CALIFORNIA DEPARTMENT OF FOOD & AGRICULTURE

Biosecurity Toolkit for Equine Events

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Part 1 - Basic Biosecurity for Equine Events

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Purpose

The purpose of this toolkit is to assist equine event management and industry stakeholders in identifying potential disease risks at an event venue and in developing a biosecurity and infectious disease control plan to protect the health of the competition/ exhibition horses and the equine population. Each event and venue is unique; therefore, the toolkit provides guidance for the assessment and development of event-specific plans that address the specific identified disease risks of the event and venue.

Biosecurity Toolkit for Equine Events

Part 1: **Basic Biosecurity For Equine Events**

Part 2: **Enhanced Biosecurity and Infectious Disease Control for Equine Events**

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Part 1: Basic Biosecurity for Equine Event

Biosecurity is a set of preventive measures designed to reduce the risks for introduction and transmission of an infectious disease agent. Infectious disease pathogens may be brought to and spread at an event premises by horses, people, domestic animals other than horses, vehicles, equipment, insects, ticks, birds, wildlife including rodents, feed, waste and water. Implementation of an equine event biosecurity plan will minimize or prevent the movement of diseases and pests on and off the event premises. Development and implementation of an equine event biosecurity plan is an essential responsibility of the equine event manager that is critical to protecting the equine industry.

The objective of this biosecurity toolkit is to provide equine event managers with resources to recognize potential disease risks at the event venue and develop a biosecurity and infectious disease control plan to protect the health of the competition/exhibition horses and the equine population. Each event and venue is unique; therefore, the toolkit provides guidance for the assessment and development of event-specific plans that address the specific identified disease risks of the event and venue.

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Potential for the "Perfect Storm" at Equine Events

A disease "perfect storm" occurs when numerous disease risk factors and a viable disease pathogen successfully interact resulting in the introduction and successful spread of the infectious disease agent to a susceptible population. The threat of a "perfect storm" concerns many equine event organizers. In the world of equine events, a "perfect storm" situation could occur if susceptible, stressed horses at an event venue are exposed to a viable infectious disease agent, the conditions and environment at the event support disease transmission and the disease agent rapidly spreads throughout the population of animals on the premises. In May 2011, horses that attended the National Cutting Horse Association event in Ogden, UT were exposed to the neurologic form of Equine Herpesvirus-1. The resulting outbreak, which garnered national attention, serves as an example of a disease "perfect storm" situation that had a significant impact on the equine industry.

1. **Entry and Movement of the Disease Agent:** Some equine infectious disease agents are ubiquitous in the environment and may naturally be present on the event grounds. Other infectious disease agents may be brought onsite by apparently healthy "carrier" animals. A multitude of factors, including stress, may result in a carrier animal becoming sick while at an event. This diseased horse may shed the pathogen exposing susceptible horses. Depending on the infectious disease agent, some exposed horses may shed the infectious disease agent during an incubation period before showing clinical signs of disease. So a sick shedding horse and a clinically healthy horse incubating a disease may shed disease agent into the environment, potentially infecting other horses at the same event. At an event lasting several days, an infectious disease agent can potentially disseminate throughout the entire venue exposing a large population of horses. Exposed horses that are subsequently moved from the venue can potentially spread the disease to horses at the next site of destination.

2. **Exposure of Stressed Susceptible Horse Population:** Horses participating at events away from their home premises experience stress associated with travel, an unfamiliar environment and competition/exhibition. Stress affects the immune system lowering defenses against invading pathogens. If an invading infectious pathogen is one to which the stressed horse has not been previously exposed, the potential for infection with exposure increases.

3. **Environmental Spread of Disease:** Many environmental factors contribute to the spread of disease. Air temperature, wind and humidity can promote the survival and transmission of infectious disease agents. The stable environment at an equine event may significantly influence the spread of the infectious disease agent and the quality of the ventilation in the stabling area may directly facilitate pathogen spread. Many multi-day equine events have space limitations for stabling, so horses are often kept in close

confinement. Such close confinement may promote the ability of a disease agent to spread.

4. Lack of Biosecurity: Properly implemented biosecurity measures may significantly decrease the risks for disease introduction and spread. Failure to implement, or to comply with, biosecurity measures may lead to an increased likelihood of on-site disease agent introduction and transmission.

Biosecurity Challenges at Equine Events

Equine events pose unique risks for disease introduction and spread. The frequency and number of animals and humans moving around a show grounds, the commingling of horses of unknown health status, the often close stabling of animals and the sometimes inadequate or non-existent isolation areas for sick animals, all increase challenges for disease control.

1. **Commingling Horses of Unknown Health Status:** Horses, often with an unknown health status, are moved from their home premises and travel to an equine event, where they commingle on one premises. Some owners may have vaccinated their horses to protect them against common infectious disease agents, while others have not. The horses may all appear healthy as they unload from the trailer on the event grounds, however, some may be incubating or shedding a disease agent. Unfortunately, without a requirement for complete health exams and diagnostic testing, the health status of all the horses arriving on the event grounds will remain a mystery.

During equine events, horses commingle in confined spaces for the purpose of competition, exercise or stabling. Without a complete physical examination and diagnostic testing, the health status of these horses remains unknown. There is potential for an apparently healthy horse to be incubating and possibly shedding a disease agent.

2. **Stabling of Animals in Close Proximity**: Horses participating in multi-day equine events are often housed in close quarters in barns and stables for extended periods of time with limited access to paddocks or pastures. Some events, such as fairs and exhibitions, may house multiple types of animals under one roof. Close stabling increases the risk of circulating pathogens and disease transmission.

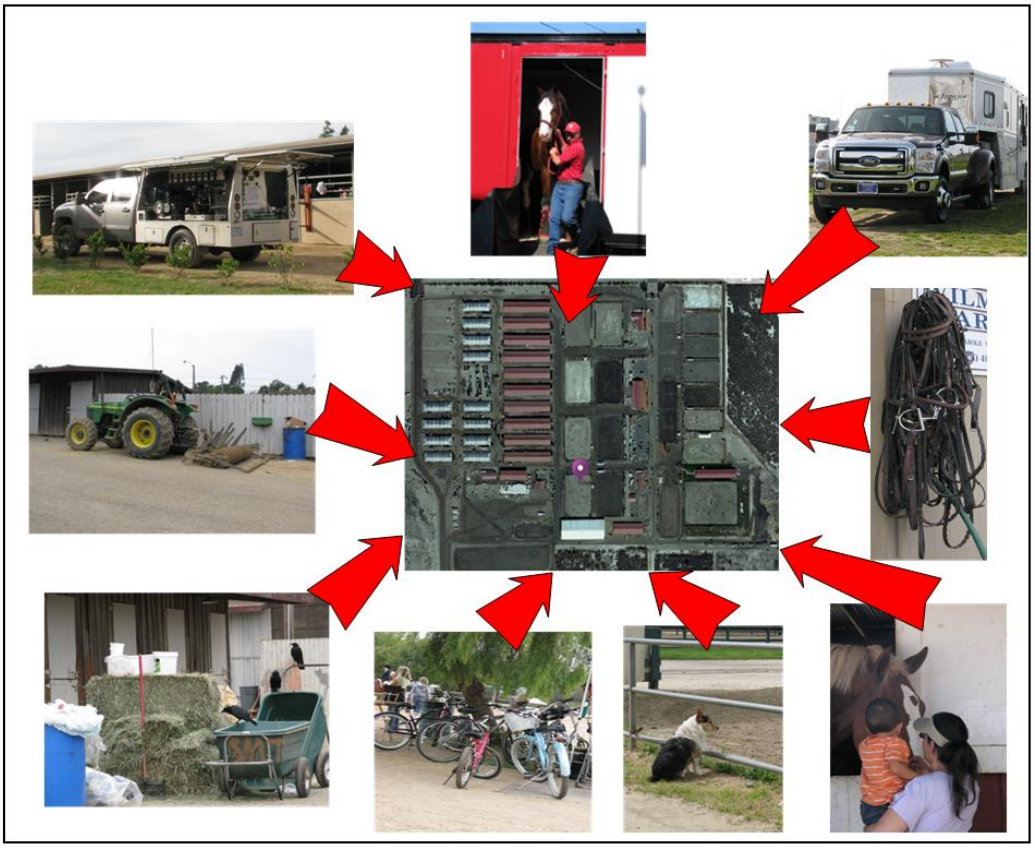
3. **Animal and Human Movement:** Typically, event officials, exhibitors, spectators and vendors move freely around the venue grounds, interacting with numerous other people, animals and objects. These unrestricted movements and interactions may inadvertently increase the risks for infectious pathogen introduction and spread during an event.

Horses and humans can quickly disseminate a disease pathogen around the event grounds when movements and interactions are unrestricted.

4. **Inadequate or Non-existent Isolation Areas:** Most equine event grounds and facility designs allow exhibitors easy, direct access to competition/exhibition areas. Stabling areas away from the main traffic routes of the event are limited and an area for adequate isolation of sick horses may not be immediately available when needed.

A Biosecurity Plan for Equine Events

Development of an equine event biosecurity plan is an important step in protecting the health of all horses on the event premises. An assessment of biosecurity risks for each venue is necessary and an event-specific biosecurity plan should be developed to address each of the disease risks identified. An event-specific biosecurity plan should address the specific disease risks for the particular venue site and horse population. Successful implementation of the biosecurity plan relies on event staff, participants and spectators understanding and complying with the policies and procedures of the plan. Ideally, the event biosecurity plan should be incorporated in the rules and regulations of the event, communicated to all individuals before the event and prominently displayed with signage at the event. The plan should include monitoring during the event to ensure compliance with biosecurity policies and procedures. The American Association of Equine Practitioners (AAEP) provides guidelines to equine veterinarians on biosecurity and infectious disease control at equine events. Event managers are encouraged to consult a veterinarian to assist in the biosecurity assessment process and plan development. **The below photos illustrate various ways an infectious disease agent can be introduced and spread at an equine event venue. When evaluating the event venue, consider the horse, trailers, tack and equipment, visitors, pets, bicycles and golf carts, feed and bedding delivery systems, tractors and farrier or other vendor vehicles as biosecurity risks and determine what steps can be taken to control the risks.**



Equine Event Biosecurity Assessment

HINT
The best way to assess biosecurity risks is to follow a horse around the premises.

Initially, conduct a biosecurity assessment of the equine event venue and evaluate current management practices and identify potential disease risks. Assess the facility layout and construction, animal entry requirements, horse stabling, manure disposal, feed and hay storage, equipment handling, cleaning and disinfection procedures, potentials for horse-to-horse contact and horse-to-other species contact, isolation facilities for sick horses, vector and wildlife control, visitor access, traffic control and record keeping. Address the risks identified in the assessment in the biosecurity plan for the event. In the event of an animal disease outbreak, more stringent practices will be required to control disease spread.

Use an aerial view of the event venue to visualize and identify potential risk areas for disease pathogen entry and spread.

1. **Facility Layout:** The biosecurity assessment of an equine event venue involves determining the risk of potential introduction and spread of disease for the particular venue layout and construct. The facility design may significantly influence the ability for disease pathogens to be brought to the premises and spread throughout the facilities and the animal populations. Complete elimination of disease risk is impossible; however, understanding and evaluating the risk factors for the venue site enables the event manager to implement appropriate management practices to reduce the risk of a potential infectious disease outbreak at their equine event. A complete facility biosecurity assessment should include assessment of the stalls (number, size, construction and location), the availability of an isolation area (location, access and suitability), the feed and water areas (storage, sources, handling), the communal wash stalls (number, construction and location), exercise areas (size, location, level of possible horse-to-horse contact, equipment, sanitation) and the parking areas (location, separation and signage). An assessment template and pictorial assessment document are available in the Appendix A and C to assist in the assessment of the facility. (See Appendix A - Event Facility Biosecurity Risk Assessment Text Version and Appendix B for Equine Event Biosecurity Risk Assessment Pictorial Version and Appendix C for Equine Event Biosecurity Policy Risk Assessment)

2. **Animal Entry Requirements:** Animals entering the event venue are a potential source of infectious disease agents. Assess the event entry policies and procedures to determine the risk of disease agent introduction. Permit only healthy horses to enter the venue grounds and have enforceable rules for refusing entry of unhealthy horses to the event. Ideally, event staff should observe horses upon arrival to confirm animal identification, check health documents and observe horses for general signs of good health. Apply similar animal health standards for other species of animals entering the venue as well. As an added precaution, equine entry to the premises should be restricted to only those equines participating in the event.

Are healthy horses entering the grounds?

3. **Horse Stabling**: Horses participating in multi-day equine events are often housed for extended periods of the day in barns or stables. Some events, such as fairs and exhibitions, may house multiple types of animals under one roof. Horse-to-horse contact, horse-to-human contact and horse-to-other animal contact are all potential routes for disease spread within the stables. When evaluating the biosecurity risk of the stabling area, assess the ability for horses to contact other horses, humans and other animals. Disease transmission risks increase with ability for direct or indirect contact. Additionally, evaluate the ventilation and air flow to ensure adequate air circulation, which aids in reducing potential exposure to respiratory disease pathogens or ammonia. For exposure to a respiratory pathogen, such as influenza, 100 horses stabled under one roof would all be considered exposed, however, with an exposure to *Streptococcus equi* (strangles) more direct contact would be required to be considered exposed.

Horses in stables with stall doors facing outward have lower disease risk due to better air circulation. However, there is an increase disease risk associated with potential contacts with other animals or humans passing by the stables.

4. **Stall Sanitation:** Bacteria, viruses and parasites may remain viable in the manure, bedding and stall material. Therefore, evaluate stall cleaning protocols to ensure frequent and proper cleaning and disinfecting of stalls before and after each horse use to reduce potential exposure to disease agents. Direct observation of stall cleaning procedures will help determine the potential disease agent transmission risks associated with equipment handling, manure movement and disposal, and stall cleaning and disinfection protocols. (See Appendix D - Cleaning and Disinfection of a Vacated Stall)

5. **Manure, Soiled Bedding and Hay Disposal:** Infectious disease organisms may be shed and remain viable in horse manure. Handle manure as a risk material, especially when there is an infectious disease outbreak. Manure and soiled bedding present in foot or vehicle traffic routes, or in areas where fluids accumulate, pose a potential risk for the spread of infectious disease agents. Evaluate manure and waste disposal protocols to determine the location of manure piles in relation to vehicle and foot traffic, horse stabling areas, pastures and surface water. A wheelbarrow used for multiple barns can potentially spread disease to a larger geographic area compared to use of a designated wheelbarrow for a single barn or a single barn aisle. Never use a manure wheelbarrow to move feed or clean bedding. Evaluate the frequency and scheduling of manure removal from the collection point to ensure that procedures for prompt removal are in place. Frequent manure removal aids in eliminating parasites and insect breeding sites. Evaluate the manure disposal method to ensure that fresh manure is not spread on horse pastures. Thorough cleaning to remove organic material and disinfecting of stables and stabling areas reduce the level of pathogens.

Designate position of manure piles away from foot and vehicle traffic area. This will reduce exposure risk to pathogens.

6. **Water Source and Disposal**: A shared water source can result in risks for pathogen spread. Event venues which have a communal water trough or water from a shared water source have a higher risk of potential disease transmission. Events which require individuals to bring their own water buckets to fill from a water faucet have a lower disease transmission risk. Water hoses, although helpful to exhibitors, have the potential to spread disease if inserted into multiple buckets or left lying on the ground between uses. Natural water sources, such as streams or ponds, also pose a significant disease risk due to an inability to control water quality or prevent contamination with disease agents. Contamination of natural water sources can be due to wildlife, fecal material, urine and environmental toxins, so use of natural water sources at events should be avoided. Proper water disposal is important for disease control since used water or water remaining in the buckets have the potential to carry respiratory pathogens and also serve as a breeding ground for mosquitoes. Evaluate water disposal methods to ensure that water buckets are emptied directly into a drain or onto manure piles to eliminate disease agent transmission risk.

Pathogen-sharing is effective with use of communal water troughs.

Feed and manure handling supplies should be securely stored separately to prevent contamination.

7. Feed and Hay Storage: Evaluate the location, security and sanitation of feed and hay storage areas. Store feed in sealed containers to eliminate access by vermin, birds or other animals that have the potential to transmit disease. Hay should be free of dirt and mold, stored off of the ground and be kept covered. Feed storage bins, equipment and feed/water buckets should be routinely cleaned and disinfected. Feeding equipment should be stored separately from manure handling equipment.

Congregating horses creates the potential for exposure to disease agents by direct contact with another horse or indirect contact with a surface potentially contaminated with an infectious disease agent.

8. **Horse-to-Horse Contact:** Infectious disease pathogens can spread easily from an infected horse to a susceptible horse by direct or indirect horse contact. Horses may shed infectious disease agents, such as bacteria, viruses or parasites, in body fluids, such as saliva, sweat, nasal discharge and feces. Evaluation of all potential for contacts is important for the development and implementation of biosecurity practices to minimize risk of disease spread. At equine events, horses may have direct contact with other horses in the stabling area, exercise area or in the exhibition arena. Horses may have indirect contact with other horses through contact with a surface, such as a fence or stall wall, contaminated with secretions from an infected horse. Horses tied closely along fences outside competition arenas may have direct contact with other horses or indirect contact with surfaces potentially contaminated by an infectious disease agent.

9. **Horse-to-Other Species Contact:** Horses may harbor infectious disease pathogens that may infect other livestock species. Some of these pathogens may be merely carried by the horse but not cause disease in the horse. Dogs, which are often brought to equine events, may also be a potential mechanism of disease spread at the equine event. Evaluation of all potential horse-to-other species contacts is important for development and implementation of biosecurity practices that can minimize risk of disease spread by this route. If protocols are put in place to restrict other animal contact with horses, evaluate them for compliance and enforcement.

10. **Traffic Control:** Vehicles entering the equine event venue may carry infectious disease pathogens on their tires or undercarriage. Evaluate vehicle traffic flow to determine if vehicles should be prohibited from the horse traffic areas. Also evaluate the adequacy of signage for designated vehicle traffic routes and parking areas for exhibitors, haulers, and visitors.

Designated vehicle parking limits disease transmission risk.

11. Record Keeping: Accurate records of event participants and horse arrivals and departures are necessary when evaluating disease exposure risk of the population. Current and accurate records of horses at the event and valid exhibitor contact information are essential to an investigation and response to a disease outbreak at an equine event. A map of the event venue, indicating locations of event activities, stables, fence lines, traffic flow, water sources and parking areas, should be part of all disease prevention plans and are needed in disease incident investigations. Evaluate event records, tracking documents (ability to track animal movement while on the premises and once they have left the premises) and maps of the event facility to ensure that they will contain pertinent information to compliment the biosecurity and infectious disease control plans. (See Appendix E - Record of Attendance at Equine Events)

Biosecurity assessment of these important areas will reveal potential risk factors for the introduction or spread of an infectious disease agent. The biosecurity and infectious disease control plans for the event should then be tailored to address the identified risk factors for the venue to the best extent possible.

Recommendations for an Equine Event Biosecurity Plan

Disease risks are inherent when animals of varying health status commingle. Complete elimination of all disease risks at an equine event is highly unlikely, so event managers must determine the acceptable level of disease risk for their event and develop an event biosecurity plan with policies and procedures to attain the needed level of biosecurity. Working with veterinarians and stakeholders, event management should determine which risks warrant implementation of mitigation measures.

An understanding of disease transmission is an asset to the event manager in the assessment of disease risk and prioritization of needed biosecurity measures. The greatest risk for contagious disease spread is direct horse-to-horse contact, specifically susceptible horse contact with a sick horse shedding infectious disease pathogens. Secondly, body fluids, such as sweat, material from the nostrils and manure/soiled bedding from a sick horse, may contain infectious disease agents that contaminate equipment, water buckets, tack, clothing, personnel and vehicles. Horses contacting contaminated surfaces may be exposed to the disease agent indirectly. Lastly, mosquitoes, ticks and flies, may be vectors for disease transmission. Vector transmission occurs when an insect or tick acquires a pathogen from one animal and transmits the pathogen to another animal. Insects or ticks can act as mechanical vectors which simply transfer the disease agent from one host animal to another. In some cases, insects or ticks act as biological vectors which involve modification of the agent by the insect or tick before transmission to a new host animal. Biosecurity measures should target these various methods of disease transmission to prevent the spread of disease.

In an area of no known ongoing disease threat, basic biosecurity is still necessary at the event. If, however, a disease threat is known to be in the geographic area of the event, it is advisable to institute additional biosecurity measures. The plan should also outline specific infectious disease control measures to enforce if a disease outbreak occurs at an equine event.

Following the venue disease risk assessment, equine event managers should consider the following biosecurity recommendations in the development of an equine event biosecurity plan:

1. Health Requirements for Entry: To protect competitors/exhibitors and horses on the premises, implement horse health entry requirements to reduce the risk of disease agent introduction to the venue. Horse health requirements for the event should be made in consultation with a local veterinarian with knowledge of the specific disease risks of the geographic area. When developing equine health entry requirements, consider the following policy options:

a. ***Only Healthy Horse*** **Policy:** Restrict entry to the event grounds to healthy horses only. Prohibit entry of horses displaying obvious clinical signs of disease, such as

copious nasal discharge, persistent frequent coughing or neurologic signs, such as ataxia or marked hind limb weakness (wobbly gait).

b. Event *No Fever* Policy: Restrict entry to the event grounds to horses for which the owner/agent can provide documentation that the horse(s) has/have not displayed a temperature above 102°F for a designated time period, for example, the 48 hours immediately before arrival at the event. For events held in a geographic area of increased disease risk, the temperature monitoring time period before arrival may be increased to seven (7) days with the added requirement for submission of temperature recording log.

Healthy Horse Parameters

Temperature	*100°F*
Resting Heart Rate	*28-40 bpm*
Resting Respiratory Rate	*10-14 bpm*

c. Health Certificate Required for Entry Policy: Restrict entry to the event grounds to horses for which the owner/agent provides a certificate of veterinary inspection (health certificate) issued within seven (7) days of arrival at the event venue. A health certificate issued 72 hours before arrival is optimal. If a specific disease risk exists within the geographic area of the event, or a specific disease risk exists in the type of horses participating in the event, specify that additional health requirements be written statement on the health certificate by the issuing veterinarian attesting to the horse's health and exposure status. For example, an additional requirement may include a statement that "The listed horse(s) has/have not been on a premises with a confirmed case of neurologic form of EHV-1 in the preceding twenty-one (21) days". Additionally, your event may require that horses have specific vaccinations. For events with increased public exposure risks, a rabies vaccination requirement is prudent in order to protect animal and public health. Consult a local equine veterinarian for additional health certificate statement and vaccination recommendations based on disease risk of the geographic area or equine exhibitor demographic.

d. Horse Health Declaration Policy: Upon arrival, require that the owner/agent sign a health certification statement attesting that the listed horse(s) arriving at the venue has/have been healthy with no clinical signs of a contagious disease or body temperature(s) above 102°F for the preceding seven (7) days. (See Appendix F - Equine Event Participation Declaration). For all event health requirements and biosecurity measures, exhibitors and visitors should be made aware of the policies both prior to and during the event.

Animal Health Examination Notification

- All horses and other livestock that enter the grounds, whether entered in event or not, are subject to examination by event officials and/or State Animal Health Officials to determine whether such animals are, have been infected/exposed or are likely to be infected with an infectious or contagious disease.

- If after such examination, there is reason to believe that an animal's health condition places other animals at risk, event officials may isolate such an animal, and other animals that may have been infected/exposed.

- All participants agree to fully cooperate with event officials and abide by their decisions/instructions. Failing to comply shall be grounds for immediate expulsion of the participant from the grounds and potential disciplinary action by organization, local/state or federal animal health officials.

2. Report Suspicion of Sick Horses: A horse entering the event grounds may be infected with an infectious disease agent or incubating a disease and not showing clinical signs of disease. The stress of travel and the stress of competition may result in a horse becoming clinically ill and displaying clinical signs of a disease during the equine event. Horses displaying clinical signs of disease pose a significant risk for disease spread to the entire population of horses. Consider an event policy requiring that any suspicion of illness in horses, including a temperature over 102°F, be immediately reported to a designated event official. All individuals on the premises should be made aware of this reporting requirement and be provided the name and telephone number of the designated event official to contact. The designated event official, who is to receive reports of illness, should have the authority and responsibility to immediately take necessary actions, such as enactment of an isolation plan to remove the suspect horse from the general population of horses at the event. The event manager should contact the event veterinarian for specific recommendations on how to manage a suspected sick horse.

3. Isolation of Sick Horses: Sick horses shedding an infectious disease agent can transmit an infectious disease agent directly and indirectly to susceptible horses on the event premises. The immediate isolation of a sick horse is essential for prevention of disease spread. Restrict isolation area access to the minimum number of individuals to provide needed care for the horse. Optimally, these people would not handle any other horses on the premises or have access to any other areas of the premises. If this level of control is not possible, then with veterinary consultation, institute a plan to use barrier precautions with appropriate use and disposal of personal protective equipment. The infectious disease control plan guidance documents provide additional

information for isolation protocols and procedures. (See Part 2 Enhanced Biosecurity and Infectious Disease Control for Equine Events and Appendix S - UC Davis Center for Equine Health *How to Set Up a Disease Isolation Unit at a Farm or Show*) and Appendix T – Equine Event Isolation Protocol Guidance)

4. Temperature Monitoring of Horses: A requirement for monitoring horse temperatures two (2) times a day and documenting temperature readings in a log is an easy, efficient, early disease detection tool for horses on the event premises. Temperatures taken immediately after transport or exercise may be temporarily elevated, so the initial temperature monitoring should be after the horse is settled in the stable. A horse rectal body temperature over 102°F should be immediately reported to a designated event official. Horses with rectal body temperatures between 101°F and 102°F should be monitored for other signs of disease and have their temperature retaken in one (1) hour. To ensure compliance with the horse temperature monitoring requirement, event staff should perform random audits of temperature monitoring logs. Consider requiring the posting of a Temperature Monitoring Log on the stall door which will allow an event official to easily perform checks on temperature recordings. (See Appendix G - Stall Temperature Monitoring Log)

5. Monitoring of Horse Health: Continuous health monitoring of all horses on the premises during the event is important. Designated event staff should perform a periodic walk-through of stables and event grounds to directly observe horses for any clinical sign of disease. Any sign of disease should be reported to the designated event official with the authority to initiate immediate disease control measures, such as isolation.

6. **Equipment Handling:** Contamination of equipment by body fluids, such as sweat, material from the nostrils and manure/soiled bedding, can spread pathogens between horses at the event. Some pathogens may be spread on shared equipment, such as grooming supplies, wipe rags, water buckets, hoses and tack. Water hoses that make direct contact with contaminated surfaces on water buckets can transmit disease agents to the next bucket contacted. Thorough cleaning and disinfection of shared equipment between uses is recommended. To decrease environmental contamination, event management can clean and disinfect all areas which are touched by a person's hands or horses, such as fences, wash racks, bathroom sinks, faucets and door handles on a daily basis. Event management should discourage participants from sharing equipment. Posting signage around the event grounds will serve as a reminder to participants.

Hoses which make direct contact with buckets can potentially pick up and transfer disease agents

References:

1. Dr. Roberta Dwyer video entitled, *How to Clean/Disinfect Horse Equipment* http://www.thehorse.com/Video.aspx?n=how-to-clean-disinfect-horse-equipment&vID=497
2. Dr. Roberta Dwyer video entitled, *How to Clean/Disinfect Water Buckets and Troughs* provides detailed steps to decrease disease risk associated with these items. (http://www.thehorse.com/Video.aspx?n=how-to-clean-disinfect-water-buckets-and-troughs&vID=498)

   (See Appendix H - *Don't Share Equipment* Signage and Appendix I - *Top Tips to Keeping Your Horse Healthy at Shows* Poster)

7. Limit Horse-to-Horse Contact: Pathogens may be directly transmitted between horses through nose-to-nose contact, therefore, elimination of potential areas for direct horse-to-horse contact in the stabling, wash rack and exhibition areas is recommended. To reduce environmental contamination, common areas should be washed and disinfected daily.

A sick horse can spread pathogens by direct contact with another horse or indirectly by contaminating a communal surface or item, such as a fence, a hose or a lead rope.

8. Limit Indirect Horse Contact: Surfaces contaminated by horse secretions may serve as a source of infectious pathogens. Indirect disease transmission is possible if secretions from an infected animal remain viable on an inanimate object and a susceptible animal makes contact with the object by licking, sniffing, or having to eat or drink from the object. Horses should not be permitted to be tied to fencing outside the arenas or stabling areas since the fencing can be contaminated by secretions from an infected horse.

9. Restrict Dog Movement: Dogs moving freely around horses present a danger to horses and riders and may carry infectious disease agents from one location to another on the premises, potentially exposing horses to infectious disease agents. Prohibiting dogs on the event premises or restricting access to only dogs on leashes controlled by a person may improve safety and significantly reduce risks of disease transmission. If leashed dogs are permitted on the premises, they should be restricted from the stabling and feed storage areas. The event staff should have instructions for managing incidents of dogs found in restricted areas, off leash or freely roaming the premises.

An effective leash policy should be enforced to ensure dogs remain on a leash under control by an individual.

Strategically placed handwashing stations for exhibitor and visitor use can reduce disease agent spread throughout the premises.

10. Limit Human-to-Horse Contact: Human contact with multiple horses should be avoided. Show officials required to contact multiple horses should, at a minimum, be required to perform hand hygiene procedures (hand washing or use of an alcohol-based sanitizing product) between horse contacts or between classes. Where bit inspection is mandatory, the event official conducting the inspection should use and change disposable gloves or use hand sanitizer between each horse inspection. Horse show officials can ask the rider of groom to open the horse's mouth to check bit or tattoo. Visitors can also pose a significant disease transmission risk due to the unknowns of their previous horse contacts. Visitors should not be permitted to contact horses without washing hands or using hand sanitizer immediately before and after the contact.

Visitor contact with exhibiting animals can spread disease agents between animals and humans.

11. Visitor Access Policy: Human traffic at event venues can be a potential mechanism for spread of infectious disease agents. Restrictions or limitations on direct visitor access to animals can protect both human and animal health. Visitors should not be permitted to feed horses at the venue. If visitors are permitted to have direct contact with horses, event management should encourage hand-washing or use of hand sanitizers before and after direct contact with horses. (See Appendix J - Center for Disease Control(CDC) *Wash Hands When Leaving Animal Exhibits* Poster and Appendix K - CDC *Be Safe Around Animals* Poster)

12. **Vector Control Program:** Vector borne diseases are those in which transmission of a pathogen is by a vector, such as mosquitoes, ticks, fleas and flies. Vector transmission occurs when an insect acquires a pathogen from one animal and transmits the pathogen to another animal. Insects can act as a mechanical vector, which simply transfers the disease agent from one host animal to another. In some cases insects act as a biological vector, which involves modification of the agent by the insect or tick before transmission to a new host animal. Elimination of insects, or at least maintaining separation from the host, is critical to controlling vector borne diseases. Elimination of standing water, manure piles, tall weeds and brush are some methods for controlling insects and ticks. A multifaceted vector control program should be part of a biosecurity plan. For large events anticipating significant horse traffic and accumulation of manure, consult an insect control specialist for the most appropriate recommendations. During the event, recommend application of topical insect repellent for horses at the event. (See Appendix L - Routes of Disease Transmission and Control Measures for Equine Events)

13. Wildlife Control Program: Wildlife, birds and vermin may introduce and spread infectious disease agents. Hay and grain attract such pests and if contaminated may serve as a point of distribution of an infectious disease agent. Human food attracts raccoons and other wildlife that may transmit disease, such as rabies, to animals or humans. For reducing disease transmission risks at the event premises consider incorporating a control plan for wildlife, insects, ticks, birds and rodents. 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. (See Appendix M - Wildlife, Bird and Rodent Control Measures)

14. Control and Track Horse Movement: It is important for event management to know what horses are on the event premises and where they are stabled. A comprehensive check-in and check-out procedure will provide the event manager the opportunity to obtain and/or validate essential information from owner/agents. Check-in information should include valid contact information of the party responsible for the horse(s). For each horse entering the premises, management should also obtain the address of the home premises or horse location prior to the event if other than the home premises and confirm the stabling location on the event premises. Information that should be collected from the owner/agents when moving horses from the event (check out information) should include: owner/agent contact information (including cell phone number and email address) and the intended destination for the horse(s) after leaving the event. This information becomes essential in an infectious disease outbreak at or following an event. This information allows for tracing and contacting owner/agents of potentially exposed horses.

Tracking horse movement at an equine event is critical to determining disease exposure when an infectious disease occurs at the event.

15. Post Adequate Biosecurity Signage: Clearly communicate event biosecurity measures to event participants before and during the event. Place appropriate signage around the grounds to remind participants of expected compliance with biosecurity measures. Stable and barn signage should target biosecurity practices to prevent animal-to-animal contact, equipment sharing and feed contamination. Show ground signs should target parking and access areas, hand washing/ sanitization stations and event policies for dogs. Wash stall signage should discourage horse-to-horse contact, sharing of equipment and direct horse contact with hoses. Adequate signage for traffic flow on designated routes to parking areas for exhibitors, vendors, haulers, and visitors is also essential to minimize risks of disease introduction.

16. Medical Device Use and Disposal: Needles and syringes used to administer medications at an event pose a safety hazard and potential disease transmission risk. Pathogens in blood can be transmitted from one horse to another through the use of contaminated needles. Event policies should include no needle reuse and mandatory disinfection of any blood contaminated equipment, such as dental and lip tattoo equipment. Appropriate medical waste disposal protocols should be implemented which includes proper needle disposal into sharps containers and medical waste removal of full sharps containers.


Needles and syringes are a safety hazard; if contaminated with blood they have the potential to spread disease.
All needles should be disposed of in a sharps container and all syringes should be placed securely in medical waste.

17. **Cleaning and Disinfection Protocols:** Event premises sanitation before, during and after an event is an important risk reduction element for disease transmission.

- **Step 1:** Organic matter, such as manure and soiled bedding, should be thoroughly removed.
- **Step 2:** Wash walls and floors with soap and rinse with water.
- **Step 3:** Allow time to dry.
- **Step 4:** Apply a disinfectant. Use disinfectants according to label directions following all safety precautions. Comply with all product label application instructions and or maximum efficacy to ensure adequate disinfectant contact time with surfaces.

Sunlight can act as a natural disinfectant for many pathogens, so allow buckets, equipment and tack to dry in the sun after cleaning and disinfecting. All buckets, tack, equipment and vehicles should be appropriately cleaned and disinfected between animals and before being taken to the home premises.
Reference: Stall Cleaning Disinfection Videos, by Dr. Roberta Dwyer – Provide step by step instructions which are accessible online at http://www.thehorse.com/Video.aspx?n=stall-cleaning--disinfection-series-part-1-cleaning&vID=488
(See Appendix N - Equine Event Cleaning and Disinfecting Recommendations)
(See Appendix O - Characteristics of Selected Disinfectants - Center for Food Security and Public Health)

18. Communicate Biosecurity Plan: For successful implementation, the event biosecurity plan must be adequately communicated to event participants, the general public and the event staff. Provide event participants with a written copy of the event biosecurity requirements before the event. Consider including the biosecurity measures in published event documents, such as premium booklets, bylaws and/or rules and regulations. Consider incorporating several communication modalities to ensure adequate dissemination of the event biosecurity information. Social media websites, blogs, listservs, Facebook and Twitter are a rapid and efficient means to communicate important information to participants. Also consider having event participants sign a form agreeing to comply with the event biosecurity measures while at the event. (See Appendix P - Sample Letter Mailed to Registered Exhibitors)