit or equid.
 - iii. If contact between the public and equids cannot be avoided or is encouraged (e.g. petting zoo situation), handwashing or sanitizing facilities should be provided.
 - iv. Instructions for handwashing
 1. Hands should be washed under running water with pump-dispensed liquid soap (not bar soap) for a minimum of 20 seconds.
 2. If facilities are not available for handwashing, hand sanitizer containing at least 61% alcohol should be used and allowed



to dry for 10-15 seconds. Hand wipes should be available to remove all organic debris prior to using hand sanitizer. Caution: avoid exposure to open flame due to flammability.

3. Extensive information about hand hygiene is available through the [Centers for Disease Control and Prevention](#).
 4. Also, please see [this article](#) from the AAEP proceedings on hand hygiene protocols in the equine veterinary setting
- e. Equipment and Supplies
- i. Equid-specific equipment (feed tubs, water buckets, halters, pitchfork, wheelbarrow, etc) should be clearly identified as belonging to an individual equid and should be used only for that equid or the group of equids. Ideally, color coded buckets and cleaning equipment should be used for groups of equids.
 - ii. Shared equipment (lead shanks, lip chains, bits/bridles, twitches, dose syringes, thermometers, grooming supplies) should be cleaned of organic debris and disinfected between equids.
 1. All equipment should be thoroughly scrubbed and cleaned with a detergent and water, rinsed, disinfected and followed by a final rinse. This should be done in an area with minimal foot and vehicular traffic flow that can be cleaned and disinfected after this procedure (i.e. not in a grazing area, but on a solid surface close to a drain).
 2. Cloth items (saddle cloths, towels, bandages, halter fleeces, rub or wipe rags) should be laundered and thoroughly dried between each use. (Disinfectant may be added to rinse water, but an additional rinse cycle must be included to remove disinfectant residue.)
 3. Tack and other equipment which can't be completely disinfected should be cleaned as well as possible and then placed in the sun as sunlight can inactivate many potentially infectious agents.
 - iii. Equipment that cannot be effectively disinfected (sponges, brushes) should not be shared between equids. Multiple dose medications (oral pastes/ophthalmic ointments, etc.) should be labeled for use by a specific equid and not shared.
 - iv. Ointments/topical medications should be removed from larger tubs and aliquoted into smaller containers for use on individual equids.
 - v. Horse trailers and vans should be cleaned and disinfected between uses even if there is no known risk of disease. In general, protocols for cleaning stalls can be adapted to the cleaning of trailers and vans. Mats should be removed to allow wood plank floors to dry. Surfaces around the feeders and cross ties should be given special consideration due to contact with potentially infectious nasal secretions.
- f. Traffic
- i. The movement of trucks, trailers, tractors, golf carts, wheelbarrows and bicycles around an equine premise have the potential to spread infectious disease agents. Restrict vehicles to designated parking



- areas and designated routes without animal access to limit risk of disease introduction and spread.
- ii. Outside supply trucks and non-essential vehicles should not be permitted in the equid stabling area.
- g. Non-equine species
 - i. Dogs should be prohibited from event grounds or leashes required.
- h. Vermin and vector control
 - i. Vermin control is critical, especially for disease agents that can be transmitted on fomites. Simple control measures, such as securing feed storage areas from unwanted wildlife, removing brush and wildlife habitats, instituting rodent control measures and eliminating areas of standing water, will contribute significantly to the reduction of disease transmission risks on the event premises
 - ii. Rodent, bird, and insect control should be evaluated and upgraded as necessary.
 - iii. For large premises with significant equid traffic and accumulation of manure, consult an insect control specialist for the most appropriate recommendations.
 - iv. Recommend application of topical insect repellent for equids during high vector prevalence periods.

III. Outbreak Response

1. Prompt isolation of sick equines is critical to the successful control of an infectious disease outbreak.
 - a. Preparation of Isolation Area
 - i. Location and Attributes
 1. As far away as possible from general human, equine, and vehicle traffic areas. A pre-designated offsite facility may be preferable.
 2. External perimeter secure and clearly marked with adequate [signage in both English and Spanish](#) designating it as a restricted area.
 3. Set up a temporary pen structure if no suitable permanent stabling is available
 4. Optimal isolation stabling has non-porous flooring, running water, and electricity, and is in an area where run-off will not occur
 5. Openings in stall walls (windows, gaps between boards) should be covered with solid barrier material to prevent equid to equid contact.
 6. Should be accessible to large equipment if necessary to handle a down or deceased equid
 7. A local veterinary hospital should be pre-designated that can treat equids requiring isolation with medical needs that cannot be addressed at the show facility's isolation area
 - ii. Supplies
 1. An adequate inventory of disposable personal protective equipment in a variety of sizes and other necessary equipment and supplies (including disinfectants as described in section II)



should be acquired in advance and stored in a location accessible to the isolation area. In the case of an outbreak, there should be enough supplies to operate immediately until additional supplies can be delivered.

2. Ensure that adequate trash receptacles with lids and receptacles for sharps and biohazardous materials are conveniently located around isolation.
3. Examples of Biosecurity Supplies and Potential Sources for Products (updated from Lunn and Traub-Dargatz, Managing Infectious Disease Outbreaks at Events and Farms; Challenges and the Resources for Success, AAEP Proceedings, 2007). References to specific brands or suppliers of products are for example only and should not be considered an endorsement.

<u>Product Name/Type</u>	<u>Potential Source</u>	<u>Contact Info</u>	<u>Approximate Cost</u>
Plastic aprons	Grainger	(800) 472-4643 www.grainger.com	\$199.20 per package of 100
Tyvek coverall with attached hood, elastic wrists and ankles	Enviro Safety Products, Valencia, CA 91355	(800) 637-6606 Fax: (559) 746-0317 www.envirosafetyproducts.com	\$114.99 per package of 25
White disposable gowns	eSafety Supplies City of Industry, CA 91746	(877) 693-3754 (626) 369-1280 www.esafetysupplies.com	\$28.60 per package of 50
Disposable plastic boots ("Knot-a-Boot")	QC Supply Schuyler, NE 68661	(800) 433-6340 (402) 352-3167 www.qcsupply.com	\$14.99 per box of 50
Virkon-S - use spray bottle for disinfection of soles of boots/shoes	Valley Vet Marysville, KS 66508	(800) 419-9524 Fax: (800) 446-5597 www.valleyvet.com	\$70.95 per 10 lb container
Alcohol hand sanitizer- use product with at least 61% alcohol	Multiple sources Examples include Purell and 3M Avagard	www.purell.com www.3m.com	Purell: ~\$1 per 2 oz bottle; 3M Avagard: \$13.50 per 16 oz bottle
Single-use thermometer probe covers	Valley Vet Marysville, KS 66508	(800) 419-9524 Fax: (800) 446-5597 www.valleyvet.com	\$2.49 per package of 30



Water and feed buckets	Valley Vet Marysville, KS 66508	(800) 419-9524 Fax: (800) 446-5597 www.valleyvet.com	~\$4.49 per bucket
Disinfectable Halter and Lead	Valley Vet Marysville, KS 66508	(800) 419-9524 Fax: (800) 446-5597 www.valleyvet.com	\$19.95 for halter and \$7.49 for lead
Disinfectable Grooming Brush Set	Valley Vet Marysville, KS 66508	(800) 419-9524 Fax: (800) 446-5597 www.valleyvet.com	\$6.95 per brush set

b. Sick Equid Trigger Point:

- i. The definition of a sick equid and specific trigger points warranting the response of isolation of an equid should be outlined for the premises.
- ii. Consult local, state, or federal animal health officials to determine specific trigger points and response action for reportable diseases. Note, the response to a reportable disease may vary by state; therefore, it is necessary to contact the official in the state where the event is held to determine reportable diseases.
- iii. General recommendations to consider for designation as a response trigger for isolation include detection of:
 1. Body temperature greater than 102°F (38.9°C)
 2. Ataxia or recumbency
 3. Aggressive behavior or stupor
 4. Profuse diarrhea
 5. Oral or coronary band vesicular or ulcerative lesions

c. Entry and Exit Protocols

- i. All movement in and out of the isolation area should be regulated and recorded, e.g. with check in sheets.
- ii. Additionally, maintain a log, recording events as they occur, including case identification (which horses got sick), control measures implemented, diagnostic testing results, and communiations.
- iii. Disinfectant footbaths or mats should be placed at all entry and exit points to and from the isolation area and each stall.
 1. Disinfectants suitable for footbaths and mats include 10% bleach or peroxygen compounds such as Virkon® S. Read label indication, instructions for use and safety information prior to using any disinfectant. Please see the disinfectant table linked in Section II.C.3 for more information.
 2. The footbaths and mats should be kept as free of organic matter as possible and routinely filled with new disinfectant solution (at least every 2-3 days and preferably daily).
 3. Rubber boots or other footwear suitable for disinfection should be worn. If other types of footwear are used, plastic overboots should be employed and disposed of after each use. The tread of rubber boots should be kept free of organic debris with a brush.
- iv. Handwashing or hand sanitizer stations should be placed at all entry and exit points to and from the isolation area and each stall (See section



- II.C.4 for information on hand hygiene). Hands should be washed before entering and when leaving each stall, and when entering and leaving the isolation area.
- v. Personnel should don a protective gown and latex or nitrile gloves before entering a stall to examine or care for an equid. Gowns and gloves should be disposed of after each use and between equids in a covered refuse container. If a cloth gown is used, it should only be used once and then laundered.
 - vi. Caretakers should be provided with a changing area. Clothes should be changed and laundered, and footwear changed or disinfected after leaving isolation and before handling other equids.
 - vii. All necessary supplies should be in the isolation area before the movement of a sick equid into the area. If necessary, additional supplies may be brought to an area adjacent to the isolation area for easy transfer. Designated equipment should remain in the isolation area.
- d. Care, monitoring, and testing of sick equid(s) in isolation
- i. ANYTHING that touches an infected equid and its secretions or excretions has the potential to transmit pathogens to other equids. Pathogens can be indirectly transmitted to other equids on equipment, tack, hands, or clothes.
 - ii. Ideally, designated trained staff provided by the facility should work exclusively in the isolation area to care for equids and designated equipment should remain in the isolation area. If multiple individuals are moving in and out of isolation to care for equids, extreme care must be exercised in following biosecurity protocols, especially if these individuals are also caring for well equids not in isolation. This situation is not ideal.
 - iii. If it is unavoidable that an individual has to provide care to both affected and unaffected animals, then the following precautions should be observed:
 - 1. Care of healthy, unexposed animals (feed/groom/exercise/muck stall) should be completed first
 - 2. Exposed but healthy animals next
 - 3. Affected/sick animals last
 - iv. The health of all equids in isolation should be closely monitored and necessary supportive care and medical treatments provided. If required medical care exceeds the capabilities of the isolation unit, the equid should be transferred to isolation at a referral veterinary hospital.
 - v. Depending on clinical presentation, determine the samples for diagnostic testing and send to pre-determined diagnostic laboratory in order to confirm or rule out specific infectious diseases of interest.
 - vi. Manure and soiled bedding from stalls of sick equids should not be put in open air piles or pits or spread on pastures. It should be placed in heavy plastic bags for disposal in a landfill. If the disease is zoonotic, any potentially infectious waste should be disposed of by the method recommended by public health officials.
 - vii. If a professional laundering service is used, they should be informed if any of the materials are potentially infectious. If barn laundering



- facilities are used, the washing machine should be cleaned by running empty with a suitable disinfectant following use on potentially infectious materials.
- viii. All equids demonstrating neurologic clinical signs with no confirmed diagnosis should be clearly marked with a “rabies suspect” sign on the stall and reported to public health authorities. Restrict personnel access to the equid and ensure that anyone contacting the equid wears double gloves, protective clothing, and splash protective equipment (face shield or goggles) as necessary. Record the names of all who make contact with the equid in a log so that they can be contacted in the event of a positive rabies diagnosis. See this [link in the AAEP guidelines](#) for information about rabies.
 - ix. If euthanasia is required, the ideal location is on a remote area of the grounds accessible to large equipment or trucks, with no public access.
 - 1. Someone capable of removing carcasses should be identified in advance of necessity
 - 2. The route of a rendering truck or dead hauler on and off the premises should not cross any live equid routes or exercise areas.
 - 3. Necropsy of any equid that dies or is euthanized should be strongly recommended and optimally performed off-site at a veterinary diagnostic laboratory. The State Animal Health Official should be consulted in case they would like to request specific and expedited tests. In the case of a potential zoonosis, necropsy is essential to protect public health.
 - e. Release of equids from isolation
 - i. The state veterinarian will be in charge of determining release protocols in the event of a reportable disease.
 - ii. The event veterinarian and management should work together to determine isolation release protocols in cases of non-reportable potentially contagious diseases.
 - iii. In general, equids should be maintained in isolation at the event until one of the following occurs:
 - 1. The equid no longer has clinical signs and tests negative for all suspected infectious disease agents
 - 2. A non-contagious disease is confirmed
 - 3. The equid is moved to another facility and quarantined if necessary
2. Management of premises not in primary isolation perimeter
- a. Exposure assessment and risk assignment of equids without clinical disease
 - i. An equid that had direct contact (nose to nose, shared fence line) with a sick equid is at high risk for infection.
 - ii. An equid that may have had indirect contact (communal water trough, shared wash rack, shared equipment, common personnel) with a sick equid is moderate risk
 - iii. An equid that had no direct or indirect contact with a sick equid is low risk



- iv. Exposure assessments may vary dependent upon disease agent. In the case of a disease such as influenza that is transmitted over longer distances than a bacterium such as *Streptococcus equi* subsp. *equi*, high risk equids may include all equids sharing air space (ie in same barn or transported in the same trailer/van) as affected equid(s).
- b. Restrictions on equid movement during an outbreak
 - i. Restrictions on equids will vary dependent upon risk assignment and the disease agent
 - ii. The state veterinarian will be in charge of determining restrictions on at-risk equids in the event of a reportable disease.
 - iii. The event veterinarian and management should work together to determine restrictions in cases of non-reportable potentially contagious diseases.
 - iv. In general, equids that are at high risk would have more stringent restrictions and monitoring than low risk equids. Following biosecurity procedures similar to those used in isolation for higher risk equids is recommended to prevent further disease spread. Higher risk equids should be exercised separately, preferably in a different arena, from equids in lower risk groups.
 - v. Temporary movement restrictions may be necessary until assessment of the situation is complete, especially in higher risk or higher consequence disease situations, after which permission for allowing certain movements on the premises may occur. Policies should be communicated, preferably face to face, to those impacted, and enforcement of policies should be consistent and fair.
 - vi. A plan for promptly closing the premises should be developed in the event it is needed, with procedures outlined to redirect personnel resources to close and lock gates, block roadways to and from the premises with barriers, and monitor entry and exit of vehicles
 - vii. It is essential that facility management be aware of what equids are on the premises and where they are stabled. This ideally is a routine practice but is especially important in an outbreak. This may require barn to barn inspection and documentation.
 - viii. A check-out protocol is necessary for equids whose owners are given permission to move them from the premises. A basic check-out process includes follow-up owner/agent contact information (cell phone number and email address), documentation of equid identification, and the intended destination for the equid. This simplifies follow-up if necessary.
- c. Monitoring of equids during an outbreak
 - i. Continuous health monitoring of all equids on the premises is a priority during an infectious disease outbreak.
 - ii. Designated, knowledgeable, experienced individuals should perform periodic walk-throughs of stables directly observing equids for any sign of clinical disease.
 - iii. Owners/trainers/grooms of equids should be required to monitor their equids for signs of disease and report any clinical signs to show management or attending veterinarian



- iv. Temperatures should be taken on equids twice daily and documented in a log displayed on the stall door for easy assessment. Temperatures should not be taken immediately after exercise; ie they should be obtained after equids are cooled out to avoid spurious elevations.
 - v. An equid body temperature over 102°F (38.9°C) should be immediately reported to show management. Equids with temperatures between 101°F (38.3°C) and 102°F (38.9°C) should be monitored for other signs of disease and have the temperature retaken in 1 hour.
 - vi. Equids demonstrating “sick equid triggers” outlined in III.A.2 should be moved to the isolation facility and managed there.
 - vii. Consideration should be given to updating or initiating vaccination in at risk equids when appropriate. Please see [this section of the Infectious Disease Control guidelines for recommendations for specific diseases.](#)
- d. Additional restrictions and recommendations for disinfection
- i. Since dogs may carry infectious disease agents from one location to another on the premises, no dogs should be on the grounds during an infectious disease outbreak. Require owners with dogs onsite to immediately remove dogs from the grounds. Dogs should not be placed in trailers or vehicles due to the possibility of escape, barking and temperature stress.
 - ii. Immediately clean equipment of organic matter, thoroughly scrub with detergent and water, rinse, dry and disinfect all previously shared equipment (lead ropes, chains, bits, twitches, thermometers, grooming supplies, etc.). Items, such as tack, to which disinfectants cannot be applied, should be cleaned and allowed to dry in the sun, since sunlight inactivates/kills many pathogens. Sharing of equipment should be discouraged, but any equipment which must be shared should be cleaned and disinfected between uses.
 - iii. During a disease outbreak, it is essential to communicate disease biosecurity measures to visitors. Keep visitors out of the equid areas and inform them of proper biosecurity measures if they are returning to equid premises.
 - iv. Steps to limit direct and indirect equid contact are necessary. All areas which are touched by human hands or by equids, such as fences, wash racks, bathroom sinks, faucets and door handles, should be cleaned and disinfected at least daily. Common use items, such as wash stall cross ties and washing equipment, should be removed and personnel should be required to use their own equipment. Monitor exercise and exhibition areas to ensure that minimal direct or indirect equid-to-equid contact occurs. Restrict individuals from tying equids to fencing outside the arenas or stabling areas, since fencing can be contaminated by secretions of an infected equid. Indoor arenas and indoor stabling can potentially increase the risk of aerosol spread. Indoor arenas may be closed, and individuals required to utilize outdoor arenas if aerosol pathogen spread is suspected.
 - v. During an infectious disease outbreak, only the owner or designated personnel should handle equids on the premises. Limit the sharing of personnel between barns or trainers. Supply additional hand washing



- stations and signage during the outbreak to enable equid handlers to perform proper hand sanitation after handling each equid.
- vi. Thorough cleaning and disinfection of the premises at the beginning of an infectious disease outbreak can significantly reduce the potential for disease agent spread. Start with the removal of all manure, soiled bedding and uneaten feed, then remove residual organic matter by washing all surfaces with soap and water before the application of a disinfectant. To limit vehicle traffic on and off the premises, consider ordering bulk disinfectant supplies for delivery to a designated bio-secure area on the grounds.
 - vii. Sunlight inactivates/kills many pathogens. After cleaning and disinfecting buckets, tack, and equipment allow them to dry in the sunlight if possible. After cleaning and disinfection for some pathogens, like *Salmonella*, it may be necessary to obtain test swabs of the environment to determine elimination of the organism.
 - viii. Request that individuals clean and disinfect their equipment, trailer and vehicle before leaving the grounds.
 - ix. The plan should include feed store contact information to re-arrange for feed and bedding delivery. Delivery protocols to clean and disinfect trucks upon entry and exit may be warranted. Vendor personnel may also request to use disposable coveralls and disposable footwear covers when delivering supplies (i.e., grain, hay, supplements, bedding). Management should assess the potential feed and bedding needs on the premises and consider necessary arrangements for a single delivery to a designated area. To minimize disease spread on the grounds, designate personnel to be responsible for the delivery of the feed to the barns. Deliveries should be first to low risk/healthy equids, then exposed equids and lastly to clinical equids.
 - x. All shared facilities/equipment (e.g. detention barn stalls, receiving barn stalls, starting gate, equine ambulance) should be cleaned and disinfected after each use.
 - xi. Horse trailers and vans should be routinely cleaned and disinfected after each use, but especially after being used to transport ill or potentially ill animals.
- e. Communication
- i. Clear and concise signage and messaging to all on the grounds is essential. During an infectious disease outbreak, there is limited time to develop adequate signage, so developing critical messaging before an outbreak and having clear attention-getting signs available for use in an outbreak will aid in prompt effective communication and successful implementation of enhanced biosecurity and infectious disease control plan measures. Decide in advance where signage will be posted. See link to suggested signs in English and Spanish in section III.A.1.
 - ii. Notification of all affected parties is a critical component for an effective infectious disease control plan. Development of clear, concise and accurate messages about a situation, the measures being taken and the procedures for owner/trainers/grooms to follow is critical to prevent the



spread of disease and panic among the group. This may be best accomplished by issuing a press release in high profile situations.

- iii. Before a disease outbreak, outline a communication plan to notify staff, trainers, owners, public and vendors of an incident. Consider incorporating several communication modalities to ensure rapid, unified messaging to a large audience. Contact information for other individuals who may be able to assist during an infectious disease outbreak should be organized and readily available. Create a complete emergency contact list and provide it to all staff at the beginning of the disease event. Consider having a public relations specialist develop a communication plan and have their contact information readily available for provision of messaging at the appropriate level and preparation of timely updates.
- iv. [Biosecurity instructions](#) for caretakers should be provided in English and Spanish.
- v. [Please see this article](#) from the AAEP Proceedings on management of infectious disease outbreaks for more information.