LARGE ANIMAL CLINIC
VETERINARY MEDICAL TEACHING HOSPITAL
UNIVERSITY OF CALIFORNIA, DAVIS

INFECTIOUS DISEASE PROTOCOL

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VETERINARY MEDICAL TEACHING HOSPITAL
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LAC Infectious Disease Contacts

IDC Officer	LA Patient Care Manager
Large Animal Clinic Director	ICU Supervisor
VMTH Director	Barn Crew Supervisor
Microbiology Lab Faculty Director	VMTH Safety Officer
LA Patient Care Supervisor	

Preface and Protocol Summary

The objective of this protocol is to provide a standard policy for sanitary practices to be followed in the control of infectious diseases in the Large Animal Clinic of the VMTH. The primary goal is to minimize animal-to-animal contact, animal-to-human contact, and human-to-animal transmission of infectious diseases. These protocols are important to protect animals and humans which are vulnerable or less resistant to disease.

Agents of concern:

1. Fecal-oral agents such as *Salmonella, Cryptosporidium*, rotavirus, coronavirus, *Giardia*, enteropathogenic *E. coli, Lawsonia intracellularis*, and Clostridium *difficile/perfringens*.
2. Fomite (including hand) movement of agents such as *Streptococcus equi ss equi* or wound contaminants such as multi-antimicrobial drug resistant *Staphylococcus* (methicillin resistant) and *Pseudomonas* and other multidrug resistant bacteria.
3. Bite wounds and exposure of cuts to saliva, CSF (rabies) or urine (*Leptospira*).
4. Aerosol or fomite exposure to agents such as equine influenza, *Coxiella burnetii, Coccidioides immitis*, primary concern during sporulation phase, equine herpes-1, vesicular stomatitis virus, equine viral arteritis, *Rhodococcus equi*.
5. Blood borne diseases such as equine infectious anemia, piroplasmosis (*Theileria* or *Babesia*)
6. Additional livestock diseases: Bovine viral diarrhea, IBR (herpes), MCF (herpes), coronavirus, Ovine Progressive Pneumonia, Caprine Arthritis Encephalitis Virus, Porcine Reproductive and Respiratory Virus, etc.

Basic personal habits to minimize the transmission of infectious diseases

1. Disposable gloves are to be worn with every hospitalized patient. They are to be changed between patients (i.e., new gloves for each patient) and hands must be washed or sanitized with alcohol based sanitizer before new gloves are put on. Hands must be washed or sanitized with alcohol based hand sanitizer before and after gloves are worn.
2. Wash hands between handling patients. Frequent hand washing has been proven to be the most important component to prevent the spread of infectious diseases. Hands should be scrubbed for at least 30 seconds. Hands must be thoroughly dried afterward. For appropriate hand washing/hygiene technique, please see:

   http://www.nejm.org/doi/full/10.1056/NEJMvcm0903599?emp=marcom&
3. Avoid stepping in feces and thoroughly clean foot wear with a brush and disinfectant after contact with organic matter, or where required in the facility.

4. Use clean coveralls or lab coats, gloves, disposable booties or rubber boots, and hair cover (latter for airborne diseases or anytime if long hair) when handling patients suspected or known to be infected with an infectious agent. Remove soiled outer garments and plastic booties between patients.
5. Never contaminate an animal's feed supply by walking on the hay in the stall. Do not place hay or feed on the barn floors prior to feeding.
6. Clean up manure and wash area as soon as possible.
7. Restrict the travel of animals that are in the clinic suspected or known to be infected with an infectious agent. Notify IDC office if animal must be moved.
8. Place animals in clean stalls. Do not use stalls that have not been cleaned and disinfected.
9. Do not share equipment between animals unless the equipment has been cleaned and disinfected.

Roles and Responsibilities

Hospital Director – Is responsible for the clinical program and hospital operation that has a mechanism to prevent and control nosocomial infections. The Hospital Director supports the role of the Infectious Disease Officer and responds to incidents of non-compliance with IDC protocols that are not resolved.

Infectious Disease Officer – Provides leadership in the Large Animal Clinic administering the Infectious Disease Protocol, working with the Infectious Disease Control Committee, clinicians, staff and students. The IDC Officer reports to the Hospital Director. The IDC Officer serves as consultant to clinicians and makes the final decision of how a patient should be handled to control the spread of infectious disease.

Clinicians – Must perform physical examinations and obtain patient history information to determine if the patient is a suspect of carrying an infectious agent (see next page for many of these). The patient must be continuously monitored by the treating clinician to determine if symptoms change while the patient is hospitalized in the VMTH. The clinician must contact the Infectious Disease Control Officer to discuss and decide how the patient should be handled if the patient is known or suspect of being infectious/contagious. The clinician provides training and monitoring of students to ensure compliance with infectious disease protocols.

Microbiology Diagnostic Laboratory Chief of Service and Lab Supervisor – Provides oversight for routine infectious disease surveillance and monitors daily laboratory results to identify serious pathogens that may appear in the clinic. The Laboratory Supervisor/Chief of Service provides the initial detection and reporting of the presence of infectious agents that pose risk for other patients or personnel. They are to call or text the IDC Officer and attending clinician for positive results of *Salmonella, C. difficile*, MDR bacteria, MRSA, etc. If called, and there is no answer nor voice mail, then results are to be emailed. Results for positive *Cryptosporidium* or *Giardia* tests are to be emailed or called immediately to the IDC Officer by the Parasitology Lab. Positive results for rotavirus are to be emailed, texted or phoned to IDC Officer by Immunology Lab. Monthly logs of *Salmonella,*

Clostridium difficile, MRSA, MDR will be provided by the Microbiology Supervisor/Chief to the IDC Officer.

Clinic Nursing Managers – Implements the IDC protocol requirements for posting notices, arranging for relocation of patients based on IDC officer orders, and provides training, equipment and materials for protecting personnel. Monitors compliance with cleaning protocols in the clinic and arranges for environmental cultures according to protocol. This position is responsible for notification of staff and students via postings on stalls/cage/run, or memo/email if necessary regarding special handling procedures of infectious patients.

Staff and Students – Comply with protocols and wear clean outer garments (as defined by the service, for example surgery may require scrubs be worn; medicine may require coveralls or clean polo or long sleeved shirt) and wash hands/wear gloves as necessary. Report any situation where infectious disease control measures are being ignored or are inadequate. Appropriate attire should be worn at VMTH depending on service, and this attire should be removed upon leaving the VMTH (i.e. not worn elsewhere).

Section I
General Clinic Practices

A. Access to Barns (Personnel and Animals)

1. Access to B Barn, C Barn, D Barn, E Barn and LA ICU is restricted to designated Barn Crew members, technicians, clinicians, residents and students assigned to the cases. Clients are to be escorted and instructed to not touch other patients in the clinic, and are to remain stall side and obey all IDC policies. Refer to the posted visitation policy at the front reception desk, entrance to ICU and B Barn. Tours of the facility must be coordinated through the Director's Office. Tours may be conducted of the main B-Barn (excluding ICU) and Receiving.
2. Horses or camelids that are medical or surgical cases and do not have a contagious disease are permitted in the B Barn area. Colic or gastrointestinal cases considered for surgery or that require intensive care are to be located in ICU. Exotics (other than camelids), nondomestic species, and birds are to be located in the area of C Barn pen designated for nondomestic species, if necessary. Housing of exotics in B Barn will be on a case by case basis pending consultation with the IDC officer.
3. Animals that are not patients in the B-Barn area and any dogs, cats, birds, or other 'stray' animals, except for service animals, are not permitted in or around the area.
4. The gates north of the aisle ways in B Barn are to be kept closed except when moving horses.
5. All top doors (of stalls) are to be kept closed unless otherwise approved by IDC officer.

B. Hospitalization of Animals

1. Gloves are to be worn with all animals hospitalized in B barn (and elsewhere including G barn). Hands must be washed or sanitized with hand sanitizer before and after gloves are worn.
2. Wash hands between handling patients. Frequent hand washing has been proven to be the most important component to prevent the spread of infectious diseases. Hands should be scrubbed for at least 30 seconds. Hands must be thoroughly dried afterward. For appropriate hand washing/hygiene technique, please see:

   http://www.nejm.org/doi/full/10.1056/NEJMvcm0903599?emp=marcom&
3. All animals admitted to B or C Barn (and elsewhere in large animal clinic) are to have an admission fecal sample turned in for *Salmonella* culture on the day of admission.

Horses in ICU, NICU or Isolation are to have daily fecal cultures submitted. All dairy cattle in C barn are to have daily fecal cultures submitted for 5 days.

4. Horses with persistent reflux should have gastric contents turned in for Salmonella PCR at least once in addition to daily fecal submissions.

5. Animals are not allowed to graze on B barn lawn (except for exceptions granted by IDC Officer for horses that cannot ambulate)

6. All hospitalized animals are to have an individual thermometer purchased. These are charged to the client and should be sent home with the patient. A shared thermometer can be used for outpatients, however protective thermometer sleeves must be used and the thermometer should be disinfected with Accel wipes after use.

C. Admission of Animals with a History of Salmonellosis

1. Admissions office staff, or the clinician if admitted after hours, is required to check the computer if the animal has been seen at the VMTH within the **last four months** to determine if the animal was tested positive for salmonellosis. The record should be marked under MEDICAL ALERT by IDC Officer or Admissions staff supervisor.

2. **Horses and camelids must be hospitalized directly into Isolation if:**

   - They were in Isolation and tested positive for *Salmonella or Clostridium difficile* (toxin producing strain-i.e., positive toxin ELISA) within the last 30 days, **or**

     i. Such animals may be admitted to B Barn after 2 weeks of discharge from Isolation IF they have 5 negative *Salmonella* cultures or 2 negative Salmonella PCR results with enrichment and do not have diarrhea, colic, reflux, leukopenia, or fever. *C. difficile* cases may be admitted if they have one negative enteric panel (i.e. fecal toxin test negative) and no diarrhea, leukopenia, or fever. These horses should have enteric precautions placed on the stall with daily IDC fecal cultures.

   - Has any two of the following four parameters (1) diarrhea, (2) a fever (>101.5 for adults) (**> 102.5** °F for neonates 0-14 days, or **> 102** °F for foals 15 days-90 days) (3) neutropenia (<2000) or 4*) C. difficile* positive toxin fecal test, must be moved to Isolation. This is the responsibility of the clinician. A technician or student assigned to the case is responsible for advising the clinician and the IDC officer of such results.

- Animals presented with diarrhea only may be required to be directly admitted to the Isolation facility. Horses with "colitis" should be admitted directly to Isolation.

- Animals with fever of unknown origin and lymphopenia (<1000/µL). History of low grade colic or diarrhea and lymphopenia (<1000/µL) or neutropenia (<2000/µL), at discretion of IDC Officer (coronavirus suspect).

- Animals from a farm with an outbreak (>1 affected animal), or with confirmed strangles, coronavirus, or other contagion.

- Animals from farms with a history of Salmonella cases in the last 6 months should be admitted into Isolation.

3. Admission in B Barn and C Barn Equine Section

- Horses or camelids with no evidence of contagious disease can be admitted to B barn (B11-48).

- Horse or camelids with no evidence of clinical salmonellosis (culture positive and clinical signs) within the 4 months before admission may be admitted without enteric precautions to B11-48.

c. Animals that have tested positive for *Salmonella* or *C. difficile* less than four months ago should be admitted with enteric precautions until they have 5 negative *Salmonella* cultures, 2 negative PCR results for Salmonella, and/or a negative enteric panel for *C. difficile*.

D. Enteric Precautions/ "IDC Protocol" (Barrier Precautions)

Enteric precautions ("IDC protocol" sign), consisting of full barrier precautions, disinfectant foot bath and restricted movement, must be implemented when any animal has diarrhea or unexplained fever. Such animals may shed an enteric pathogen in the feces. An enteric precaution sign (designated "IDC protocol") must be posted on the stall. If the animal has diarrhea and fever or leukopenia, the animal must be transferred to Isolation as stated in B2. Horses on IDC protocol for diarrhea, leukopenia or fever of unknown origin should have daily IDC fecal *Salmonella* cultures performed for 5 days.

"IDC protocol" consisting of full barrier precautions, disinfectant foot bath and restricted movement, are to be instituted any time an animal develops a fever that is new, unexpected, or from an unknown source, nasal discharge, or cough. The IDC Officer is to be notified immediately and appropriate testing (such as nasal or nasopharyngeal swab for infectious agents, CBC etc.) instituted.

LAC universal IDC precautions for handling diarrheic animals or those suspected of contagious respiratory disease or other potentially contagious disease include:

1. Wear disposable gloves and plastic booties or rubber shoes when handling an animal. Rubber footwear, if used in place of plastic booties, must be scrubbed with disinfectant and dipped in an accelerated hydrogen peroxide (AHP) (e.g. Accel) foot bath outside the stall. A boot brush must be used to thoroughly clean the bottom of the boot.
2. Wash hands before and after handling the animal. Frequent hand washing has been proven to be the most important component to prevent the spread of infectious diseases.
3. Wear a **clean** lab coat or coveralls that remain at the patient's stall. Dirty lab coats or coveralls are to be replaced by the service AHTs.
4. Use a thermometer that is assigned to the patient. Do not share thermometers between patients.
5. The patient should be kept in the stall; IDC officer permission is required if the horse is to be taken out of the stall.
6. Fecal samples are to be submitted daily for *Salmonella* culture. In addition, a *Clostridium difficile* toxin assay should be performed on the first day if the horse has diarrhea or leukopenia, with a history of antibiotic use. If the animal is presented with diarrhea and is placed under enteric precautions, the owner should be charged for the first cultures and assays. Daily *Salmonella* cultures (for 5 days) of this case are charged to IDC.
7. The person handling the animal is responsible for ensuring that the area/equipment is cleaned and disinfected before leaving the area.
8. Animals under "IDC protocol" sign or enteric precautions in B Barn are not to be moved to radiology, endoscopy, ultrasound or other diagnostic areas until end of the day (after last case), unless it must be performed on an emergency basis (for example, if surgical decision making is involved). Once the animal has left the area, Barn Crew must be notified to clean and disinfect the area.

E. Fever of Unknown Origin or Acute Respiratory Cases

1. Horses with fevers of unknown origin may be required to have nasal swabs for respiratory PCR panels performed as per clinician and IDC Officer. Those with acute or subacute respiratory signs (cough, nasal discharge) should also have these done.

2. Horses with fever of unknown origin may be required to have feces submitted for coronavirus testing, or a diarrhea PCR panel, depending on history and signs. Horses with lymphopenia or neutropenia are in particular risk of having coronavirus, especially with low grade colic or cow pie manure.

F. Nasal Swab Protocol

Nasal swabs for respiratory PCR panel should be obtained with a rayon-cotton swab. Wood handled swabs should not be used. The nostrils should be cleaned free of dirt and debris with gauze or towels. One swab should be inserted into each nostril, and ensure enough time to moisten the swab. The two swabs can then be combined into one large red top tube, and refrigerated if any delay.

Additional infectious disease precautions

Individual sanitation requirements under enteric or IDC precautions include taking all measures to ensure no material containing infectious agents is passed between animals. Additional IDC precautions include:

1. Only sterilized or disinfected endoscopes (accelerated hydrogen peroxide [e.g.- Resert] should be used for endoscopy; NG tubes as per hospital protocol (see below)) equipment is to be used. Dirty or used equipment is NOT to be shared among animals. Wash and disinfect immediately after using the equipment so it does not serve as a fomite.
2. Red buckets are designated for infectious material, such as reflux, feces, and purulent discharge. Buckets are to be cleaned and scrubbed with soap, then disinfected with AHP (e.g. Rescue or Accel) solution (3 oz. per gallon dilution, unless positive for known pathogen, then 8 oz. per gallon), rinsed, dried and stored in clean location.
3. Grey buckets are to be used for cleaning tasks, such as to hold solution to clean a sheath or to clean float blades, as well as tubing with mineral oil. Buckets are to be cleaned and scrubbed with soap, AHP (e.g. Accel) solution (3 oz. per gallon for general use; 8 oz. per gallon if positive for known pathogen dilution), rinsed, dried and stored in a clean location.
4. Shallow, red (AHP, e.g. Rescue or Accel brand) or green (peroxymonosulfate disinfectants, e.g. Virkon or Trifectant) buckets are to be used as foot baths only.
5. Black rubber tubs are to be used as feed buckets ONLY. One rubber tub should be assigned to a particular case and kept with that case for the duration of the hospitalization. Upon discharge, the bucket is to be scrubbed with soap, and then disinfected with AHP (e.g. Accel) (3 oz. per gallon for general use; 8 oz. per gallon if positive for known pathogen) by barn crew.
6. Buckets are to be labeled according to their location (e.g. B-Barn treatment room, surgery breezeway, etc.) It is the responsibility of the person using the equipment to ensure it is cleaned.
7. NG tubes are to be washed with soap and water, then a cotton ball is forced through with water. The tube is then to be soaked in chlorhexidine solution. After disinfection with chlorhexidine, a cotton ball is forced through again with water, the tube is then to

be rinsed with water, and then air dried. Once dry, it is to be packaged (1-2 tubes per package) for autoclaving at central services.

8. Technicians working with patients in Isolation are not to work in any B-Barn area, unless as instructed by the ICU or Isolation supervisor.

G. Infectious Disease Surveillance

1. Any person aware of a horse with diarrhea must immediately notify the clinician and the IDC Officer if there is any question about policy. If the diarrhea is not caused by a laxative, a CBC is to be done, the rectal temperature taken, and a fecal sample submitted for *Salmonella* culture/PCR within an hour and the enteric precaution or "IDC protocol" sign posted. If the horse has been on antimicrobials, it should also be tested for *Clostridium difficile* using fecal ELISA or PCR for toxin genes. If the animal also has a fever or neutropenia (see above section B-2), it is to be moved immediately to Isolation. The CBC and *C. difficile* immunoassay are charged to the owner, as this is part of a database for diarrhea workup.

2. An admission fecal sample is to be collected for *Salmonella* culture on every animal admitted to the hospital (on the day of admission, as soon as possible upon admission). The student or resident should collect the admission fecal sample during the rectal examination, or at surgery during enterotomy if no feces were present on the rectal examination. If the lab is closed, this sample should be submitted to ICU staff for submission.

3. A fecal sample (at least 15 gm, or about one to two fecal balls) is to be collected at receiving and daily (for 5 days) thereafter from any animal with the following conditions:
    a. A history of salmonellosis
    b. An animal under enteric or IDC precautions.
    c. Dairy animals (calves and cows)

Patients in ICU, NICU and Isolation need daily fecal samples submitted for Salmonella culture for duration of hospitalization. Fecal samples are to be submitted to Microbiology Lab for *Salmonella* culture and *Clostridium difficile* testing when clinically indicated. The enteric panel is charged to the owner. Daily salmonella cultures are charged to IDC X0L910.

4. Horses with a history of methicillin resistant *Staphylococcus* infections should have the site re-cultured if they are to be re-hospitalized. MRSA horses are to be housed in isolation barn or B barn under IDC precautions (full barriers) depending on discharge, culture status, isolation stall availability, and recommendations of IDC Officer. If admitted with MRSA, or draining exudate that cannot be controlled, the horse may be required to be housed in Isolation. Nasal swabs, especially of alar fold, should be taken to evaluate for MRSA carrier status. This

is not required for coagulase-negative Staph.

5. The online lab submission for fecal samples must include the time and date of fecal sample collection, the stall number, the patient number (or client name), and the name of the person who collected the sample. If the Microbiology laboratory or Central lab Receiving is not open, samples are to be placed in the refrigerator in the B barn and submitted to CLR or Microbiology when it is open.

6. Clinicians are encouraged to submit fecal samples for *Salmonella* culture from sick animals that are undergoing or recently have undergone treatment with antimicrobial agents or changes in antimicrobial regimen. It is the responsibility of the service AHT to ensure that necessary fecal samples are submitted.

7. If a mare and foal are stalled together with one of them under IDC precautions, both are to have IDC fecal cultures submitted. A sample of colon contents is to be obtained from colic horses undergoing an enterotomy, if a fecal sample cannot be obtained at admission. The technician handling the case at admission or at surgery is responsible for collection of the sample.

8. Positive *Salmonella* results from the Microbiology Lab and suspect cases are to be communicated immediately to the clinician, LAC Barn Crew Supervisor, and the IDC officer to arrange for moving the animal to Isolation within two hours of receipt of results for positive cases, and placement of "IDC Protocol" (full barrier precautions and stall restriction) for "suspect" cases until finalized. If a clinician does not cooperate in the moving of an animal, the infectious disease officer, the Service Chief, the Associate Director LAC or the VMTH Director is to be notified immediately.

9. At least one CBC with differential is to be done for any patient with feces that are not formed. This should be repeated if the diarrhea persists or worsens at an interval determined by IDC Officer and clinician. Fees should be charged to the owner. During regular working hours it is the responsibility of the service technician to ensure this is done, and of the clinician at other times.

H. Environmental Cultures:

Surveillance of the environment for Salmonella are to be done using PCR after enrichment (selenite). Locations of surveillance are located in SOPs. Surveillance frequency is as follows:

1. ICU: weekly

2. NICU: weekly while occupied, monthly when empty

3. Isolation (equine): weekly while occupied, monthly when empty

4. C Barn: monthly, including Isolation
5. B Barn: Quarterly, including Receiving*
6. Surgery: Quarterly, and when positive animal in OR
7. Spot checks per IDC officer when positive animals are detected.
8. Exam rooms: when positive or suspect animal has been examined in room

Occasional culture or PCR for strangles, *Clostridium difficile*, rotavirus, coronavirus or other pathogens may be done on a case-by-case basis.

I. Disinfectant Use in LAC

1. The primary disinfectant in use at large animal clinic is an accelerated hydrogen peroxide compound, AHP (Rescue or Accel).
2. AHP (Accel or Rescue) is to be used at 3 oz./gallon for general use
3. AHP (Accel or Rescue) is to be used at 8 oz./gallon in equine and C barn isolation units, or when directed by IDC Officer.
4. Personal Protective Equipment: Accelerated hydrogen peroxide (Accel or Rescue) concentrate must be handled with gloves, eye protective goggles/shields, and long sleeves (as lab coat). Though PPE is not required for use with diluted, in use product, the IDC manual requires gloves to be worn at all times. Eye protective goggles/shields should be worn wherever splashes or sprays are possible, as during spraying stalls or rooms.
5. For cases that are positive for *Clostridium* (especially *Clostridium difficile* or *Clostridium perfringens*), a peroxygen compound (Virkon or Trifectant) is to be used instead of Accel.
6. Alcohol based hand sanitizers are to be maintained throughout B and C barns, and the VMTH and VM II.

J. Respiratory Infectious Disease Surveillance

1. Viral
    a. Horses with unexplained fever, mucoid or purulent nasal discharge or cough should be placed on IDC protocol and have the following samples submitted:
        i. CBC

ii. Nasopharyngeal swabs for equine influenza (ELISA), EHV-1, EHV-4, and strangles PCR. Nasal swabs for respiratory PCR panel should be obtained with a rayon-cotton swab. Wood handled swabs should not be used. The nostrils should be cleaned free of dirt and debris with gauze or towels. One swab should be inserted into each nostril, and ensure enough time to moisten the swab. The two swabs can then be combined into one large red top tube, and refrigerated if any delay.

iii. Horses with fevers of unknown origin may be required to have nasal swabs for Respiratory PCR panels performed as per clinician and IDC Officer. Those with acute or subacute respiratory signs (cough, nasal discharge) should also have these done.

b. If positive for influenza (Flu), strangles, or EHV-4 or EHV-1, move to Isolation.

c. The eastside of C Barn, after being depopulated of other horses, may be used for fever of unknown origin when GI signs are not present.

d. If a horse is neurologic and positive for EHV-1 in buffy coat, nasopharyngeal swab, or CSF it is to be moved to isolation (see neurologic case section). If horse is from a premise with known equine herpes myeloencephalopathy (EHM) or from a premise with >1 horse that has developed fever or neurological signs, or has acute signs consistent with EHM, it is to be housed in Isolation.

2. Bacterial (strangles)
Horse with RESPIRATORY PRECAUTIONS or "IDC protocol" sign for suspected respiratory signs (confined to stall, gloves, lab coats, booties or foot bath) and should have the following samples submitted:
Pharyngeal swab for gram stain and PCR (+/- culture) for *Streptococcus equi ss equi*.
If positive, move horse to E Barn Isolation.
If negative, maintain RESPIRATORY PRECAUTIONS.

K. Neurologic Infectious Disease

1. Gloves should be worn at all times with all neurologic cases, even outpatients.

2. EHV-1

- Any horse with neurological signs compatible with EHV-1 infection should be tested for EHV-1 using PCR analysis on nasopharyngeal swab and buffy coat. These signs include but are not limited to recumbency, dog-sitting, cauda equina signs [urinary incontinence, tail or perineal paresthesias], albuminocytologic dissociation with xanthochromia on CSF tap, or concurrent fever. Any horse with neurologic deficits that is positive for EHV-1 on nasopharyngeal swab or buffy coat is to be housed in

isolation. Suspect cases from farms with >1 neurological horse, or those with compatible and acute signs, are to be housed in isolation.

3. Rabies or unidentified acute (< 20 days) neurologic disease:
    a. Any horse with a suspicion of rabies or any acute (defined as < 20 day duration) neurologic disease should have IDC protocols (gloves, coats, foot bath, restricted movement) set up at the stall.
    b. A sign stating "Rabies Suspect" must be in place
    c. A contact sheet recording every person in contact with the horse is to be posted at the stall.

L. Methicillin Resistant *Staphylococcus aureus* (MRSA)

Animals with MRSA infections must be placed under "IDC Protocol" (full barrier precautions and restricted movement) and will be stall-confined except for urgent diagnostics/procedures.

The IDC Officer may determine that cases must be transferred to Isolation on a case by case basis, particularly when exudate or discharge is present, or nasal shedding of MRSA is detected with culture.

Prevention of zoonoses: good hand-hygiene protocol adherence, barrier clothing, gloves, and disinfectant foot bath. Cuts and abrasions should be kept bandaged and washed/disinfected often.

M. Methicillin Resistant *Staphylococcus* (other than S aureus, or coagulase negative)

These will be evaluated on a case by case basis with the IDC Officer and clinician

N. *Corynebacterium pseudotuberculosis* (Pigeon Fever)

Horses with *C. pseudotuberculosis* infections can be housed with B barn, however they should be placed on IDC protocol. Because the disease is spread by flies, they should be sprayed with fly spray twice a day, and any draining tracts should be surrounded with fly repellant ointment, such as Swat or VIP cream. If the abscess is draining, the horse should not be walked unless there is some way to contain the drainage.

O. Cleaning and Sanitation of the Facility

1. Any contamination of the facility by feces or material potentially containing infectious disease agents (such as purulent material, exudates, blood, urine, nasal discharge or other body fluids) outside a stall, in an alley, on a wall, or on the floor is to be scrubbed with detergent and then disinfected as soon as possible

using a shovel, disinfectant (AHP (e.g. Rescue or Accel, 3 oz. per gallon) or peroxygen compound (Virkon or Trifectant, as directed) and a scrub brush/broom before others can walk through it. The disinfectant may be gently rinsed down a drain with low pressure water. Water should not be allowed to enter any stalls. It is the responsibility of the person handling the animal at the time of contamination to clean and/or disinfect the area and to notify Barn Crew immediately**. Contact time for each disinfectant should be as per manufacturer recommendations (10 min for Rescue or Accel). Any person aware of such contamination is required to clean and disinfect the area or to arrange to have it done, if the person handling the animal fails to do so.**

2. The alley and floor of the barns are to be kept free of feces, bedding, and feed by sweeping or shoveling material away from stalls and disposing in a waste container. Material is not to be left on drain covers. It is the responsibility of the person handling the animal to clean up after the animal. Shovels, brooms, pitchforks, and other tools used to clean up fecal material or bedding are to be kept in disinfectant barrels. Hay, either intended to be fed or removed from a stall, is NOT to be kept in the aisle ways and should not be placed on the floor. It is to be thrown in the barn trash cans, manure bins (outside) or Barn Crew is to be notified to remove it.

3. Fecal contamination of the asphalt, Radiology, Receiving, or Surgery breezeway is to be picked up and deposited in a waste container. If loose feces are passed, the site must be scrubbed with soap or detergent and disinfected with AHP (e.g. Rescue or Accel [3 oz. per gallon]) or peroxygen disinfectant (Virkon or Trifectant, mixed as label direction). This is the responsibility of the person(s) handling the animal. If a client is handling an animal and neglects to clean up fecal material, it is the responsibility of the attending clinician or technician to clean it up or to have it cleaned up.

4 Areas of asphalt contaminated by feces of an animal moved to Isolation or by any animal with diarrhea are to be scrubbed with detergent, then with disinfectant AHP (e.g. Rescue or Accel [8 oz. per gallon]) or peroxygen disinfectant). The initial AHP (e.g. Rescue or Accel) should be rinsed, then the area should be redisinfected with AHP (e.g. Rescue or Accel). The second disinfectant is not to be rinsed off. If peroxygen compound such as Virkon or Trifectant is used, it should not be allowed to contact or mix with AHP (e.g. Accel) or other disinfectants (potential for toxic fumes form), without thorough rinsing. This is the responsibility of the person handling the animal, or the clinician, if the handler is the client. Notify Barn Crew if it is not possible to clean the area.

5. Feeds such as grain and pellets are to be stored in sealed containers to prevent contamination from environmental dirt and vermin. Hay soiled by feces should be discarded and not fed to animals.

6. It is the responsibility of the technicians to maintain cleanliness and sanitation of

areas of B, C, or D Barns, as assigned by the LAC Manager. A list of the assigned areas is to be maintained in the B Barn pharmacy. The assigned areas are to be inspected routinely and at least quarterly by either barn crew supervisor, technical supervisor, the Infectious Disease Officer, or the Director of LAC or the VMTH.

P. Exercising or Moving Horses

1. Animals in the B-Barn area (not ICU) are to be walked only in the designated exercise area (in front of hay barn and farrier shop) or round pen used for this purpose. Animals should not be allowed to walk on fecal material left by other animals. After exercising a horse, any fecal material is to be picked up and deposited in a waste container. The area should be cleaned first, then must be covered with AHP (e.g. Accel) solution (3 oz. per gallon) and left to dry. Owners, or persons designated by the owner, may exercise animals providing they follow the above conditions.

2. Animals are not to be moved from one stall to another without a medical reason. If in doubt as to what constitutes a medical reason, the clinician or IDC officer should be consulted.

3. After weighing an animal, fecal material should be removed from the scale and disposed in a waste container.

4. Foals and their dams are allowed to be exercised in the ICU pasture(s) or round corrals that are void of fecal material, as long as they have no infectious contagious disease concerns including *Rhodococcus equi*. Fecal material should be picked up after the animals are removed from the paddock. The use of the ICU pasture by other horses must be approved by the Infectious Disease Officer (IDC) Officer.

Q. Equine Section of C Barn

5. The stalls C1-4, Cll-14 are not to be used unless there are no vacant stalls in B Barn that can be used for day cases.

6. Horses should <u>not</u> be housed in C Barn when an animal with suspected respiratory disease is housed there. (Day stalls are closed)

7. If needed, the most northerly pens (C1-4, Cll-14) on the equine end of the east side of C Barn are to be filled first. The pens/stalls immediately adjacent to the gate separating the C Barn livestock area should be left vacant. C1 and C14 stalls should be used after C2-3 and C12-13.

R. Arena

Fecal contamination of the arena and jog path is to be picked up and deposited in a waste container. This is the responsibility of the person(s) handling the animal. If a client is handling an animal and neglects to clean up fecal material, it is the responsibility of the attending clinician, student, or technician to clean it up or ensure that it is cleaned.

S. LAC Exam Rooms

1. No animal with a contagious disease is permitted in LAC Exam Rooms. Such cases are to be received in Isolation facility.
2. Enteric or IDC precautions are to be followed when receiving an animal with signs of an infectious disease, such as diarrhea, fever, or reflux (latter when not due to surgical reason). If it is impossible to know about the infectious nature of a horse's disease process prior to examination, it may be worked up in the VM II Medicine exam room. Suspect or ambiguous cases can be received under "IDC Protocol" in the VM II exam rooms, with approval of IDC Officer. All personnel and students handling such a case should wear protective clothing and gloves as per IDC protocol, with disinfectant foot bath outside of door. If the animal is found to have a potentially contagious disease, it must be moved to isolation and the exam room is to be red-tagged. Barn Crew is to be notified immediately for proper cleaning of the exam room.
3. If an animal is found to have a diarrhea-related illness (2/4 isolation criteria) while in a LAC exam room, the animal is to be moved immediately to Isolation, and the exam room is to be closed to all animals and personnel traffic until it has been cleaned and disinfected. If only diarrhea is present (no fever or leukopenia), the IDC Officer is to be notified. If profuse or frequent diarrhea is present, the horse is best housed in isolation barn, even if leukopenia or fever is not present. It is the responsibility of the technician or clinician to make arrangements to ensure the area is cleaned and disinfected. Standard cleaning and disinfection protocol must be initiated. Barn Crew is to be notified also.

T. Radiology Exam Rooms

1. No animal with an infectious disease is to be allowed in radiology without permission of the infectious disease officer (IDC) or the Service Chief for radiology.
2. It is the responsibility of the radiology technicians to maintain cleanliness and sanitation of the radiology area and equipment during regular working hours. It is the responsibility of the night cleaning person to re-clean and disinfect the walls and the floor.
3. Equipment not used routinely is to be stored out of the radiology rooms.
4. Any fecal contamination is to be disposed of immediately and the standard cleaning and disinfection (i.e., detergent scrub, then AHP (e.g. Rescue or Accel)

(3 oz./gallon; 8 oz per gallon if confirmed *Salmonella* or *Cryptosporidium* positive)) protocol must be initiated before the next user enters the room.

5. All aprons worn in radiology are to be cleaned with soap and water whenever contaminated with feces or other material possibly containing an infectious disease agent. Afterwards, AHP (e.g. Accel or Rescue) wipes should be used to disinfect aprons). If no visible contamination of aprons has occurred, they should be wiped once with AHP (e.g. Accel) wipes. All aprons are to be cleaned at the end of each regular working day by the technician on duty.
6. During regular working hours, it is the responsibility of the radiology technician to ensure items (2-5) are done. At other times, it is the responsibility of the user.
7. If a radiologic exam is necessary for cases in Isolation or for cases to be admitted to Isolation and if the portable x-ray unit in Isolation is inadequate, the clinician is to arrange logistics for movement of case to radiology, and to notify the infectious disease officer or the Director of the LAC. All elective radiographs are to be performed after the end of Radiology service's outpatient exams, unless it is an emergency. Emergency xrays (as for acute colic cases) can be taken when required, but the IDC officer and Barn Crew should be notified. Before moving an animal to radiology, the hooves should be picked and the hoof should be washed with dilute AHP (e.g. Rescue or Accel) (3 oz. per gallon) solution to remove fecal material. Radiology is to be scheduled at the end of a regular working day after all other radiology cases have been processed, unless it is an emergency. The radiology suite and breezeway are to be cleaned and disinfected immediately after the animal has left the area and before any animals or persons are permitted access to the areas. It is the responsibility of the clinician and radiology technician to ensure the areas are cleaned and disinfected. The aprons and gloves used are to be disinfected with Accel wipes after the case leaves the radiology room.
8. If other unusual situations arise that are not addressed in this document, the Infectious Disease Officer, or Large Animal Clinic Director, is to be notified before any action is taken.
9. All fecal material from an animal with diarrhea or from an animal from Isolation that has contaminated the asphalt between radiology and Isolation is to be picked up and disposed of (if possible) and cleaned (soap or detergent) and disinfected by applying disinfectant (AHP (e.g. Accel) 4 oz. per gallon) with a broom to the contaminated area. The disinfectant is to be left on and not rinsed for at least 10 minutes. It is the responsibility of the clinician to ensure this is done.
10. The breezeway between radiology and surgery is to be cleaned of contamination by fecal material according to the standard cleaning and disinfection procedure.
11. The radiology area is to be inspected routinely and at least quarterly by the infectious disease officer or the Large Animal Clinic Director.
12. The radiology room is to have environmental cultures performed after any enteric IDC case has been in it.

U. Surgery Facility

1. No animal with diarrhea is allowed in surgery without permission of the Infectious Disease Officer.
    a. If an incoming case has diarrhea as a clinical problem and needs surgery, the animal will undergo surgery at the end of the day after scheduled cases whenever possible. If the animal requires surgery immediately (e.g. colic), the surgery suite and breezeway will be closed to all traffic during the surgery and until the entire surgery area, breezeway, and recovery area has been cleaned and disinfected. If the animal is *Salmonella* positive, the specific OR used is to be red tagged and cultured after disinfection.

2. The dose syringe used to wash out the mouth of horses is to be kept in a separate bucket of chlorhexidine (diluted 1:42, or 3 oz./gal of chlorhexidine gluconate or 4.5 oz./gal of chlorhexidine acetate) labeled as such. The disinfectant is to be changed daily during regular working days by the surgery technician (or sooner if visibly soiled) and before use by the attending clinician during after-hours, weekends, and holidays.

3. Disinfected brushes used to clean feet of animals are to be kept on a rack above the hoof cleaning area. After use, the brushes are to be soaked in disinfectant and replaced on the rack. Water buckets used to wash feet are to be soaked in disinfectant between uses. After feet are cleaned, feces and other material are to be deposited in a waste container and the area is to be rinsed with water, and hands are to be washed with soap.

4. Animals with diarrhea as a clinical problem are to be recovered under IDC protocol, and the recovery stall is to be red tagged and cultured. The person responsible for recovering the animal is responsible for ensuring that the stall is cleaned and disinfected (and "red tagged") according to established protocol. Barn crew should be notified.

5. The breezeway between radiology and surgery is to be cleaned of contamination by fecal material according to the standard cleaning and disinfection procedure.

6. The surgery rooms should be scrubbed with detergent and disinfectant (Accel 3 oz. per gallon) after each surgery.

7. Surgery suites are to be closed at least quarterly, as scheduled by the head technician, for complete cleaning and disinfection.

8. It is the responsibility of the surgery and anesthesia technicians to maintain the cleanliness and sanitation of the surgery suites, including equipment, during the course of daily use. Technicians also are responsible for the cleanliness and sanitation of specific areas and equipment to be assigned by the head technician.

9. It is the responsibility of the night cleaning person to clean (scrub with disinfectant) and disinfect floors, walls, and equipment after a regular working day.

V. Recovery Stalls

1. When moving horses into the recovery stall, booties or disinfected boots are not required. After the horse has recovered and moved to its stall, the recovery stall must be cleaned and disinfected. The person in charge of recovering the animal is responsible for cleaning and disinfecting the stall and alleyway, or for ensuring it is cleaned and disinfected before it is used again. The surgery technicians are responsible for cleaning recovery stalls during the day. The recovery stall is to be cleaned and disinfected as follows:

    a. The mats on all walls, the inside of the door, and the floor are to be scrubbed with detergent in that order to remove organic material.

    b. The stall should be rinsed with water and then sprayed with detergent, scrub, rinse and then clean with disinfectant (AHP (e.g. Accel) 4 oz./gal of water or peroxygen disinfectant such as Virkon or Trifectant, as directed for clostridial cases).

    c. Clean the aisle in front of the recovery stall by removing organic material and spray with AHP (e.g. Accel) solution.

    d. Disinfectant is to be allowed contact for at least 10 minutes before being rinsed off with water. Rinse from top of wall pads down to floor and squeegee to remove excess water.

2. The surgery/recovery area is to be inspected routinely and at least quarterly by either the infectious disease officer, the Director, or the Large Animal Clinic Director.

W. Euthanasia of horses

Horses housed in B Barn may be euthanized on the VM 3A Pathology Lawn, unless they are under IDC or enteric precautions for diarrhea. If they are under IDC protocol or enteric precautions for diarrhea, they may be euthanized in the stall and transported in the sealed container. Sunrise recovery stall can also be used for euthanasia rather than stalls. The B Barn lawn may only be used for outpatient (nonhospitalized) euthanasia, and hospitalized horses/camelids that have no IDC concerns, no GI clinical signs, no fever, and permission of IDC Officer.

X. Red Tagged Stalls

All stalls should be red tagged if the patient was moved to Isolation. Barn Crew must be notified so that appropriate disinfection and culturing protocols are initiated. Such stalls should be cleaned with detergent as usual, then followed with 2 disinfections with Accel.

Section II
ICU - B Barn and VM II

A. Access to ICU

1. Access to ICU is restricted to designated VMTH Barn Crew members, technicians, clinicians, residents and students. No other visitors are permitted in ICU, except for clients after checking in at front reception desk. All persons entering ICU must follow enteric precautions described below in section B. Clients are to be escorted and instructed to not touch other patients in the clinic. Refer to the posted visitation policy at the entrance to ICU/ front reception desk.
2. Gates at the ends of ICU are to remain closed, except when actually moving a horse or equipment in or out of ICU and when cleaning stalls. The doors at south and north ends, rather than the gates, are to be used by people for entry/exiting.
3. If space permits, horses are to be assigned stalls beginning at the south end (B10) of the barn, and progressing northerly or as designated by the ICU supervisor. Stalls should be skipped (i.e. - left open in between) as space permits. When the east (Sunrise) recovery stall is in use, a chain is to separate between B 2 and B 3 to deter foot traffic beyond the recovery stall. It is the responsibility of the ICU technician to ensure that the chain remains in place across the alley.
4. The VM II ICU is used principally for equine neonatal cases during the foaling season. VM II can be used for non-neonatal cases only if stalls B1-B14 are unavailable or if medicine and surgery clinicians believe it is medically necessary (e.g. for use of suction, O2, air conditioning, etc.). Enteric/IDC precautions must be followed to avoid cross contamination between neonates and other ICU patients in the VM II facility.
5. Equine neonates less than seven days of age, with diarrhea of undetermined origin are permitted in VM II ICU unless they are from a ranch with an outbreak. If the diarrhea is determined to be caused by *Salmonella* (positive culture/PCR) or other contagious agent (rotavirus, *Cryptosporidium*, other), then the foal must be moved to Isolation. If the diarrhea is profuse, the foal may be moved to isolation at the discretion of the IDC Officer. If the foal is admitted for 'primary enteritis', it is to be admitted and worked up in isolation (e.g. - initially healthy foal that developed fever and diarrhea at few days of age).
6. High risk horses on multiple antibiotics may be stalled in ICU if space is available. IDC protocol may be placed on any such cases as desired by the attending clinician.
7. Animals that are not patients in ICU are not permitted in or around ICU, such as personal pets, except for companion animals for a patient.

B. Enteric Precautions or "IDC protocol"

Enteric precautions must be implemented when any animal has diarrhea. Such animals may shed an enteric pathogen in the feces. An enteric precaution or IDC protocol or "ICU protocol" sign must be posted on the stall. If the animal has diarrhea and fever or leukopenia, or is *C. difficile* toxin positive, the animal must be transferred to Isolation as stated in B2.

Infection control precautions for handling diarrheic or animals under "IDC protocol" include:

1. Wear disposable gloves and plastic booties or rubber shoes when handling an animal. Rubber footwear must be scrubbed with disinfectant as soon as possible. A boot brush must be used to thoroughly clean the bottom of the boot. Foot bath with disinfectant should be located outside of stall.

2. Wash hands before and after handling the animal (after removal of gloves). Frequent hand washing has been proven to be the most important component to prevent the spread of infectious diseases. If hands are not visibly soiled and wash basin or sink is unavailable, then hand sanitizer (≥60% alcohol) may be used. It should be noted that clostridial spores and *Cryptosporidium* oocysts are not susceptible to alcohol, and hands must be washed.

3. Wear a **clean** lab coat or coveralls that remain at the patient's stall. Dirty lab coats or coveralls are to be replaced by the service AHTs.

4. Use a thermometer that is assigned to the patient. Do not share thermometers between patients.

5. The patient should be kept in the stall and avoid walking if they have diarrhea. (Horses on IDC protocol because of being previously housed in ICU can be walked as long as there are no IDC concerns such as diarrhea).

6. Fecal samples are to be submitted daily (x5) for *Salmonella* culture and on the first day *Clostridium difficile* toxin assay for horses with diarrhea (cow pie or looser) that have current or historical antibiotic administration, unexplained fever or leukopenia. The enteric panel (one) is to be charged to the owner as part of the diagnostic work up of diarrhea. Daily Salmonella cultures are to be charged to IDC X0L910. If the animal is presented with diarrhea and is placed under enteric precautions, the owner should be charged for the cultures and assays. PCR diarrhea panels are to be run as per consultation between clinician and IDC Officer.

7. The person handling the animal is responsible to ensure the area/equipment is cleaned (scrubbed with detergent) and disinfected before leaving the area.

Additional Specific IDC Precautions:

1. All patients in ICU are handled as enteric precaution cases.

2. Animals with a history of a *Salmonella* positive fecal culture (from any practice or laboratory) within 30 days of admission and that require surgery should be admitted directly to Isolation unless specified as negative based on 5 negative *Salmonella* fecal cultures or 2 negative fecal PCR (after overnight enrichment in selenite broth) results and a minimum of 2 weeks has elapsed from discharge.

3. No equipment used in the treatment of horses, such as dose syringes, tubes, reflux equipment, scopes, lead ropes, halters (except those coming with the horse), or other equipment will be permitted in ICU without being autoclaved, or otherwise disinfected. Only disinfected equipment will be assigned to a horse. No equipment will be shared among horses. After each use, the equipment will be sterilized or otherwise disinfected as per IDC protocol, and stored in a clean sealed plastic bag or closet/storage area.

4. Technicians working in Isolation are not to work in ICU, unless the case load in Isolation permits and help is needed in ICU and no other options. In such a situation, the technician is to change to new green scrubs, change shoes and wash hands in the VMTH locker room, before going into ICU. This is not permitted if *Salmonella* positive animals in present in Isolation.

5. To prevent cross contamination such as nose-to-nose contact between horses, upper stall doors are to remain closed, except when side screens are available on the doors.

C. Infectious Disease Surveillance

1. Weekly environmental cultures of ICU, including aisle drains, counters, feed bins, stocks, and any dirty area are to be submitted for IDC culture of *Salmonella*. Specific areas to be cultured weekly are per SOP, but include:
    a. All floor drains and covers, including each stall drain if the stall has been used during that week.
    b. Door knobs
    c. Work table for charts and flow sheets
    d. Stocks, (cracks, holes and around pads)
    e. Sink drains
    f. Manure bins
    g. All stalls, including those occupied, are to be included in environmental cultures.

2. NICU is to be cultured once weekly during foaling season and once monthly during off season.

3. B Barn (non-ICU) is to be cultured quarterly (4 x per year), unless there is a horse with positive fecal *Salmonella* culture. In that case, environmental cultures of B barn are to be obtained after the horse is moved to isolation.

4. Any person aware of an animal with diarrhea in the B-Barn ICU must immediately notify the IDC Officer and the clinician. If the IDC Officer is unavailable, the ICU Supervisor should be notified. If diarrhea is present, a CBC is to be done, the rectal temperature taken, and a fecal sample submitted for *Salmonella* culture and *Clostridium difficile* toxin assay (the latter if a history of antibiotic use is present) within an hour. The culture for *Salmonella* should be charged to the IDC account and the CBC and *C. difficile* toxin assay should be charged to the owner. If the animal also has a fever or neutropenia (see B2 above), it is to be moved immediately to Isolation Diarrhea PCR panels are to be run at discretion of IDC officer and clinicians.

5. Submission of fecal samples to the Microbiology Lab must be noted on the ICU patient sheet. The online request form and the ICU flow sheet must include the date, time, stall number and initials of the person collecting the sample. On weekends and holidays samples should be collected and submitted to microbiology during the hours the laboratory is open. If the laboratory is not open, samples are to be placed in the refrigerator and submitted when open. If a mare and foal are stalled together, both are to be cultured.

6. Personnel in the microbiology laboratory are to notify technicians in ICU immediately of any positive or suspect *Salmonella* isolates or *Clostridium difficile* results (cell phone 530-979-0653; phone 752-2582, 752-5958, 752-7273) as well as IDC Officer.

7. At least one white blood cell count and differential is to be done for each patient with loose feces (cow pie or looser) or a fever > 101.5 F in ICU. The CBC is to be repeated if diarrhea persists or worsens as per discussion of IDC officer and clinician. A CBC is recommended for horses with unexplained fevers. Charges will be made to the owner. Results are to be recorded on the patient's treatment sheet.

8. Rectal temperature is to be taken at least twice daily on each hospitalized patient and recorded on the patient's treatment sheet and VMACS record.

9. A detailed description of the consistency of feces is to be recorded at least twice daily in the patient record sheet.

10. A census of animals in the barns and their specific location is to be taken every day, including weekends and holidays.

D. Criteria for Transfer to Isolation

1. Horses that are identified as being culture positive for *Salmonella* are to be moved immediately to Isolation. Personnel in microbiology are to notify the ICU technicians and IDC Officer immediately of any Salmonella positive culture of a horse in ICU (2-

2582, 2-7273, 2-7274 and also to notify the IDC officer and barn crew supervisor of Salmonella positive cases in B barn. It is the responsibility of the technician to advise the clinician of the results, and to move the horse to Isolation if it is not sent home within 2 hours.

2. A horse with any two of the following three parameters (1) diarrhea, (2) a fever **(>101.5** °F for adult horses and foals > 90 day, **> 102.5** °F for neonates 0-14 days, **or > 102** °F for foals 15 days-90 days) and (3) neutropenia (<2000 neutrophils) must be moved to Isolation. Horses with GI disease and a *C. difficile* toxin positive fecal ELISA are to be moved to Isolation facility. This is the responsibility of the clinician. **A technician or student assigned to the case is responsible for advising the clinician and the infectious disease officer of such results.** Lymphopenia (<1000/µL) and colic or neutropenia and colic may be present in coronavirus cases. These are to be tested for coronavirus through PCR on an individual case-by-case basis after consultation between the IDC Officer and the attending clinician on the case.

    a. Any horse with pipe stream diarrhea (defined as water-consistency feces that does not remain above the bedding) is to be moved to isolation regardless of body temperature or white blood cell count, except for the following scenarios (Exceptions as noted here are only as long as the horse has no fever, neutropenia or positive *C. difficile* toxin test [i.e. the horse has diarrhea as the ONLY criterion]):

        i. Horses administered laxatives such as mineral oil

        ii. Horses diagnosed with enteroliths (pre-op)

        iii. Immediately (within 36 h) post-operative (colic) associated with enterotomy.

        iv. Per approval of IDC Officer

3. Animals presented with diarrhea only may be required to be directly admitted to the Isolation facility at discretion of IDC Officer.

4. Animals with fever of unknown origin and lymphopenia (<1000/µL), history of low grade colic or diarrhea and lymphopenia (<1000/µL) or history of low grade colic or diarrhea and neutropenia (<2000/µL), at discretion of IDC Officer (coronavirus suspect).

5. Animals from a farm with an outbreak (>1 affected animal), or with confirmed strangles, coronavirus, or other contagion.

6. If the horse is *C. difficile* antigen assay positive, but toxin negative, and has no unexplained fever (>101.3), diarrhea, or leukopenia, it can remain in ICU or under enteric precautions. If a horse is positive for *C. difficile* toxin assay it should be

moved to Isolation. The toxin assay is to be repeated every 24-48 h (as per IDC Officer and clinician discussion and decision) as long as horse remains "antigen" positive.

7. Animals are to be led to Isolation only by the route north of the farrier shop and along the west side of the hay barn. They are not to be allowed on the lawn south of C Barn. They are to be followed, and any feces passed are to be picked up immediately and the site disinfected with AHP (e.g. Accel) (8 oz. per gallon and allowed to dry on), but after feces are removed and scrubbed with detergent and rinsed.

E. Exercising Horses Housed in ICU

1. Horses in ICU are to be exercised only if it is medically necessary in the designated ICU exercise area (around the mare and foal pasture only). Horses are not to be allowed to walk on fecal material left by other animals, or on material possibly contaminated by infectious disease agents (any body fluids). After exercising a horse, any fecal material is to be picked up and deposited in a waste container. The area is not to be hosed down with water. The area must be covered with AHP (e.g. Accel) solution (3 oz. per gallon) and left to dry. ICU horses are not permitted outside ICU or the exercise area, except when moving them to surgery or radiology or Isolation.
2. ICU horses are not allowed on the B Barn Lawn.
3. Mares and foals without diarrhea and no recent GI surgery are to be grazed in the fenced pasture adjacent to ICU and the pastures south of the round corrals. Mares and foals are not to be exercised on any lawn or other grass area. They may be exercised in round corrals after fecal material has been removed.

F. Transfer of Patients to Other Stalls

1. Horses with or presented for GI disease (colic, diarrhea) are not to be moved from one ICU stall to another ICU stall, unless there is a sound medical reason. An animal with GI disease located in the B-Barn ICU is not to be moved to any other area of the VMTH except Isolation or VM II ICU, except if all ICU stalls are occupied and there is an incoming patient requiring intensive care. If the latter situation arises, and no animal in ICU can be discharged, the infectious disease officer, Director, or Large Animal Clinic Director is to be notified. Stall B11 to B14 are to be used for ICU overflow. If all the stalls are full from B11-B14, then the patient should be moved to the equine section in C Barn or other designated area of B barn through discussion with IDC Officer. Enteric precautions are to be posted and followed, and fecal samples submitted daily for *Salmonella* culture, and no equine day cases can be admitted to C-Barn if GI cases are there.
2. Mares and foals that have not undergone colic surgery and are free of diarrhea in VM II may be moved to other areas of the VMTH, if they have no signs of enteritis or salmonellosis and have been culture negative for *Salmonella*.

3. Horses (other than colic or GI cases) discharged from ICU care, but still in the hospital, may be moved to B Barn, but enteric ("IDC/ICU") protocols must be in place until a minimum of 5 fecal samples are cultured negative for *Salmonella*.

G. Mare/Foal ICU Pasture and Hand Cut Feed

1. The mare/foal pastures are located in the enclosed white fence immediately south of the B-Barn ICU and the two pastures south of the round corrals. The purpose of the mare/foal pastures is for foals to have access to a grass area, which is relatively free from fecal contamination. The B Barn lawn is not to be used for grazing.
2. The pasture use guidelines are as follows:
3. The pasture is to be used during daytime only by mare and foal pairs that are culture negative for *Salmonella*, no recent GI surgery and do not have signs compatible with an infectious disease. Other animals can use the pasture if the IDC Officer or VMTH Director gives approval.
4. After use, the person removing the horses is responsible for removing all fecal material and any other debris left in the area.
5. No animals are to be permitted in the area until all fecal material and any debris or trash has been removed.
6. To avoid extensive fecal contamination and destruction of grass and turf, animals should not remain on the pasture for more than 30 minutes at a time unless it is the only mare and foal pair using the pasture, for which they may remain for longer periods as long as under supervision of a student, technician, or clinician.. The pasture is not intended as a treatment area or as a long term pasture for mares.
7. No hay, grain, or other feed is to be provided to animals while on the pasture.
8. Water must be available to all animals on the pasture if kept there >30 min.
9. The Barn Crew Supervisor, or a person designated by him or her, will be responsible for maintaining the grazing area. Persons wishing to use the foal lawn area must first contact the ICU technician.
10. Green forage for horses is to be hand-cut (using disposable gloves) from designated grass areas cultivated specifically for ICU patients. Grass remaining in the stall after 3 hours is to be removed and discarded in a waste container.

H. Cleaning and Sanitation of the ICU Facility

1. Vacated stalls should be mucked out and cleaned and disinfected as soon as possible after a horse leaves. Vacated stalls are cleaned by the ICU Animal Technician or AHT during the morning shift. Barn Crew will clean vacated stalls during the afternoons or in the absence of the Animal Technician if necessary to provide stalls for cases arriving within the next 24 hrs. The ICU AHT makes a determination based on caseload whether the stall needs to be cleaned promptly or the following morning.

2. Cleaning personnel must follow enteric precautions while cleaning the stall. They should wear outer garments that can be removed or disinfected after cleaning the stall including; rubber boots, gloves, and gown or coveralls.

3. Stalls are to be cleaned and disinfected as follows: First, the bedding is mucked, and the stall is rinsed. Then detergent is applied and manually scrubbed with brooms and scrub brushes. The detergent is then rinsed, and AHP (Rescue or Accel) is applied. If red tagged or there is residual organic matter, it is to be applied a second time after the first is allowed to have 10 minute contact time, then rinsed. The last application of AHP disinfectant is to be left on the stall to dry. If the stall housed a *Salmonella* or C difficile (+) patient, after the walls have dried (about 1-2 hours) the stall is to be cultured.

4. The alley and floor are to be kept free of contamination with feces, bedding, feed, or other material potentially containing infectious disease agents. This should be done by sweeping or shoveling the material away from stalls and disposing in a waste container. After sweeping, and before the area can be walked on, the broom and/or shovel are to be placed in a disinfectant barrel and the contaminated area sprayed with disinfectant (AHP (e.g. Rescue or Accel) 3 oz. per gallon). After allowing at least 10 minutes of contact in the aisle way, the disinfectant may be rinsed gently with low pressure water. No high pressure water should be used in ICU.

5. To summarize, the final application of AHP disinfectant is to be left on to dry (without rinsing) in stalls. In aisle way and recovery stall, the disinfectant is to be rinsed after 10 minute contact time.

6. Any contamination outside the stall by diarrheic feces or material potentially containing infectious disease agents (in the alley or on the floor) is to be cleaned immediately using a scrub brush/broom and (AHP (e.g. Rescue or Accel) 3 oz./gal water). This is the responsibility of the person handling the animal at the time that contamination occurs. However, any person aware of such contamination is required to clean and disinfect the area, should the person handling the horse fail to do so.

7. Areas of asphalt contaminated by feces of an animal moved to Isolation will be scrubbed with disinfectant (AHP (e.g. Accel) 8 oz./gal water). The disinfectant is not to be rinsed off.

8. Maintenance of foot baths (AHP (e.g. Accel) 3 oz./gal water), scrub brushes, disposable booties, and waste containers at the indicated entrances is the responsibility of the Barn Crew during the regular working hours, and of the technicians at all other times. The technicians also are responsible for maintaining a clean and neat environment.

9. Only baled shavings and clean, baled straw are to be used as bedding in ICU.

10. Hay, straw, and other feeds are to be stored in sealed containers, such as barrels with lids, or plastic bags. Hay should be inspected and not used if there are signs of spoilage, fecal contamination, or other contamination.

11. Before and after weighing a horse from ICU, fecal material should be removed from the scale and the scale should be disinfected with 3 oz. per gallon AHP, then rinsed.

J. Recovery Stall

1. When moving horses into the recovery stall, booties or disinfected boots are not required. After the horse has recovered and moved to its stall, the recovery stall must be cleaned. The person in charge of recovering the animal is responsible for cleaning and disinfecting the stall and alleyway, or for ensuring it is cleaned and disinfected before it is used again. The following list of positions is assigned to cleaning the stall: ICU Animal Technician (morning or day), surgery and anesthesia technicians (afterhours), Barn Crew tech (after hours), ICU technicians or residents/clinicians.
2. The recovery stall is to be cleaned and disinfected as follows:
3. The mats on all walls, the inside of the door, and the floor are to be scrubbed with detergent in that order if there is organic material adhered to the surfaces.
4. Rinse the stall with water and then spray with disinfectant (AHP (e.g. Accel 3 oz./gal of water).
5. Clean the aisle in front of the recovery stall by removing organic material, scrubbing with detergent, rinsing and then spray with AHP (e.g. Accel) solution.
6. Disinfectant is to be allowed contact for at least 10 minutes before being rinsed off with water. Rinse from top of wall pads down to floor and squeegee to remove excess water.

K. Back-Up Technician Support

Technicians are responsible for calling in secondary and tertiary backups when the size or type of case load may prevent or limit their ability to fully comply with infectious disease protocol or when sanitation may be compromised. If the number of backups is inadequate to accomplish the tasks, if backups are not available, or if other situations arise that compromise infectious disease control, the supervisor, nursing supervisor, or Large Animal Clinic manager is to be contacted.

L. Euthanasia of ICU horses

Horses with gastrointestinal diseases are not to be euthanized on the lawn. They can be euthanized in their stall or in the ICU (“Sunrise”) recovery stall. After hours, any newly admitted GI case (in receiving) may be euthanized in receiving if it is admitted after hours and receiving is empty. Otherwise, newly admitted, but not yet hospitalized horses, may

be euthanized in the ICU ("Sunrise") recovery stall or stall B-1. The ICU technicians and Barn Crew must be notified.

M. Red tagging of stalls

All stalls from which horses were moved from ICU to isolation must be red-tagged, unless approval is obtained from the IDC officer or ICU supervisor.

Section III
Isolation Facility (E Barn)

A. Access to Isolation Barn

1. Access restricted to:

    a. the medicine clinician in charge of a case,
    b. the equine medicine service clinician assigned to E Barn,
    c. the AHT(s) assigned to E Barn,
    d. veterinary student(s) assigned to E Barn,
    e. the VMTH infection control officer and
    f. designated Animal Technicians (Barn Crew) assigned to fly control or cleaning

    Only the above personnel can enter the Isolation facility for examination of horses. Others, such as owners or trainers, are only permitted to be into Isolation Unit for thirty minutes while physically accompanied by either the technician on duty or equine medicine clinician or the clinician in charge of the case. No volunteers are permitted in the Isolation facility except for those on Foal Team to assist with neonates (and have undergone safety training).

2. Members of the equine medicine service, including clinicians, residents, students or technicians, may enter isolation for rounds purposes, to watch diagnostic procedures, to examine flow sheets, or to visually inspect cases over or through the stall door when there at the end of the day (i.e., not returning to B barn or other patient areas). Only the student (when applicable), resident, and clinician currently assigned to isolation duty specifically may be in charge of cases housed there (case management) and may enter stalls for physical examinations or for performing procedures on horses. If rabies suspects or EHV horses are housed in isolation, only the personnel directly in charge of the case should enter isolation.

3. Surgery services and other services may enter isolation for consultations, care or evaluation or progress checks of orthopedic problems or specific surgical sites or other surgery cases transferred to isolation. This is to be done at the end of the work day (last case examined) whenever possible.

4. All cases in isolation are to be transferred to the resident and faculty assigned to isolation duty either after admission during after hours, or the next morning, unless dictated otherwise by the faculty member. Case transfers from surgery services or the other medicine service to the assigned isolation service should occur, after consultation of the two services, the following morning when cases are moved/received after 4 pm.

5. All persons (including owners and trainers) who enter the Isolation facility must be familiar with the infection control protocol, and are required to comply with its provisions.

6. Foot wear (street shoes; rubber boots worn outside of Isolation) should be dipped in foot bath before entering and after leaving the building. Isolation technicians are responsible for replenishing the disinfectant solution (8 oz. Rescue or Accel/gallon water) at all foot-wear disinfection stations, once daily, and for insuring that each disinfection station is provided with a boot brush.

7. Hands should be washed in soap and water, before entering and after leaving the locker room.

8. At the "bench" in the office, rubber boots or street shoes worn outside Isolation should be removed, and rubber Isolation facility boots should be put on. This process should be reversed upon leaving. Street shoes (or rubber boots worn outside of Isolation) are to be worn only on the locker side of the bench. Rubber Isolation Barn boots are to be worn only on the wall side of the bench.

B. Access to an Individual Stall

1. Treatments and procedures on patients should be “time clustered" as much as possible, so as to minimize the number of times that the stall is entered.
2. Enter and leave the stall only by way of the service room. The front stall door should be used only when leading a horse in or out of the stall.
3. Both coveralls and a lab coat must be worn when entering a stall which is occupied by a patient. A surgical bouffant cap or other hair covering is to be worn when entering an occupied stall. The lab coat should be fully buttoned up, to protect coveralls from contamination. Upon exiting the stall, the lab coat should be removed, and should remain in the stall service room. Face shield or goggles plus mask is recommended in cases with profuse diarrhea and animals with salmonellosis, to avoid splash contamination.
4. Rubber boots should be rinsed with hose in hose room adjacent to stall, prior to dipping in foot bath. Rubber boots should be scrubbed (not merely dipped) in foot bath, both before entering and after exiting the service room, paying special attention to the soles.
5. Hands should be washed with soap and water (both upon entering and exiting the service room, and before and after leading a horse) even though gloves are worn when handling animal.
6. Disposable gloves are always worn when handling the animal or when cleaning a stall, or at any other time that fecal contamination can be anticipated. Used gloves are discarded before exiting the service room and beginning work on another horse or another stall. Hands must be washed after gloves are removed.

7. Each stall must have a rectal thermometer and other equipment designated for sole use by the patient in the stall
8. When leading a horse into a stall through the external stall door, scrub boots in disinfectant before entering the stall. When leading a horse out of a stall, scrub boots upon exiting. The concrete areas where the horse was walked should be scrubbed with detergent and then disinfected with AHP (e.g. Rescue or Accel 8 oz. per gallon).

C. Additional Enteric Precautions

1. Workers in Isolation should put on a newly laundered pair of coveralls at the beginning of their shifts. If coveralls become grossly (visibly) contaminated with fecal material, coveralls should be changed to a newly laundered pair. All soiled coveralls are laundered daily during the grave shift. Coveralls can be hung on designated hooks and be reused once if they have not been in contact with patients or facility, and if *Salmonella, Clostridium difficile*, coronavirus or EHV positive animals are not present in the facility.
2. Horses with diarrhea should be confined to their stalls.
3. Do not lean against or touch the external stall door (or permit others to do so) when working in the aisle in order to avoid contaminating hands or clothing. If you do inadvertently touch or lean against the door, you should immediately wash your hands and/or change coveralls.
4. Workers in Isolation should wash their hands before eating, and should not allow their food to contact a potentially contaminated surface. Food/drink are not allowed outside of the isolation office.
5. Avoid standing close to the external stall door, when visually monitoring the patient from the aisle. This location can be contaminated with material from the stall, which has "migrated" under and around the stall door.
6. No pets (dogs, cats, etc.) are permitted within the Isolation facility (or anywhere else in or around the Large Animal Clinic).

D. General Cleaning Procedures

1. Before starting to clean stalls in the morning, begin by deciding which side (eastern or western) to clean first. Stalls housing *Salmonella*, EHV, *Clostridium difficile*, coronavirus or other agent-identified positive animals should be cleaned last. When multiple positive horses or horses with different infectious agents are housed in Isolation (e.g. EHV, coronavirus, *Salmonella, Clostridium difficile*), the IDC Officer should be consulted as to which side should be cleaned last. The cleaning should end by wetting down the entire length and width of the aisle with AHP (e.g. Rescue or Accel) 8 oz./gal, in front of the row of stalls that were cleaned.

2. Start cleaning the northern-most stall (E2 or E7) first, unless dictated by IDC Officer because of horses with *Salmonella* or other pathogen in the north most stall. In such cases, the south most stalls may be cleaned first. Proceed to clean other stalls in order, as you move in a southerly direction (E2, E3, E4, or E7, E6, E5).
3. Tie the horse to the back of the stall or ensure it is staying away from the front of the stall and the manure bin. Wear lab coat, buffont cap, and gloves while cleaning stall.
4. Immediately after cleaning/mucking each stall, gently rinse the aisle outside that stall with (**low pressure**) water (no nozzles), until it is clean (free of organic matter). Use care not to allow water in the aisle to enter any stall.
5. When all of the stalls on the aisle (that required cleaning) have been mucked, and the aisle in front of each stall has been rinsed, finish by (again) wetting down the entire length and width of the aisle and floors in service room with AHP (e.g. Rescue or Accel) 8 oz./gal. Allow 10 minutes of contact time prior to rinsing. Then a second coat of Accel should be applied and allowed to dry. Wipe all horizontal surfaces with AHP (e.g. Rescue or Accel) solution (8 oz. per gal) or Accel wipes.
6. Repeat steps D2-5 when cleaning the stalls on the other aisle.
7. When stalls on a particular aisle are being cleaned, foot traffic (in that aisle and in and out of stalls on that aisle) should be held to a minimum, until after that aisle has been disinfected. Clinicians (and others) should avoid entering the facility when stalls are being cleaned. Consequently, all stall cleaning should be completed by 7:00 AM.
8. If you must walk in a "dirty" aisle while stall cleaning on that aisle is in progress, you should studiously avoid stepping on areas of the aisle that are contaminated by feces or soiled bedding. In addition, you must take special care to scrub and disinfect your boots (especially the soles), before you enter a stall or service room, the treatment room, or the office.
9. The floor of each service room, and the aisle in front of each stall, are to be kept free of contamination (feces, bedding, feed or other material potentially containing infectious disease agents). This is done by sweeping or shoveling the material away from the stall and disposing of it in a waste container, or by gently hosing to a drain with low pressure water. After sweeping or hosing, and before the area is walked on, the broom and/or shovel are placed in a disinfectant-barrel, and the contaminated area is scrubbed/swept/sprayed with disinfectant (diluted AHP (e.g. Rescue or Accel) [8 oz. per gal] or peroxygen disinfectant) which should be left on a minimum of 10 minutes.
10. Any gross (visible) contamination outside the stall (in the aisle or on the floor of the service room) by diarrhea feces (or material potentially containing infectious disease agents) is to be considered an emergency. Scrubbing with detergent and then disinfection should be performed immediately, using a scrub

brush/broom/spray rig and AHP (e.g. Rescue or Accel) 8 oz./gal. This is the responsibility of the person handling the animal at the time that contamination occurs. However, any person aware of such contamination is required to clean and disinfect the area, if the person handling the horse fails to do so.

11. Instruments, equipment and miscellaneous tack (dose syringes, stomach tubes, twitches, halters, lead ropes, etc.) should not be shared among patients
12. Thermometers are to be wiped down with Accel wipes prior to returning to storage container. Thermometers are to be purchased new for each case. If the horse tests negative for specific pathogens (*Salmonella*, *Clostridium difficile*) then it can be sent home, but only after disinfection with Accel wipes.
13. The exterior walls of the building around the stall, and the outside of the external stall door are scrubbed/sprayed with AHP (e.g. Rescue or Accel) 8 oz./gal, according to a weekly schedule.
14. Any area of the floor on which a horse was walked, should be cleaned by shoveling and sweeping (if necessary), scrubbing with detergent/soap, rinsing with water, and disinfection with AHP (e.g. Rescue or Accel) 8 oz./gal.
15. All horizontal surfaces in the office area (floors, desks, counters, the sink; top of the refrigerator, water cooler and TV; trash can lids, the "bench", etc.) are scrubbed/sponged/wiped with AHP (e.g. Rescue or Accel) 8 oz./gal or AHP wipes, according to a weekly schedule. In addition, all "handles" (sink, locker, refrigerator and cabinet handles; all light and fan switches; the telephone) and all rubber boots stored in the office are also sponged/wiped with AHP (e.g. Rescue or Accel) 8 oz./gal or AHP wipes, according to the same schedule. Additional cleaning, especially of vertical surfaces (walls, lockers, cabinets, desks, the sink, refrigerator, water cooler, TV, etc.) will be done on an "as needed" basis, at the request of the supervisor.
16. All horizontal surfaces in the treatment room (floors, counters, cabinets, the sink, carts, radio, trash container lids, etc.) are scrubbed/sponged/wiped with AHP (e.g. Rescue or Accel) 8 oz./gal, according to a weekly schedule. In addition, all "handles" (sink, cabinet and locker handles; all light and fan switches; radio dials) and the stocks in the treatment room are also sponged/wiped with AHP (e.g. Rescue or Accel) 8 oz./gal, or Accel wipes, according to the same schedule. Additional cleaning, especially of vertical surfaces (walls, cabinets, lockers, and the sink) and instruments, equipment, jugs, dispensers, etc., will be done on an "as needed" basis, at the request of the supervisor.

E. Stall Cleaning and Disinfecting of a Vacated Stall

1. Vacated stalls should be mucked out, cleaned and disinfected as soon as possible after a horse leaves (certainly within 4 hours). Wear lab coat, bouffant cap, and gloves while cleaning stall.

2. Mucking of stalls should be done in a way that minimizes the creation of dust, and avoids contamination of the aisle.
3. No high pressure water is ever used for cleaning stalls in the Large Animal Clinic.
4. After removing all bulky and coarse materials (feed, bedding, and manure) by shoveling, attempt to completely remove the remaining (small-particle) materials by sweeping with a broom into a pile, and then sweeping the pile into the shovel.
5. Move dumpster to steaming area and clean and disinfect aisle way with AHP (e.g. Rescue or Accel) immediately
6. The balance of the stall cleaning and disinfection process is as follows:
7. Close the outer stall door.
8. Gently rinse the inside of the stall door, the walls and the floor with low pressure water (no nozzles). Attempt to wash all visible loose particulate matter toward and into the drain.
9. Scrub the inside of the stall door, all four walls and the floor with foaming agent soap (detergent), using stiff-bristle brushes, and at least 20 pounds of force:
10. First, thoroughly scrub all of the corners and edges of the stall with one of the special brushes provided for this purpose.
11. Next, scrub each of the four walls, in turn. Start at the left-hand corner, as high on the wall as you can reach with your brush, and scrub, working toward the floor.
12. Rescrub this same area.
13. Move to the right on the wall, and scrub another section, slightly overlapping the area which you have just finished scrubbing.
14. Continue this process until you have double-scrubbed all four walls and the inside of the door.
15. Utilize the same double-scrubbing pattern on the floor.
16. Some areas within the stall (gate hinges; between pipes; waterers; hay racks; feed buckets; pipes; latches; ledges) should be cleaned with a designated specific scrub brush.
17. Next, gently rinse off the entire foaming agent. If any manure, blood, dirt, etc. is still "caked" on the walls or floor, these spots should be rescrubbed with foaming agent until clean. Any particulate matter left in the stall at this point should be gently rinsed into the drain, or swept up and removed.
18. Finally, after scrubbing with detergent, all surfaces within the stall are disinfected:
    a. The inside of the stall door, all four walls, and the floor are sprayed with AHP (e.g. Rescue or Accel) 8 oz./gal, using the same stiff-bristle brushes and double-scrubbing pattern or provided AHP applicator horse adaptor. Waterers, hayracks, feed buckets, pipes, latches, gate hinges, and ledges are also sprayed with AHP (e.g. Rescue or Accel) 8oz/gal.

b. In stalls, the disinfectant is not rinsed off, but is allowed to dry on the walls and floors.

19. The outer stall door should not be opened until a new patient is to be introduced.
20. After the vacated stall has been cleaned and disinfected, the associated service room floors should be double-scrubbed with foaming agent soap. Then, the floors should be sprayed with AHP (e.g. Rescue or Accel) 8 oz./gal, and the walls, sink, faucet handles, counters, shelves, jugs, containers, buckets, pails, trash cans, fan and light switches, etc. should be sponged/wiped/sprayed/dipped with/in a single application of AHP (e.g. Rescue or Accel) 8 oz./gal or using Accel wipes. The disinfectant is not rinsed off. Instruments, equipment and miscellaneous tack (dose syringes, stomach tubes, twitches, halters, lead ropes, endoscopes, etc.) should also be sterilized, preferably by autoclaving or gas sterilization or cold sterilization with Accel or chlorhexidine (the latter for metal items) solution.
21. After the walls and floor have dried (usually in 1 to 2 hours), the stall is inspected by the supervisor, or other designee. If there is any organic matter (feces, bedding or feed) or other dirt still present, the stall must again be scrubbed with foaming agent, and then sprayed one more time with AHP (e.g. Rescue or Accel) 8 oz./gal.
22. Immediately prior to placing a horse in a stall, the stall should be visually inspected and passed by the supervisor. **In addition, the stall should be negative for *Salmonella* on environmental cultures.** However, in the event that a *Salmonella* case/suspect needs to be moved to Isolation, and a stall has been cleaned and disinfected but not yet passed, the horse should be moved to the stall.
23. A "dirty" (re-contaminated) stall should always be recleaned and redisinfected before a horse is placed in it, even though fewer than 7 days have passed since it was last cleaned and disinfected.
24. Shovels, brooms, brushes and other stall supplies should be disinfected with AHP (Rescue or Accel) [8 oz. per gallon] (contact time 10 min), and should be restricted to each individual stall.

F. Bedding a Stall

1. The shavings bales should not be allowed to contact the surface of the aisle, as they are being placed in the stalls.
2. If the external plastic cover touches the aisle, then the bale cover should sponged/wiped/sprayed with AHP (e.g. Rescue or Accel) 8 oz./gal or Accel wipes, just before the shavings bale is introduced into a stall.

G. Feeding

1. Hay is to be fed in the back of the stall away from drains, wet areas, and areas contaminated by feces. Hay should be inspected and not used if there are signs of spoilage, fecal contamination, or other contamination in ICU or Isolation.

2. Feed scoops are not used to carry feed to the individual stalls (i.e. - they should not leave the feed room).

H. Fly and Rodent Control

1. Fly control is attained by automatic fly spray equipment. Check to make sure equipment is functioning.
2. Other rooms (office; treatment room; unoccupied stalls) and areas (aisles) may also be fogged, as needed. Check to make sure that bait stations for mice, rats and squirrels are replenished as bait disappears.

I. Walking horses in Isolation Unit

1. No horses are allowed to be turned loose in the pastures for grazing.

2. Walking horses housed in Isolation: Horses that do not have diarrhea (feces can be picked up), but which have a history of shedding salmonella, can be exercised (hand-walked only in a designated "salmonella area." After the horse has been returned to its stall, any fecal material passed during exercise must immediately be removed from the exercise area. Horses that are negative for salmonella can be walked in designated “negative” exercise area. *C. difficile*-positive horses may be walked in the “*Salmonella* negative” exercise area provided they do not have diarrhea.
3. After a horse has been led into or out of a stall, the paved (concrete) area (path) traveled by the horse and handler is to be scrubbed with detergent and disinfected (sprayed) with AHP (e.g. Rescue or Accel) 8 oz./gal. If gross organic matter (from foot wear or the horse's hooves) has been left on the aisle, cleaning and removal should precede disinfection.

J. Infectious Disease Surveillance Isolation Barn

1. After cleaning, weekly monitoring cultures should be performed in the following areas of E Barn as per environmental culturing SOP:

Locker room/Office
Counters and desks
Outside concrete adjacent to drains
Feed room floor
Tractor wheels and foot pedals
E1 stall
See environmental culture protocol for updates*

2. Before biological specimens (blood; feces; urine) are removed from the Isolation facility and transported to a laboratory (in either the VMTH or Vet Med II), the person who obtained the samples should wash their hands, wipe the external surfaces of the specimen containers (blood tubes; fecal cups, etc.) with Accel wipes, using gloved hands, then placed in a rectal sleeve and placed outside the gate for transport to the lab.

3. When the animal is discharged and the stall has been cleaned and allowed to dry, it should be inspected and at least ten environmental culture samples taken, using the following technique: The culture swabs should first be first dipped in noncontaminated enrichment broth, and then placed in a clean test tube until used for culturing (i.e. - once a swab has been used to culture the environment and placed in the selenite, "clean" swabs should not be placed into that selenite). The sample is then obtained by rolling the swab across the surface which is being monitored. The following sites should be sampled:

Site no.	Location
	Inside front stall door, and right and left water bracket/bucket
	Stall side door and wall feeder
	Feeder
	Rear and right walls
	Floor drain
	Right and left front floor corners
	Right and left rear floor corners
	Floor directly outside stall side door, and drain in hose room
	Drain in sink room
	Sink and counter top

4. The technician(s) who disinfect(s) and/or culture(s) a stall is/are responsible for posting (on chart in office) (1) the most recent date of cleaning and disinfecting, (2) the culture results, and (3) the name(s) of person(s) who cleaned and cultured the stall.

5. Before a stall can be reoccupied, environmental swab cultures must be negative for *Salmonella*

K. Back-up Technician Support

Technicians are responsible for calling in their backups, whenever the size or nature of the case load prevents full compliance with the infection control protocol. If backups are not available, if the number of backups is inadequate to accomplish the assigned tasks, or if other situations arise that compromise infectious disease control, the supervisor, nursing supervisor, or Large Animal Clinic Manager should be called. If they cannot help, the clinician(s) in charge of the case(s) should be contacted and asked to send

student help. Being "too busy" is an unacceptable excuse for non-compliance with the infection control protocol. If sufficient help cannot be called in, continue to comply with the infection control protocol, and notify supervisors.

L. Return of personal items to clients from Isolation

1. Cases going out to Isolation should not have their halters, lead ropes, blankets or other items kept in the stalls (or ante room) in the Isolation unit. Once the horse is placed in a stall there, the halters and leads should be removed and disinfected with Rescue (Accel) at 8 oz per gallon for 10 minutes, with scrubbing of surfaces, then rinsed, and air dried for return or to be sent back on the horse upon discharge or mailed to the owner (or pick up) after euthanasia. While the horse is in Isolation, the personal items should be stored in a plastic bag in E1 and labeled. Blankets should be washed with detergent in the laundry.
2. Tail/mane hair or horse shoes should not be brought out of isolation to be returned to the owner without approval of clinician and IDC officer. In general terms, it should be explained that these items cannot be given to them because of infectious disease concerns to people or other horses/animals, as hair and shoes are not very conducive to disinfection. Some exceptions (no diarrhea, negative for zoonotic pathogens) can be made on a case-by-case basis with clinician and IDC Officer.
3. They can have the halter/lead/blankets/leg wraps back, after they have been appropriately disinfected and dried.
4. Any animal that is positive for clostridial disease (C diff, C perf type C or NetF/Beta-2) should have the halter disinfected with Trifectant or placed in a washer. These would be decided upon on a case-by-case basis.

Section IV
C and D Barn (Livestock and Nondomestic Animal Areas)

A. Access to Livestock Facilities

1. All persons entering Livestock Facilities, are required to wear rubber boots or plastic shoe covers. Boots must be washed in a foot bath (AHP (e.g. Accel) solution 4 oz./gallon) using a brush along the sides and bottoms, or shoe covers discarded and hands must be washed before leaving the facility.
2. Personnel working in the livestock sections of C/D Barn are to avoid other areas of the large animal hospital and are not to enter or leave the VMTH main building through the equine receiving room while wearing soiled clothing.

Livestock Facilities consist of:

- West half of C Barn (C15-C28 and S7-S12)
- D Barn pens in pens 1-11, two west pastures.

Access to the equine section (when used for day cases only) on the northeast side of C Barn is through the east sliding door.

B. Livestock Isolation - stalls C5 - C10 Pens S1-S5

Stalls C5-C10 and pens S1-S5 are used for a C Barn Isolation unit when necessary. These stalls should be kept empty so that the area can be used as isolation whenever needed.

C. Criteria for Admission to Livestock Isolation

1. Animals that are cultured positive for *Salmonella* or that have fever and diarrhea (clinical signs of salmonellosis) must be immediately moved to a stall in the FA Isolation in the southeast corner of C Barn. Animals with rotavirus, coronavirus, *Cryptosporidium*, Giardia, coccidiosis, suspected Q fever (*Coxiella burnetii*), and other contagious diseases are to be housed in isolation. Certain farms with a high recent prevalence of Salmonella positive cases may require direct admission to Isolation, as directed by IDC Officer.
2. Animals with *Mycoplasma* respiratory infections should be housed in Isolation.
3. Entrance to the FA Isolation area will be only through the gate near the feed room, not through the SE southern sliding door. The southeast door is to remain closed and latched.
4. Persons treating or caring for animals outside the livestock areas of C and D Barns are <u>not</u> permitted in the C Barn Isolation area.

5. Livestock isolation patients are treated after-hours by designated technicians who are not treating other patients in the clinic.

6. No animals (other than *Salmonella*-positive or suspect animals, or others with contagious or zoonotic diseases (such as cryptosporidiosis) requiring intensive care) may be moved to the southeast area until all environmental culture results are negative.

7. The C Barn Isolation area must be posted "Livestock Isolation - Do Not Enter" when an animal occupies a stall. Enteric precautions are strictly enforced.

8. Foot baths (Accel, 8 oz./gal) and disinfected rubber boots (dedicated boot for isolation use only) or plastic disposable booties must be used when entering the Livestock Isolation. Foot baths must be located:
    a. outside the stall housing the animal
    b. next to the stocks pen (if in use)
    c. next to the gate separating the southeast area from the feed room alley
    d. at the intersection of the west alley and the feed room alley
    e. at the intersection of the west and north alley, and at the north exit.
9. No equipment, supplies, or other materials are to be moved from the FA Isolation area until thoroughly cleaned and disinfected.

10. Hands are to be washed with soap according to protocol before entering or leaving the C Barn Isolation area.

Entry into stalls housing animals in Isolation:

1. Boots are to be changed to designated Isolation boots at the entry to Isolation. Coveralls designated to Isolation are to be placed at the entry way.

2. Entry into stalls housing animals with diarrhea should include Tivek suit and plastic booties over boots (and two pairs of gloves). Those without diarrhea can be handled with lab coat over coveralls. Outer pair of gloves should be changed prior to entry into stall, or upon exit.

3. Upon exiting stall, plastic booties and gloves are to be removed, lab coat or Tyvek suit removed, out gloves removed, hands sanitized and new gloves placed.

4. At Isolation exit, coveralls, boots and gloves should be removed. Hands are to be sanitized or washed.

5. Personal protective equipment for calves, piglets, lambs or kids with diarrhea should include the above, plus face shield or 'eye protective goggles and mask' until *Cryptosporidium* is ruled out.

6. Personal protective equipment for periparturient does or ewes (e.g. normal deliveries, abortions, dystocias, C section, or still births) should include the above

(eye protection) and respirator (N95 or higher) for protection against possible Q fever exposure

7. Isolation entry way is to have a disinfectant foot bath, while each stall is also to have disinfectant foot bath.

8. Disinfectant used in Isolation is AHP (Rescue or Accel, 8 oz./gal).

D. Admission of Animals to General Wards of C-Barn

1. Gloves are to be worn with all animals hospitalized in C barn (and elsewhere including D barn).Hands must be washed or sanitized with hand sanitizer before and after gloves are worn.

2. Wash hands between handling patients. Frequent hand washing has been proven to be the most important component to prevent the spread of infectious diseases. Hands should be scrubbed for at least 30 seconds. Hands must be thoroughly dried afterward. For appropriate hand washing/hygiene technique, please see:

   http://www.nejm.org/doi/full/10.1056/NEJMvcm0903599?emp=marcom&

3. All animals admitted to C Barn (and elsewhere) are to have an admission fecal sample turned in for *Salmonella* culture on the day of admission. All dairy cattle are to have daily cultures for a total of 5 negative cultures. All dairy cattle are to have an AHP (e.g. Rescue or Accel) (3 oz./gal) disinfectant foot bath in place at all times.

4. General disinfectant use in C Barn: Foot baths should consist of AHP (e.g. Rescue or Accel) (3 oz./gallon) and are to be changed at least once daily, or sooner if >5% organic material is present. Stalls are to be cleaned and disinfected first with detergent scrub, then with dilute AHP (e.g. Rescue or Accel) (3 oz./gal). EXCEPTION: *Cryptosporidium* positive cases – foot baths and stall cleaning should consist of peroxygen disinfectant (Trifectant or Virkon for Cryptosporidium) or accelerated hydrogen peroxide (Rescue or Accel for all other circumstances) at 8 0z/gallon dilution as directed.

E. Enteric Precautions for C Barn

1. Wear disposable gloves and plastic booties or rubber boots when handling an animal. Rubber footwear must be scrubbed with disinfectant as soon as possible. A boot brush must be used to thoroughly clean the bottom and sides of the boot.

2. Wash hands before and after handling the animal. Wear exam gloves while working with all hospitalized animals.

3. Wear a **clean** lab coat or coveralls that remain at the patient's stall. Dirty lab coats or coveralls are to be replaced by the service AHTs.

4. Use a thermometer that is assigned to the patient. Do not share thermometers between patients.

5. The patient should be kept in the stall and not moved to other areas in the clinic if possible. If the animal must be moved, the clinician or staff member on duty must be notified. Moving the animal should occur during a period (i.e. end of day) when it will be possible to do a thorough cleaning before another patient or people traffic through the contaminated path of the infectious patient.

6. The person handling the animal is responsible to ensure the area/equipment is cleaned and disinfected before leaving the area.

Additional specific enteric precautions

1. The stall/pen of neonates less than four weeks of age that have diarrhea and of animals that have diarrhea but do not have *Salmonella* will be posted with an 'Enteric Precautions' sign. These animals should be housed in S1-S5 or bovine stalls on isolation side. <u>All</u> persons entering a stall/pen posted with such a sign are to put on booties over plastic shoe covers ('double boot') or over rubber boots and they are to wear disposable gloves when handling the animals. After each use, booties and gloves are to be discarded in a waste container available at each posted stall/pen, and hands are to be washed with soap.

2. Diarrheic neonates should be handled with eye/mouth protection: either a face shield or eye wear and dust or surgical mask, to prevent gross contamination (preventative measure for *Cryptosporidium*).

3. Feed should be placed in clean, disinfected large rubber tubs and not placed in gutters when cattle require feed to be locked in a stanchion. Cleaning and disinfection of tubs is to be done by the Barn Crew. Hay should be inspected and not used if there are signs of spoilage, fecal contamination, or other contamination. When stanchions are not needed, they should be locked in the closed position.

4. C Barn lawn (the North end only, in pens) can be used for grazing livestock patients that are not under 'Enteric Precaution`. No livestock patients are permitted on the south half of the lawn.

5. Animals are not to be put in a stall/pen that has not been cleaned and disinfected. Stalls/pens that have been red-tagged are not to be re-occupied until environmental cultures of the pen are negative for salmonella.

6. The stall/pen and areas contaminated or potentially contaminated (e.g. adjacent vacant stalls/pens via gutter) by feces or other infectious material are to be red-tagged.

7. The feed room at the south end of C Barn is to be used only by personnel involved in livestock or non-domestic cases. Horse feed and other supplies of horses and camelids are to be kept in the B Barn room designated for that purpose. Other supplies and equipment not routinely needed are to be stored outside C and D Barns.

8. No tissues, such as the reproductive tracts collected from slaughterhouses, are to be stored in C or D Barns.

9. Animals are not to be moved to other stalls, corrals, or pens, except for medical reasons.

F. Handling of Periparturient Ewes and Does, as well as newborn kids/lambs for Prevention of Q fever:

1. **EWES/DOES:** All pre- and post parturition cases (Late term pregnant and up to 3 weeks post-partum, including dystocia, C-section, and normal deliveries): these should be handled as potential Coxiella cases until negative serum ELISA results are back: This means full PPE and fitted N95 mask, eye protection (goggles or safety glasses or face shields), gloves, lab coat or scrubs removed before handling the animals. Orphan kids/lambs – same protocol for 48 hours or until negative ELISA on dam.

   Q-FEVER PPE: Fitted N95 mask and eye protection, as well as standard gloves and protection of exposed arms with lab coats or sleeves.

2. **SEROLOGY:** The VMTH clinician/resident will submit sample for serum from the ewe or doe for ELISA testing to CAHFS in cases in which full PPE would like to be removed, ideally all those that are hospitalized** (submit through SLR on computer so that we get results here).
3. **POST-MORTEM TISSUES:** Placenta or dead fetus: placenta ALWAYS necessary (even a piece of the placenta, when it is retained), both when available. Place in sealed biohazard bag and walked over by VMTH personnel to VMTH Pathology through the cooler entry for necropsy specimens. They should be placed in the BSL3 receiving cooler (first cooler on the left in Necropsy cooler).

4. **NECROPSIES:** Submission of adult pregnant or postparturient ewes/doe carcasses for necropsy at VMTH Pathology. If no serology results, carcasses are to be placed in room #1386 BSL3 Receiving Cooler “Potential Health Hazard or Zoonosis.” They need to access the cooler from the outside, it is the first door on the left. Please do not bring carcasses in through the reception area of Anatomic Pathology.

5. **CONTACT LIST**: Contact list to be kept stall side, until ewe/doe tests negative, as for rabies suspects.

G. Infectious Disease Surveillance, C Barn

1. Any person aware of an animal with clinical signs of salmonellosis or other contagious disease (fever, diarrhea) in C Barn area must immediately notify the IDC Officer and the clinician. If diarrhea is present, a CBC is to be done, the rectal temperature taken, and a fecal sample submitted for salmonella culture within an hour and the enteric precaution sign posted.

2. Clinicians in charge of animals that have other infectious diseases listed in Appendix A or other are to report them immediately to the Infectious Disease Officer or Large Animal Clinic Director.

3. Environmental cultures are to be performed for *Salmonella* monthly in C Barn areas. They are to be performed sooner if a hospitalized animal comes up positive for *Salmonella* on culture.

4. A census of animals in the barns and their specific location is to be taken every day, including weekends and holidays. The census taker must notify the Infectious Disease Officer of any animals showing signs of diarrhea.

H. C-Barn Cleanliness and Sanitation

1. All areas must be cleaned immediately after use to prevent cross contamination with other patients.

2. During regular working hours, it is the responsibility of the C Barn technician to ensure that foot baths are in place and functional, that necessary supplies are available for hand washing, and that the protocol for the C Barn is followed. Foot baths are to contain diluted AHP (e.g. Accel) (3 oz./gallon in general ward, 8 oz. in Isolation).

3. After the entire area has been cleaned and disinfected, environmental cultures are to be taken of the stalls used to house the animal, the stall in which the stocks are located, and any other stalls that could have become contaminated. Culture sites will be the same as for routine stall culturing. In addition, cultures will be taken of the stocks (especially holes and crevices), of all drains in the southeast area, and of the southernmost drains in the northeast end of C Barn.

4. All bedding spilled in the alley will be swept up immediately, and then the entire area will be gently hosed down (not power washed) and disinfected. Water and material must not be allowed past the gate separating the southeast end from the northeast end of the barn. If contamination occurs, a Barn Crew member other than the one cleaning the southeast area is to clean and disinfect all contaminated areas of the northeast end.

5. Walls, floors and equipment will be disinfected daily, or sooner if a suspect or positive case has been in the area.

6. While an animal is isolated in the southeast area, the stall in which the stocks are located and the stocks are to be cleaned and disinfected daily.

7. After the animal has been discharged from FA Isolation, cleaning will follow the same protocol as for red-tagged stalls. In addition, the entire southeast area of C Barn will be re-cleaned and disinfected.

8. Any contamination by diarrheic feces or material potentially containing infectious disease agents is to be considered an emergency and is to be disinfected immediately using a scrub brush/broom and (AHP (e.g. Accel) 3 oz./gal in general ward, 8 oz. per gallon in Isolation). The disinfectant is not to be rinsed off in stalls. In other areas (e.g.-aisle ways), the contact time should be 8 oz. per gallon. Immediately shut off hose if drains are plugged or blocked, or if water overflows gutters into stalls/pens.

9. After working a group of animals of a single client, feces, blood, and any excretion or secretion are to be gently hosed down a drain, using low pressure water and scrubbed with disinfectant (AHP (e.g. Accel) 3 oz./gal [8 oz. per gallon in Isolation]). The disinfectant is not to be rinsed off.

10. If there is an infectious disease alert for *Salmonella f*or the C and D Barn areas, any area that appears not to have been adequately cleaned and disinfected is to be red-tagged. Red-tagged areas are to be cleaned and disinfected by the Barn Crew. The area is to be reopened for use when results of environmental cultures are negative for *Salmonella*.

11. If the trailer has been used to transport an animal with *Salmonella*, it is to be cleaned and disinfected at the Pathology unloading area before it is returned to the large animal area.

12. Indoor alleys are to be kept free of feces, bedding, and feed by sweeping or shoveling material away from stalls and disposing in a waste container. This is the responsibility of the person(s) handling the animal, including a member of the Barn Crew if involved in handling an animal. The alleys are not to be rinsed with high pressure water. If water is necessary to assist in removal of material, only <u>low</u> pressure water is to be used.

13. Cleaning stocks: Immediately after the stocks pen has been used, it is to be hosed down with low pressure to remove organic material. Material is not to be splashed or moved outside the pen. After the initial rinsing, the entire stall is to be scrubbed with disinfectant (AHP (e.g. Rescue or Accel) 3 oz./gal, including the stocks, walls, corners, and floor After the pen has been cleaned and disinfected, the alley in the isolation area is to be scrubbed with disinfectant and gently rinsed with water. It is the responsibility of the C Barn technician to ensure this is done, except at times when the technician is not on duty. At those times, it is the

responsibility of the clinician in charge of the case to ensure the area is properly cleaned and disinfected. If a member of the Barn Crew is involved in helping with cleaning and disinfection, Barn Crew participation either should be scheduled to be last on a shift or planned so that the Barn Crew members change into clean clothes before resuming activities in the rest of the LAC.

14. Milk is to be discarded by pouring it down the sink drain in the feed room or down an alley drain, providing the grate has been moved and no material spills onto the alley or into pens. The milk is to be followed with detergent or soap, then diluted AHP (e.g. Rescue or Accel) (3 oz. per gallon). Claws and inflations are to be sanitized according to the current protocol for cleaning milking equipment before being applied to a cow. After all cows are milked, the equipment and milk lines are to be cleaned in the sink in the feed room according to the protocol for cleaning milking equipment.

15. The tractor and dumpster carts used to muck the area will enter and exit only from the southeast door. Immediately after exiting, the wheels of the tractor and cart, the floor boards of the tractor, and any other area of the tractor and cart contaminated by feces, bedding, etc. will be gently hosed down.

16. Manure dumpsters must be covered and steamed behind D Barn for ≥45 minutes before parking in the pick-up area. Please refer to steaming protocol. The outside surfaces of dumpsters should be disinfected with Rescue or Accel, 3 oz. per gallon.

17. Maintenance of disinfectant foot baths (AHP (e.g. Rescue or Accel) 3 oz./gal, except in Isolation where 8 oz. per gallon should be used), boot brushes, plastic disposable boots, waste containers (for booties, gloves, and other material from pens posted as ‘Enteric Precaution`), disinfectant solutions and supplies, and posted signs is the responsibility of the Barn Crew and technicians. The Barn Crew is to maintain other cleaning equipment, such as shovels and brooms, disinfectant barrels (AHP (e.g. Rescue or Accel) 3 oz./gal water) for disinfection of shovels and brooms, and waste barrels (for manure, straw, feed, etc.) in each exam room and in appropriate locations throughout the barns.

18. Barn Crew members are to clean (detergent first and follow with disinfection with AHP (e.g. Rescue or Accel) 3 oz./gal) trailers immediately after use at the site between C and D Barn. Persons using a trailer are to report to the Barn Crew Supervisor immediately after use.

19. Any violations of the protocol are to be reported immediately either to the infectious disease officer or the Director.

I. Disinfection of Milk Equipment

Washing and Disinfection In Between Cows

1. First set up the four buckets next to the stall with the scale.
2. The first bucket will be a warm water rinse, second bucket hot water with three squirts (3oz) of disinfectant (Solo), third will be a hot water rinse and the last a hot water rinse with one squirt (1 oz) of Blast dairy sanitizer.
3. Weigh the bucket and record, and then dump milk.
4. Then place the claw in the buckets and suck up each bucket and dump in between each rinse.

Final Wash

1. Rinse equipment first with water to wash away Blast residue.
2. Fill the sink half way with hot water and add 12 squirts (12oz) of Solo and make sure to stir the water. Place the claw and lid in the sink. Also add the teat plugs and CMT paddle and let the equipment soak for few minutes. Fill the buckets with hot water and 1 squirt of Blast and let soak for few minutes.
3. Put gloves, paper towels, grain bucket, etc. away
4. Scrub the equipment and rinse. **Make sure the outside of the bucket is scrubbed**
5. You can restock any milking supplies needed at this time.
6. Then rinse equipment and hang on the racks.
7. Then you must disinfect and rinse the alley way if dirty.

Section V
Protocol for the Barn Crew

Feeding

Hay is to be fed away from drains, wet areas, and areas contaminated by feces. Hay should be inspected and not used if there are signs of spoilage, fecal contamination, or other contamination. No feed is to be placed in the gutter.

Barn Cleaning Procedures

A. Barn Cleaning Sequence

The barns should be cleaned in the following order if the same crew is cleaning all the barns. Plan work assignments to avoid Barn Crew from going into ICU after they have worked in other areas of the clinic.

1. VM II ICU (NICU) – using specified manure carts dedicated to NICU
2. Barn ICU – using specified manure dumpsters dedicated to ICU
3. B Barn
4. The equine section of C Barn

   The order of 1-3 may need to be altered per IDC Officer discretion depending on the types and numbers of cases that are in the hospital.

5. Outside paddocks
6. Red Tagged stalls
7. Separate barn crew is to clean C barn and livestock sections of D barn.

- All equipment (bins, shovels, tractors, fork lifts) is to be kept separate between B Barn and C Barn.
- C Barn Isolation: Barn Crew members cleaning C Barn are not to return to horse areas.
- Vacated stalls should be cleaned as promptly as possible if the barns are near capacity. Refer to section 2H, page 12 for specifics about cleaning ICU vacated stalls.

B. General Cleaning Procedures

1. Plastic disposable booties are to be worn before entering any red-tagged or enteric/"IDC protocol" precaution stall. After leaving a stall, the booties are to be discarded.

2. The Barn Crew is responsible for maintaining foot baths with a clean solution of AHP (e.g. Rescue or Accel) 3 oz./gal water, boot brushes, plastic disposable boots, waste containers (for booties, gloves, and other material from pens posted as 'Enteric Precaution`), disinfectant solutions and supplies, and posted signs. The Livestock Service technician is responsible to change the solution in foot baths as needed throughout the day shift.

3. The Barn Crew is responsible for maintaining adequate and fresh disinfection solution (AHP (e.g. Rescue or Accel) 3 oz./gal water) in barrels used to disinfect shovels and brooms for use on the floor and alley.

4. Insect, bird, and rodent control is to be implemented routinely, and as needed. Insects to be controlled include common flies, ants, roaches, and crickets.

5. Removal of organic material is to be by scrubbing with a stiff-bristled brush, broom, or pad and detergent or soap, followed with disinfectant. Water is not to enter stalls that are occupied or that have been cleaned previously.

6. At times when the caseload is low, and at least every 6 months, blocks of stalls are to be cleaned entirely. The area is to be partitioned into banks of vacated stalls to permit thorough cleaning and disinfection of the ceiling, ducts, walls, and stalls.

7. Feeds such as grain, pellets, or concentrate mixes are to be stored in sealed containers, such as barrels with lids, or plastic bags. If there is evidence of dirt, mold, or other contaminants in any of the feeds, the feed is to be discarded in a waste container. Feed bins are to be cleaned with soap and water when empty. Hay from bales that were stored on the ground, or had evidence of having been stored on the ground is not to be fed to horses.

8. The area designated for exercise of animals in ICU is to remain free of tractors, carts, and other equipment or supplies.

C. ICU Cleaning Procedures

1. Stalls B1 through B10 (1114 as needed) and the VM II ICU stalls are designated as the ICU area. These areas are to be cleaned first in the morning or cleaned by Barn Crew before working in other areas of the clinic.

2. Red tagged stalls are to be cleaned after routine stall cleaning is completed (i.e. last).

3. Barn Crew members are to wear a lab coat or coveralls, and rubber boots that are to be scrubbed with disinfectant or plastic disposable booties before entering and after exiting ICU. After leaving a stall, rubber boots that are to be scrubbed with disinfectant or the booties are to be discarded.

4. The cart used for ICU is to be emptied of all material and the inside of the cart

scrubbed with disinfectant (AHP (e.g. Rescue or Accel) 3 oz./gal of water) at least once every two weeks. Separate shovels, and pitchforks are to be used on each stall and disinfected after use (AHP (e.g. Rescue or Accel) 3 oz./gal of water).

5. The Barn Crew is responsible for maintaining adequate and fresh disinfection solution (AHP (e.g. Accel) 3 oz./gal of water) in barrels used to disinfect shovels and brooms for use on the floor, alley, and feed/shavings area.

6. The area designated for exercise of ICU horses is to remain free of tractors, carts, and other equipment or supplies.

D. Occupied Outdoor Pens

1. Fecal material, soiled bedding, and feed is to be removed by shovel/broom, and washed and scrubbed using low pressure water if necessary.

2. New bedding is to be added as necessary.

3. Hay is to be placed in feed in an area of the stall away from any area contaminated by feces, water, or urine.

4. Evidence of diarrhea is to be reported as for (2d) above.

5. Corners of the pen are to be scrubbed first with foaming detergent agent and a stiff-bristled hand brush designed to for scrubbing corners. The walls and floor then are to be scrubbed with foaming agent and water and a stiff-bristled brush. It is not to be hosed down first. All inside walls, the outside of the front wall/gate, and the floor are to be scrubbed, including scuppers (drain holes through concrete walls), pipes, waterers, and feed racks. Scrubbing of walls and floor is to be done in two perpendicular directions (e.g. up and down, then sideways) with overlapping swaths. Sufficient force for cleaning is to be applied to remove organic material when scrubbing. The walls and floor are to be rinsed gently using low pressure water without a nozzle or any restriction. If there are spots where material remains, they are to be rescrubbed. Any material left on the drain cover is to be removed.

6. After foaming detergent agent has been rinsed off, all horizontal surfaces, such as the ledge of the concrete walls, pipes, latches, etc. are to be wiped clean with a sponge and disinfectant (AHP (e.g. Accel) 3 oz./gal water, minimum 10 minute contact time).

E. Vacated Outside D pens

1. Fecal material, bedding, and feed are to be swept up and placed in a dumpster.

2. Remaining organic material is to be removed by brushing with broom and hosing with water.

F. Red tag or 'Enteric Precaution` D pens

1. Fecal material, bedding, and feed are to be swept up and placed in a dumpster.

2. The concrete pad, posts, gates, feed bunk, and water troughs are to be scrubbed with foaming detergent agent and gently rinsed with low pressure water, avoiding splashing or movement of water to adjacent pens or alleys. The area then will be re-scrubbed with disinfectant (AHP (e.g. Rescue or Accel) 3 oz./gal water) using a broom and hand brush where necessary. After 30 min of contact time, the area can be rinsed. After rinsing it should be re-disinfected. The disinfectant is not to be rinsed off.

3. Horizontal surfaces such as ledges and pipes that cannot be scrubbed and rinsed are to be cleaned with a sponge and disinfectant (AHP (e.g. Accel) 3 oz./gal water).

G. Alleys and Feed Room Floor of C Barn

1. Alleys and the feed room floor are to be cleaned in the morning after stalls have been cleaned, between 11:30 AM and 12:30 P.M., and in the evening.

2. Fecal material, bedding, and feed are to be swept or scraped up and discarded in the dumpster. Material is not to be swept into stalls/pens.

3. The alley and feed room floor are to be sprayed with disinfectant (AHP (e.g. Accel) 3 oz./gal water). Any material left in gutters or on drains is to be removed.

8. The area is to be rinsed gently using low pressure water and a hose without a nozzle. Water volume is to be sufficiently low so that the gutters do not overflow into stalls. If drains are plugged, rinsing is to be discontinued until the drains are unplugged. No water is to enter pens or stalls.

9. The areas immediately outside the barn doors on the southwest, northwest, and southeast sides are to be cleaned by sweeping or scraping up all material and then sprayed with disinfectant (AHP (e.g. Accel) 3 oz./gal water). The disinfectant is not to be rinsed off.

H. Outside Alleys (West of C Barn), Pens, and Equipment

1. Pens and alleys are to be cleaned daily.

2. Fecal material, straw, etc. are to be picked up using a broom and/or shovel.

3. The area may be hosed down using low pressure water.

4. All straw and manure is to be removed from drains, curbing, shrubs, and other areas of collection and disposed in a dumpster.

5. At least once a week, disinfectant (AHP (e.g. Rescue or Accel) 3 oz./gal water) is to be applied by sprayer to all concrete areas and drains. It is not to be rinsed off. At least once a week the equipment, including mats on the scale, is to be scrubbed with disinfectant (AHP (e.g. Rescue or Accel) 3 oz./gal water) and gently rinsed off with water. The area is to be disinfected more often than once per week if there is heavy organic contamination or if there is an infectious disease alert in the C or D Barn areas.

I. Detailed Cleaning Procedures

1. OCCUPIED STALLS

a. Soiled bedding and feces are to be removed by carefully placing in a dumpster to avoid creation of dust.

b. New bedding is to be added in a way that minimizes creation of dust.

c. Hay is to be fed below the feed gate, in racks, in hangers, or in barrels, away from drains, wet areas, and areas contaminated by feces.

2. NON- RED-TAGGED, VACATED STALLS

a. Bedding, manure, and feed are to be removed by careful disposal into a dumpster to minimize dust.

b. Loose material is to be swept up in the stall and shoveled into a dumpster, avoiding creation of dust and contamination of the alley area.

c. Stalls are to be rinsed gently with low pressure water. Corners of the stall are to be scrubbed first with foaming detergent agent, then the walls and floor. All inside walls, the outside of the front wall/gate, and the floor are to be scrubbed, including pipes and ledges, water troughs, and feed racks. Brushes with stiff bristles or scouring pads are to be used to physically remove manure and dried material. Appropriate sizes and shapes of brushes are to be used to access corners, and small areas such as gate hinges, and between pipes. Scrubbing of walls and floor is to be done in two perpendicular directions (e.g. up and down, then sideways) with overlapping swaths. Sufficient force for cleaning is to be applied to remove material when scrubbing. The walls and floor are to be rinsed gently using low pressure water without a nozzle or any restriction. If there are spots where material remains, they are to be rescrubbed. Any material left on the drain cover is to be disposed of in a waste container.

d. After foaming agent has been rinsed off, all horizontal surfaces, such as the ledge of the concrete walls, pipes, latches, etc. that cannot be cleaned adequately with a brush are to be wiped clean with a sponge and disinfectant (AHP (e.g. Rescue or Accel) 3 oz./gal water).

e. The area is to be sprayed, as in 2c above, using AHP (e.g. Rescue or Accel) 3 oz./gal water. Disinfectant is allowed to dry.

f. A stall is to be re-cleaned, as above, if it has not been reoccupied within 10 days of the last cleaning. A sheet is to be posted on each vacant stall indicating the date the stall was cleaned and disinfected.

g. Shovels used to clean stalls in B and C barns are to be disinfected with AHP (Rescue or Accel (3 0z per gallon) in between each stall. (Individual shovels are to be used in ICU and Isolation).

3. RED TAG STALLS

Procedure for cleaning and monitoring a red-tagged stall:

a. The procedure is the same as described in (#2, for stalls that are not red-tagged), except there is to be an additional rinse (low pressure water) then rescrubbing with the disinfectant. The disinfectant is to dry on.

b. A stall is to be re-cleaned, as in (3) above, if it has not been reoccupied within 10 days of the date the stall was cleaned and disinfected.

c. No red-tagged stall is to be reoccupied until environmental samples are negative for *Salmonella*. A sheet is to be posted on each vacant stall indicating the date the stall was cleaned, the date environmental samples were taken, the name of the person who took the samples, and the result of the cultures (see Appendix A).

d. Any red-tagged stall for which environmental cultures are positive for *Salmonella* is to be re-cleaned and disinfected as in (3a) above. Before previously red-tagged stalls are to be occupied, environmental cultures are to be taken of the area and cultured negative for *Salmonella*. Before any red tagged stall is to be occupied, all environmental cultures must be negative. Cultures are to be taken by the Barn Crew Supervisor, or by a qualified person designated by him, after disinfectant has dried for at least 4 hours.

First, the area is to be inspected visually to identify possible contamination remaining, such as feces, bedding, or feed. If it appears clean, the area is to be cultured. If there is visual evidence of contamination, the stall is to be rescrubbed with AHP (e.g. Rescue or Accel) 3 oz./gal. Culture swabs are to be dipped in the enrichment broth before swabbing an area. Swabbing is to be done by rolling the swab as it is moved across an area.

Ten cultures taken from the following sites are to be negative for salmonella before the stall/pen can be reoccupied:

site no.	location
1	inside front stall door/gate
2	general swab of the floor
3	inside of the front wall/gate, including water troughs
4	corner of floor and walls
5	vertical corners wall
6	front wall, including ledges, water troughs
7-9	right, back, and left wall, including ledges, water troughs
10	drain, including inside as far as swab reaches

4. RECOVERY STALL

a. Recovery stalls are to undergo routine (pick up waste and hose walls and floors) cleaning after each use by the person who removes the animals from the stall. Thorough cleaning is required at the end of each day. The stall is to be cleaned and disinfected as follows: 1) The stall is to be rinsed with water, scrubbed with detergent, and then sprayed with disinfectant (AHP (e.g. Rescue or Accel) 3 oz./gal water) using a stiff-bristled brush. 2) The mats on all walls, the inside of the door, and the floor are to be scrubbed. 3) Disinfectant is to be allowed contact for at least 10 minutes before being rinsed off with water.

b. At least once per week, both sides of mats, walls, door, and floor are to be scrubbed with detergent, then disinfectant (AHP (e.g. Rescue or Accel) 3 oz./gal) and gently rinsed with water.

5. BLOCK OF STALLS AT ONE TIME

a. Animals will be admitted to areas in the barn that will permit blocks of 3-4 or more vacant stalls are available for thorough cleaning.

b. Cleaning will begin by spraying all high ledges with disinfectant AHP (e.g. Rescue or Accel) 3 oz./gal) and wiping down lights with a sponge moistened with disinfectant. After all high areas and flat surfaces have been scrubbed and rinsed with <u>low</u> pressure water, stalls will be cleaned and disinfected as outlined in (3) above.

c. A permanent record of block cleaning will be maintained in the Barn Crew Supervisor's office.

6. ALLEYS AND FLOORS

a. The alleys, including the equine side of C Barn, are to be vacuumed (or

swept if the vacuum is not available) in the morning after stalls have been cleaned and in the afternoon between 3 and 4 P.M., and sprayed with disinfectant (3 oz./gallon Rescue or Accel). The disinfectant is to be rinsed after 10 minute contact time. .

b. Fecal material, bedding, and feed are to be swept or scraped up and discarded. Material is not to be swept into stalls.

c. The areas immediately outside the barn doors on the north and south end are to be cleaned each morning after stalls have been cleaned by sweeping or scraping up all material and then vacuuming the area. The areas are not to be rinsed with water.

7. FEED ROOM AND TACK ROOM

a. Scrubbed daily with detergent and then disinfectant.
b. Mat, feed barrels, etc. removed then floor cleaned.
c. Mat cleaned both sides.
d. Gently rinsed with water.
e. Maintain hand soap dispenser in room with the sink.

8. STOCKS AND EXAM ROOMS

a. Stocks are to be cleaned each evening.

b. Stocks are to be wiped down using a sponge (and brush if necessary) and detergent, followed by disinfectant (AHP (e.g. Rescue or Accel) 3 oz./gal water).

c. The walls are to be cleaned using detergent followed by a brush or sponge moistened with disinfectant and then rinsed with water.

d. Floors are to be cleaned by scrubbing with a brush/broom and detergent, followed by disinfectant, and then rinsing with water.

9. PLASTIC/RUBBER FEED BARRELS

a. Feed barrels are to be cleaned and disinfected after a stall has been vacated by scrubbing with detergent or soap, followed with disinfectant (AHP (e.g. Rescue or Accel) 3 oz./gal water) and a scrub brush and then rinsing twice with <u>low</u> pressure water.

b. Cleaning is to be done in the stall or area designated by B crew (above large drain near feed room and feed room sinks).

10. SANITATION AND WASTE BARRELS

a. Disinfectant barrels large enough to accommodate a wide shovel or broom are to be filled with sufficient disinfectant (AHP (e.g. Rescue or Accel) 3oz/gal of water) to cover the blade of a shovel. Disinfectant barrels containing a shovel and broom are to be placed in each exam area. Disinfectant is to be changed daily or whenever the solution appears to contain organic material. Old solution is to be discarded by gently pouring down a drain, without spillage to stalls or in the alley.

b. Disinfectant barrels are to be maintained in each exam room, each radiology room, the breezeway between radiology and surgery, the VM II recovery stall breezeway, between the B Barn lawn and VM II, at both the north and south end of B Barn, in the reproduction area of D Barn, at the farrier shop, at two locations in the trailer parking area, and at least two strategic locations in B Barn alleys and by the mare and foal pasture.

c. Waste barrels with a lid and lined with a plastic bag are to be located in similar places as the disinfection barrels. They are to be used for disposal of feces, straw, feed, and other material swept or cleaned from alleys or floors. They are to be changed daily by discarding the material and plastic bag. If the barrel is soiled or appears dirty (inside or outside), the barrel is to be scrubbed with disinfectant (AHP (e.g. Rescue or Accel) 3 oz./gal water) and a scrub brush, and rinsed with water. Waste barrels are to be located wherever a disinfectant barrel is located.

11. ASPHALT SURFACE AND EXERCISE AREA

a. The following areas are to be vacuumed or hosed in the morning immediately after all dumpsters have been emptied:

   - The asphalt at the north & south end of the B -Barn and in front of VMII exam room
   - The dumpsters are not to be emptied in front of the hay barn, in order to avoid contamination of hay with aerosolized or wind-blown fecal matter.

b. The scale and area around the scale are to be cleaned daily by removing dirt, bedding, and fecal material. Debris, such as straw or hay, around the buildings and facilities is to be picked up daily.

12. LOCATION OF TRASH BARRELS WITH LINERS AND LIDS, AND DISINFECTANT BARRELS WITH SHOVEL

a. Midway on the east curb of the B Barn lawn.
b. Adjacent to the radiology/surgery breezeway.

c. Receiving.
d. In each B Barn exam room and in the exam room on the east side of C Barn.
e. Along the east-west alley of B Barn.
f. D Barn.
g. In VM II exam rooms.
h. In VM II recovery stall area.
i. Along the south side of B Barn.
j. Next to the farrier shop.
k. ICU pasture
l. scale

13. **DUMPSTERS**

Dumpsters are to be emptied South of Hay/Storage barn, so that there is no overlap with the Hay barn, to avoid particulate matter from contaminating hay.

14. **TRAILER DISINFECTION AND CLEANING**

a. Trailers are to be cleaned immediately after use.

b. If the last animal(s) transported by the trailer did not have salmonellosis or diarrhea or other contagious disease, the trailer is to be cleaned by first hosing out with water, then scrubbing with detergent, then disinfectant (AHP (e.g. Rescue or Accel) 3 oz./gal water), and then rinsing with water. Cleaning is to be done over the drain on the east side of D Barn.

c. If the last animal(s) to be transported had *Salmonella*, diarrhea or any other contagious disease, the trailer is to be taken directly to drains near the Pathology drop off area and cleaned. The inside and outside of the trailer, including tires and any mats, are to be scrubbed with detergent followed with disinfectant (AHP (e.g. Rescue or Accel) 3 oz./gal water), gently rinsed with low pressure water, rescrubbed with disinfectant, then re-rinsed with water. The trailer is not to return to the VMTH large animal area until it has been cleaned and disinfected. The person(s) cleaning the trailer is to wear plastic booties over rubber boots. After the trailer has been cleaned, any material left on the drain is to be disposed in a proper waste container. Before returning to the large animal area, the booties are to be disposed in a plastic bag and boots scrubbed with disinfectant (AHP (e.g. Accel) 3 oz./gal water). The area around the drain and dock is to be rinsed down after cleaning so that no material remains.

Section VI
Disposal of Infectious Waste and Carcasses

BIOHAZARDOUS INFECTIOUS WASTE listed below must be placed in the designated dumpster in the pathology cooler. (Animal tissue only)

- ALL POISONOUS REPTILES
- ALL PRIMATES
- ALL SHEEP
- FORMALIZED TISSUE (MINUS THE FORMALIN)
- ALL MATERIALS AND CARCASSES INFECTED WITH THE FOLLOWING ETIOLOGIC AGENTS
  - *Bacillus anthracis*
  - *Brucella spp*
  - *Chlamydia psittaci*
  - *Coccidioides immitis*
  - *Coxiella burnetii*
  - *Mycobacterium avium*
  - *Mycobacterium bovis*
  - *Mycobacterium tuberculosis*
  - Rabies virus
  - Vesicular stomatitis virus
  - *Yersinia pestis*

  (Any foreign animal disease exotic to the U.S.)
  - West Nile Virus
  - Scrapie
  - Others as per Pathology service

INFECTIOUS LARGE ANIMAL CARCASSES MUST BE:

1) Labeled as "infectious", (identifying suspected etiologic agent)

2) Placed in the cooler on the last (“rabies”) rail.

3) Carcasses will be transported by Pathology staff to CVDLS for incineration.

Section VII
Compliance and Modifications

A. Compliance

Individuals who are judged to be ignoring the protocol will be referred to the Hospital Director. Willful failure to comply with IDC protocols may be grounds for dismissal or loss of hospital privileges.

B. Protocol Modifications

The protocol may be modified at any time to address changes in infectious disease control programs or in emergency situations.

Section VIII: General IDC principles: Miscellaneous

A. Attire for exiting large animal clinic

When leaving the large animal clinic, attire should be changed prior to visiting campus cafeteria or other public food sources such as grocery stores and restaurants. Hands should be washed well, and shoes should be clean or disinfected prior to leaving.

This includes soiled clothing and surgical attire.

B. Bandages, feed, hay, and dressings should not be placed directly on the floor to avoid contamination with floor pathogens.

Please place all of the above on a cart, table, or protective barrier.

C. Cross traffic between barns and small animal-large animal clinic should be minimized.

Only personnel assigned to rotations/cases/clinic duties and people requesting/performing consults should cross areas. When going to different areas of the hospital, personnel should make sure that their shoes and clothing are not contaminated with feces or body fluids, and should wash hands upon entering / exiting.

D. Reportable Disease:

Reportable diseases are to be reported by the diagnostic laboratories and the IDC officer or Safety Officers to the California Department of Food and Agriculture (CDFA) 916-900-3002(See APPENDIX of reportable diseases). Centers for Disease Control (CDC) is to be notified of Q fever (*Coxiella burnetii*) and botulism positive cases by the VMTH Safety Officer or IDC Officer 800-232-4636.

The following are immediately notifiable to CDC:

Bacillus anthracis (anthrax)
Clostridium botulinum isolation
Ebola
Hantavirus

The following are notifiable to CDC upon next business day:

Brucellosis
Burkholderia mallei (Glanders)
Eastern Equine Encephalitis virus
Mycobacterium tuberculosis complex (M. tuberculosis, M. bovis, M, africanum, M. canetti, M microti)
Q fever (*Coxiella burnetii*)
Vancomycin-resistant *Staphylococcus aureus*

The following are reportable to CDC by written notification within 1 week:

Babesia
Carbepenem-resistant, Acinetobacter sp, E coli, Klebsiella, Enterobacter sp, or Pseudomonas
California/LaCrosse serogroup viral infection (LaCross Encephalitis virus, Jamestown Canyon virus, Snoeshoe Hare Virus, Trivittatus Virus, Keystone Virus, California Encephalitis Virus)
Chlamydia psittaci
Cryptosporidium
Listeria
Rabies
Salmonellosis
Shigella
Streptococcus pneumoniae
St Louis encephalitis virus
Trichinella
Vancomycin-resistant Enterococcus
Vibrio
West Nile
Western Equine Encephalitis

Appendices

Appendix A - EMERGENCY ANIMAL DISEASE

Emergency Animal Diseases
The following are emergency animal diseases that are to be reported to the California Department of Food and Agriculture Division of Animal Industry Animal Health Branch by the IDC Officer, Safety Officer, or Director's Office within 24 hours of discovery. Phone number (916) 654 1447 or 916-900-3002. (See APPENDIX for complete list)

African horse sickness
African swine fever
African trypanosomiasis
Anthrax
Bovine pleuropneumonia
Bovine piroplasmosis
Brucellosis
Cattle scabies
Dourine
Eastern equine encephalitis
Equine piroplasmosis
Foot-and-mouth disease
Fowl plague
Glanders
Heartwater
Hog cholera
Ornithosis of poultry
Q fever
Rift Valley fever
Rinderpest
Scrapie
Screwworms
Sheep scabies
St. Louis encephalitis
Venezuelan equine encephalomyelitis
Vesicular exanthema
Vesicular stomatitis
Viscerotropic velogenic Newcastle disease

Appendix B - C & D Status of Stall

Stall number _____

Date C & D _____, by (give initials)

Date swabbed _____, by (give initials)

Results: (positive or negative), date of results _____

Appendix C - IDC Protocol Stall Sign

Signs with the following words must be posted as indicated in the policy.

IDC PROTOCOL (IDC precaution)
(For handling potential infectious animals)

1. Wear disposable gloves and plastic booties or rubber boots when handling an animal. Rubber footwear must be scrubbed with disinfectant upon exiting stall. A boot brush must be used to thoroughly clean the bottom of the boot.

2. Wash hands before and after handling the animal.

3. Wear a **clean** lab coat or coveralls that remain at the patient's stall. Dirty lab coats or coveralls are to be replaced by the service AHTs.

4. Use a thermometer that is assigned to the patient. Don't share thermometers between patients.

5. The patient should be kept in the stall and avoid exercising the animal. Approval from IDC Officer must be obtained to walk patients other than ICU/NICU cases that have moved to B barn, and that have no IDC concerns.

6. Fecal samples are to be submitted daily (x5) for salmonella culture. One Clostridium difficile toxin assay must be performed if the horse has been treated with antibiotics.

7. The person handling the animal is responsible to ensure the area/equipment is cleaned and disinfected before leaving the area.

8. Use a foot bath – 3 or 8 oz./gallon (3 oz./gallon in general, 8 z/gallon per IDC Officer) AHP (e.g. Accel). Use only shallow red buckets for foot baths.

The Center for Food Security and Public Health at Iowa State University has a web page that provides information on many significant zoonotic pathogens. You can bookmark this website for a quick reference.

http://www.cfsph.iastate.edu/DiseaseInfo/default.htm

Here is a website with information on characteristics of Selected Disinfectants

http://www.cfsph.iastate.edu/BRM/resources/Disinfectants/CharacteristicsSelectedDisinfectants.pdf

Definitions: Infectious Disease Control Precautions

Veterinary Standard and Staff Precautions

Use Veterinary Standard Precautions for the care of all patients.

A. Hand washing

1. Wash hands after touching blood, body fluids, secretions, excretions, and contaminated items, whether or not gloves are worn. Wash hands immediately after gloves are removed, between patient contacts, and when otherwise indicated to avoid transfer of microorganisms to other patients or environments. It may be necessary to wash hands between tasks and procedures on the same patient to prevent cross-contamination of different body sites.

2. Wash hands between handling patients. Frequent hand washing has been proven to be the most important component to prevent the spread of infectious diseases. Hands should be scrubbed for at least 30 seconds. Hands must be thoroughly dried afterward. For appropriate hand washing/hygiene technique, please see:

3. http://www.nejm.org/doi/full/10.1056/NEJMvcm0903599?emp=marcom&

4. Use a plain (non-antimicrobial) soap for routine hand washing.

5. Use an antimicrobial agent or a waterless antiseptic agent for specific circumstances (e.g., control of outbreaks or hyperendemic infections.)

B. Gloves

1. Wear gloves (clean, nonsterile gloves are adequate) when touching blood, body fluids, secretions, excretions, and contaminated items and any hospitalized patients.

2. Put on clean gloves just before touching mucous membranes and non-intact skin.

3. Change gloves between tasks and procedures on the same patient after contact with material that may contain a high concentration of microorganisms.

4. Remove gloves promptly after use, before touching non-contaminated items and environmental surfaces, and before going to another patient; wash hands immediately to avoid transfer of microorganisms to other patients or environments.

C. Mask, Eye Protection, Face Shield

Wear a mask and eye protection or a face shield to protect mucous membranes of the eyes, nose, and mouth during procedures and patient-care activities that are likely to generate splashes or sprays of blood, body fluids, secretions, and excretions.

D. Gown

Wear a gown (a clean, non-sterile gown is adequate) to protect skin and to prevent soiling of clothing during procedures and patient-care activities that are likely to generate splashes or sprays of blood, body fluids, secretions, or excretions. Select a gown that is appropriate for the activity and amount of fluid likely to be encountered. Remove a soiled gown as promptly as possible and wash hands to avoid transfer of microorganisms to other patients or environments.

E. Patient-Care Equipment

Handle used patient-care equipment soiled with blood, body fluids, secretions, and excretions in a manner that prevents skin and mucous membrane exposures, contamination of clothing, and transfer of microorganisms to other patients and environments. Ensure that reusable equipment is not used for the care of another patient until it has been cleaned and reprocessed appropriately. Ensure that single-use items are discarded properly.

F. Environmental Control

Ensure that routine care, cleaning, and disinfection of environmental surfaces, cages, runs, equipment, and other frequently touched surfaces, and ensure that these procedures are being followed.

G. Linen

Handle, transport, and process used linen soiled with blood, body fluids, secretions, and excretions in a manner that prevents skin and mucous membrane exposures and contamination of clothing, and that avoids transfer of microorganisms to other patients and environments. Wear disposable gloves when handling material that have been in contact with patients.

H. Occupational Health and Blood borne Pathogens (precautions for dealing with human blood, but are also good general guidelines for handling specimens from animals with possible zoonotic diseases)

Take care to prevent injuries when using needles, scalpels, and other sharp instruments or devices; when handling sharp instruments after procedures; when cleaning used instruments; and when disposing of used needles. Never recap used needles, or otherwise manipulate them using both hands, or use any other technique that involves directing the point of a needle toward any part of the body; rather, use either a one-handed "scoop" technique or a mechanical device designed for holding the needle sheath. Do not remove used needles from disposable syringes by hand, and do not bend, break, or otherwise manipulate used needles by hand. Place used disposable syringes and needles, scalpel blades, and other sharp items in appropriate puncture-resistant containers, which are located as close as practical to the area in which the items were used, and place reusable syringes and needles in a puncture-resistant container for transport to the reprocessing area.

I. Patient Placement: Airborne precautions

Avoid close confinement with other patients if possible.

Airborne Precautions

In addition to Standard Precautions, use Airborne Precautions, or the equivalent, for patients known or suspected to be infected with microorganisms transmitted by airborne droplet nuclei (small-particle residue [5 µm or smaller in size] of evaporated droplets containing microorganisms that remain suspended in the air and that can be dispersed widely by air currents within a room or over a long distance).

A. Patient Placement

Avoid close confinement with other patients if possible.

B. Respiratory Protection

Wear respiratory protection (N95 mask or respirator) when entering the exam room/stall of a patient with known or suspected infectious zoonotic diseases that are transmitted through respiratory aerosol spread, such as *Coxiella burnetii*, agent of Q fever. These should also be worn with animals infected with *Coccidioides immitis*, agent of Valley Fever, whenever infectious materials are exposed (including tracheal wash, pleural fluids, draining tracts).

C. Patient Transport

Limit the movement and transport of the patient from the stall to essential purposes only.

Droplet Precautions

In addition to Standard Precautions, use Droplet Precautions (N95 mask and eye protection), or the equivalent, for a patient known or suspected to be infected with microorganisms transmitted by droplets (large-particle droplets [larger than 5 µm in size] that can be generated by the patient during coughing, sneezing, talking, or the performance of procedures).

Limit the movement and transport of the patient from the room to essential purposes only. If transport or movement is necessary, minimize patient dispersal of droplets by masking the patient, if possible.

Contact Precautions: Skin Contact

In addition to Standard Precautions, use Contact Precautions, or the equivalent, for specified patients known or suspected to be infected or colonized with epidemiologically important microorganisms that can be transmitted by direct contact with the patient (hand or skin-to-skin contact that occurs when performing patient-care activities that require touching the patient's dry skin) or indirect contact (touching) with environmental surfaces or patient-care items in the patient's environment. E.g.-Methicillin resistant *Staphylococcus aureus* (MRSA).

A. Patient Placement

Avoid close confinement with another patient when possible.

B. Gloves and Hand washing

1. In addition to wearing gloves as outlined under Standard Precautions, wear gloves (clean, non-sterile gloves are adequate) when entering the exam room/stall. During the course of providing care for a patient, change gloves after having contact with infective material that may contain high concentrations of microorganisms (fecal material and wound drainage).

2. Remove gloves before leaving the patient's room and wash hands immediately with an antimicrobial agent or a waterless antiseptic agent.

3. After glove removal and hand washing, ensure that hands do not touch potentially contaminated environmental surfaces or items in the patient's room to avoid transfer of microorganisms to other patients or environments.

C. Gown

In addition to wearing a gown as outlined under Standard Precautions, wear a clean, non-sterile gown when contact with the patient, environmental surfaces, or items in the patient's room is anticipated, or if the patient is incontinent or has diarrhea, or has wound drainage not contained by a dressing. Remove the gown before leaving the patient's environment. After gown removal, ensure that clothing does not contact potentially contaminated environmental surfaces to avoid transfer of microorganisms to other patients or environments.

D. Patient Transport

Limit the movement and transport of the patient from the room to essential purposes only. If the patient is transported out of the room, ensure that precautions are maintained to minimize the risk of transmission of microorganisms to other patients and contamination of environmental surfaces or equipment.

E. Patient-Care Equipment

When possible, dedicate the use of non-critical patient-care equipment to a single patient to avoid sharing between patients. If use of common equipment or items is unavoidable, then adequately clean and disinfect them before use for another patient.

Fact Sheets

Hand Washing Protocol

Procedure:

1. Hold drying towel under arm for use after washing hands to avoid touching dirty faucet or towel dispenser.
2. Use cold to warm running water. Avoid use of hot water as repeated use can lead to dermatitis.
3. Use soap.
4. Wash all surfaces thoroughly, including wrists, palms, back of hands,
5. Fingers, and under fingernails (if possible, with a nailbrush).
6. The generally accepted correct hand washing time and method is a 30 to 60-second vigorous rubbing together of all lathered surfaces followed by rinsing in a flowing stream of water.
7. If hands are visibly soiled, more time may be required.
8. When drying, begin with your fingertips and work towards your elbows.
9. Pat your skin rather than rubbing, to avoid chapping and cracking.
10. Turn off faucet using the drying towel.
11. Apply hand lotion after washing to help prevent or soothe dry skin.
12. Please refer to the following site for hand washing technique:
    http://www.nejm.org/doi/full/10.1056/NEJMvcm0903599?emp=marcom&

Adequate hand washing is a critical, well-documented component in the fight to contain infectious diseases, yet many individuals still do not follow appropriate hand washing protocols. Today, the spread of nosocomial infections, in particular, can be attributed in large part to the failure of hospital personnel washing their hands before and after each patient contact. Hand washing before and after all patient contacts can significantly reduce the spread of infectious diseases, especially in a hospital setting where infections quickly run rampant. Strict adherence to this basic and most effective infection control practice should not be limited to hospitals; medical professionals in clinical settings also need to ensure that hand washing is a routine part of patient care.

Strict adherence to hand washing policies will not totally eliminate nosocomial infections or community transmission. However, the CDC recognizes adequate hand washing as the single most

important factor in the prevention of nosocomial infections, especially since the hands of healthcare providers transmit most endemic nosocomial infections.

Hand washing is recommended when there is contact with any patient. Hand washing is necessary before and after situations in which hands are likely to become contaminated, especially when hands have had contact with mucous membranes, blood and body fluids, and secretions or excretions, and after touching contaminated items such as urine-measuring devices. Even if gloves are worn, hand washing is still extremely important when gloves are removed. Gloves may become perforated and bacteria can multiply rapidly on gloved hands.

Immunocompromised Individuals

People with potentially immunocompromising conditions should discuss safety issues with their doctors.

People are considered immunocompromised if they:

1. Have health issues such as repeated hospitalizations, diabetes mellitus, chronic renal failure, leukopenia, immune-mediated disease, congenital immunodeficiencies, hepatic cirrhosis, cancer and splenectomy or other immunocompromising disease.
2. Are receiving chemotherapy, immunosuppressive therapy, or anti-rejection therapy
3. Have HIV infection or AIDS complex disease
4. Very young (fetuses, infants, preschoolers) and geriatric people
5. On antimicrobials for an infection
6. Are pregnant, although the immunosuppressive effects of pregnancy are considerably lower than those of many of the above concurrent diseases, immunosuppressive therapy, chemotherapy, or AIDS.

People with immunosuppression are at increased risk of acquiring infections, including zoonoses. Immunosuppressed individuals working at the VMTH should avoid handling patients with suspected infectious diseases. Gloves should always be worn when handling animals, and hands should be washed before and after handling each patient. Gloves and a face mask should be work when handling urine or feces from animals. Immunocompromised people should not handle feces, even when wearing gloves. Should bites or scratches occur, they should be flushed and washed with water and antiseptic solution immediately and supervisors should be notified immediately. Animals should never be allowed to lick skin or mucous membranes.

Avoid bringing children that are preschool age or less into areas of the VMTH where patients are receiving treatment.

Please contact your primary doctor and the infectious disease control officer if you are immunocompromised and wish to discuss ways to minimize risk of infection in the hospital.

Infectious Diseases of Significant Zoonotic Concerns

The **Center for Food Security and Public Health at Iowa State University** has a web page that provides information on many significant zoonotic pathogens. You can bookmark this website for a quick reference.

http://www.cfsph.iastate.edu/FastFacts/default.htm

See also Center for Disease Control website:

https://www.cdc.gov/

Anthrax (*Bacillus anthracis*)

Anthrax affects cattle, sheep, goats, horses, pigs, dogs, cats, wildlife and humans. It is caused by a spore forming bacteria. It causes three clinical forms in humans: cutaneous, pulmonary, and gastrointestinal. Infection of the skin form is through contact with infected animals or carcasses, contaminated wool, hides, or fur. The pulmonary form is through inhalation of spores from these sources. GI infection is through eating undercooked meat this is contaminated.

Disinfection
Spores are highly resistant. They can be killed with 2% glutaraldehyde, formaldehyde or 5% formalin.

Clinical signs
Most cases are cutaneous: papules, vesicles, followed by black scab. Cellulitis and edema are common. Pulmonary- upper respiratory infection which progresses to lower disease and death. GI form is gastroenteritis with vomiting and bloody stool.

PPE
Gloves, eye protection, respiratory protection (N95 or higher level). Avoid contact with blood. Necropsy should not be performed on cases. Alert pathology for diagnostic testing through CAHFS. Report to CDFA.

Salmonella

Salmonella is the most ubiquitous group of bacteria that can cause diarrhea. The most common infection route is through contaminated food, water and fomites. Airborne transmission is less likely, although possible, as the organism can survive on airborne particles.

Salmonella in domestic animals is more prevalent than clinical disease would indicate. Gastrointestinal colonization of *Salmonella* may occur with or without clinical illness. Most animals shedding salmonellae in feces have no clinical signs. Many factors influence

colonization of *Salmonella*, including the quantity of organism ingested, stability of intestinal bacteria flora, feed intake, and use of antibiotics. The stress associated with hospitalization and surgery can increase the risk of salmonellosis. Impairment of the immune system, such as chemotherapy, HIV, or the use of steroids can also increase the risk of infection. The organism is typically destroyed by the stomach pH. Young animals are more susceptible to infection, and similarly healthy children under the age ten have less immunity to infection compared to older people who have had previous exposure to *Salmonella* in the environment.

Clinical signs of salmonellosis appear within 3-5 days after exposure. The most common form is gastroenteritis, an intestinal disease usually resulting from contaminated food. Symptoms in humans include nausea, abdominal pains, diarrhea, and fever; it can lead to death, especially in people with impaired immune systems. Treatment in humans includes rest, replacement of lost body fluids, and antibiotics. The generalized form is often called paratyphoid fever because it resembles typhoid fever. Milk, especially unpasteurized (raw) milk, undercooked chicken and eggs, and food prepared in an unsanitary manner are major sources of the disease; it is also contracted through exposure to infected pets, such as turtles and iguanas. Increased rates of salmonellosis have led to recommendations to keep foods refrigerated, cook them thoroughly, and wash cooking surfaces, utensils, and hands immediately after preparing foods.

Prevention

Prevention in dogs, cats, horses, small ruminants, pigs, and cattle is difficult because there are carriers in the sub-clinical form or animals with a latent infection with no clinical signs. Isolation is standard if the disease is confirmed from isolating the organism from a fecal sample. The best prevention is to prevent cross contamination with known positive cases. The organism can be shed in feces, mouth and body fluids. Hand washing and change of soiled clothing and foot wear is the best method for preventing cross contamination between animal patients in the clinic. The use of AHP (e.g. Rescue or Accel) with a dilution of 1:16 or 8 oz./gal of water provides an effective disinfectant for salmonellae.

Rabies virus (Rabies, hydrophobia, lyssa)

Rabies virus is a virus belonging to the rhabdoviridae. It is a bullet-shaped, enveloped RNA virus.

Rabies virus causes an almost invariably fatal acute encephalomyelitis. In humans this begins with signs of apprehension, headache, fever, malaise and sensory changes that may be referred to site of preceding animal bite wound. This progresses to paresis or paralysis. There may be spasm of muscles of deglutition on attempts to swallow, which leads to fear of water. Delirium and convulsions follow after duration of 2 to 6 days, with death due to respiratory paralysis.

Rabies occurs worldwide. Rabies free areas include Australia, New Zealand, Japan, Hawaii, Taiwan, UK, Ireland, Spain, Portugal, and mainland Norway and Sweden. The virus infects humans, dogs and cats, horses, cattle, wild carnivores, rodents and bats. Humans in the United States are most likely to become infected from bats, raccoons, and skunks. Any unvaccinated animal that inflicts a bite wound should be considered a rabies suspect until proven otherwise.

Rabies is usually acquired following introduction of virus-laden saliva from a rabid animal by a bite or rarely into a fresh break in skin or through intact mucous membranes. The incubation period is usually 2 to 8 weeks, but occasionally as short as 10 days or as long as 1 year or more. The incubation period depends on the severity of the wound, the site of the wound in relation to richness of nerve supply and distance from the brain, the amount of virus introduced, protective clothing and other factors.

Rabies virus is inactivated rapidly in sunlight and does not survive for long periods out of host unless protected in a cool dark area. It is susceptible to most disinfectants, including 1% sodium hypochlorite, 2% glutaraldehyde, 70% ethanol, and formaldehyde.

Prevention
Pre-exposure immunization of individuals at high risk (including laboratory workers, veterinarians and other animal handlers) is recommended with Human Diploid Cell Vaccine (HDCV). Bite wounds should be thoroughly cleansed and flushed with soap and water followed by application of either 70% alcohol, or tincture or aqueous solutions of iodine. Medical attention should be sought (as for any bite wound). Suturing of wound should be avoided. If rabies is suspected or confirmed, post-exposure prophylaxis may be necessary. Public health officials should be contacted in this situation. Post-exposure prophylaxis involves parenteral administration of rabies immune globulin (RIG), and a series of vaccinations with HDCV in previously unvaccinated individuals as soon as possible after exposure. Previously vaccinated individuals should receive booster vaccinations. Rabies suspects should be euthanized as soon as possible and the brain should be submitted for fluorescent antibody testing.

Streptococcus pneumoniae* and *suis

S. pneumoniae and *S. suis* have potential for zoonotic transmission. If these are cultured from an animal (S. pneumoniae- horse, ruminant, swine) (*S. suis*- swine) then the patient should be housed in Isolation with barrier precautions and N95 mask. Suspect cases – for example pigs with pneumonia or sepsis- should be handled with barrier precautions and a surgical mask.

Mycobacteriosis (agent of tuberculosis)

Mycobacteria are Gram-positive bacteria that are fairly resistant in the environment.
They are classified as follows:

- *M. tuberculosis* and *M. bovis* – highly pathogenic intracellular bacteria. Produce tuberculous mycobacteriosis. Maintained by infection of humans and cattle (respectively), survive 1-2 weeks in the environment.
- Opportunistic, soil mycobacteria – survive > 2 years in the environment. May be:
    - Slow-growing (e.g. *M. avium* complex) – can produce pathologic lesions that may be indistinguishable from those caused by *M. bovis* and *M. tuberculosis.*
    - rapidly-growing (e.g. *M. thermoresistible, M. chelonae, M. fortuitum, M. smegmatis*). Often produce cutaneous lesions, but may disseminate.

Opportunistic mycobacterial infections are as likely to be acquired from the environment as they are from pets, but immunocompromised people should avoid contact with infected pets. These will not be discussed further.

- Lepromatous mycobacteria (e.g. *M. lepraemurium*) – produce localized cutaneous nodules. Extremely difficult or impossible to culture. These do not appear to be a human health hazard and will not be discussed further.

M. tuberculosis has a tropism for the lungs. Animals may be infected following prolonged exposure to respiratory secretions of infected humans or other animals. *M. bovis* infection usually follows ingestion of unpasteurized milk or uncooked meat from infected cattle. Cats are most commonly infected, and infection usually localizes in the GI tract. Dogs and cats may maintain the infection in cattle on farms, and they rarely have been involved in spread of the disease to people.

Transmission is through inhalational and oral routes. Aerosol transmission from infected animals, or oral or cutaneous exposure through contact with infected tissues or contaminated surfaces, or ingestion of unpasteurized milk.

Diagnosis involves the use of histopathology, culture and PCR. PCR is the test of choice for rapid diagnosis. Treatment of these infections typically involves use of combinations of drugs for many months.

Prevention

Chemoprophylaxis should be considered for exposed pets. Affected or suspect animals should be placed in isolation, handled only by selected individuals, and the infectious disease control officer should be notified immediately, such that the appropriate public health officials may be contacted. Gowns, gloves, and N95 respirators should be worn. Skin testing is recommended for exposed individuals, generally twice at three month intervals.

Disinfection

M. bovis is relatively resistant to disinfectants. Mycobacteria can survive for several months in the environment, especially in dark, cool and moist conditions. Disinfectants include 5% phenol, high concentrations iodine solutions, glutaraldehyde and formaldehyde, and 1% bleach with long contact times.

Leptospirosis

Leptospira interrogans (Leptospirosis, Weil's disease, Canicola fever, Hemorrhagic jaundice, Mud fever, and Swineherd's disease)

Leptospira is a spirochete bacterium. There are over 150 different serovars including *icterohaemorrhagiae, bratislava, hardjo*, *canicola*, *grippotyphosa*, *autumnalis*, and *pomona*

Leptospirosis is found worldwide. The host range includes humans, domestic and wild animals. It is primarily spread through contact of urine from infected animals. It may also be transmitted through ingestion of contaminated food or water, or direct contact with abraded skin or mucous membranes. It is an occupational hazard to rice and sugar cane field workers, farmers, vets, miners, animal handlers, and lab workers handling infected rodents or dogs. Outbreaks occur among those exposed to river/lake contaminated by urine of animals. Farm and pet animals, including cattle, dogs, horses and swine; rats and other rodents act as the normal carrier host; wild animals, including deer, squirrels, foxes, skunks and even reptiles and amphibians may be infected. In carrier animals, a subclinical infection occurs.

Signs in infected humans include fever, headache, chills, severe malaise, vomiting, myalgia and conjunctival suffusion; occasionally meningitis, rash and uveitis; sometimes jaundice, renal insufficiency, anemia and hemorrhage of the skin. Clinical illness lasts 3 days to few weeks, and asymptomatic infection is possible. There is a low case fatality rate but this increases with age. The infection is effectively treated in many cases with penicillin or tetracycline antimicrobials.

Leptospirosis is transmitted by contact of the skin or mucous membranes with contaminated water, soil or vegetation; direct contact with urine, abortion products or tissues of infected animals; and occasionally through ingestion of contaminated food. The incubation period is usually 10 days with a range of 4 - 19 days.

Direct transmission from person to person or animal to person is rare, but nevertheless leptospirosis is an important zoonosis. Leptospires may be excreted in the urine of untreated individuals for usually 1 month but has been observed as long as 11 months after the acute illness. Once treatment with doxycycline or penicillin drugs has been initiated, shedding ceases within a few days. Organisms can survive in soil contaminated with infected urine for several weeks.

Prevention

Leptospira spp. are very susceptible to ionophore disinfectants, 1% sodium hypochlorite, 70% ethanol, glutaraldehyde, and formaldehyde, and they are sensitive to moist heat and freezing (121·C for at least 15 min). Once treatment of patients with penicillin or tetracycline antimicrobials has been initiated, shedding probably ceases rapidly (within 24-48 hours), although this has not been conclusively documented. When handling animals that may be infected, a laboratory coat or disposable gown and gloves should be worn. These should also be worn when there is the likelihood of direct skin contact with infectious materials. Afterwards, hands should be washed according to protocol. Immunocompromised individuals, including pregnant women, should avoid working with animals suspected to have leptospirosis.

Following a urine spill, aerosols should be allowed to settle. Wearing protective clothing and personal equipment, gently cover spill with an absorbent material (paper towel) and apply Accel (8 oz. per gallon), 1% sodium hypochlorite or ionophore disinfectants, starting at perimeter and working towards the center; allow sufficient contact time (10 min) before clean up. Dispose of waste into biohazard container. Samples should be stored in sealed containers that are appropriately labeled.

PPE
Gloves, boots or shoe covers, eye protection or face shield with suspects or positive cases. If droplet exposure to urine is likely, N95 mask respirator should be worn.

*Safety needles should be used with Leptospirosis suspect or confirmed cases.

Listeria

Listeria is a Gram positive bacterium that can affect a wide host range including ruminants, horses, and humans. The incubation period is up to 70 days. Cattle and other animals may shed subclinically. Signs in humans include flu-like signs, gastroenteritis, chronic fatigue, septicemia, and meningoencephalitis.

Transmission is through direct contact with infected material, feces, or contaminated soil. Respiratory exposure is possible. Oral-fecal transmission and ingestion of contaminated foods is also possible.

PPE
Frequent hand washing, gloves, outer barrier clothing, eye protection, and a N95 respirator when handling suspect or positive animals or tissues.

Bacterial and Protozoal Diarrhea

Organisms causing diarrhea in animals that may be potential zoonoses are *Campylobacter*, *Clostridium* spp., and the protozoal organisms *Giardia* and *Cryptosporidium*. *Campylobacter* is usually diagnosed using fecal culture. Pathogenic clostridial infection is best diagnosed using fecal ELISA assays for clostridial toxins; growing the organism from stool does not imply a toxin-producing species. *Giardia* and *Cryptosporidium* are usually diagnosed following fecal flotation, acid-fast stains, IFA, or PCR.

These organisms may cause diarrhea in immunocompetent humans, and especially immunocompromised people. Infection of the immunocompromised with *Cryptosporidium* in particular may result in severe illness.

Whenever these organisms are suspected appropriate precautions should be taken when handling affected animals. Affected animals should be treated promptly. Gloves should be worn, together

with either a laboratory coat or a gown. Hands should always be washed after handling the animals.

Cryptosporidium has an incubation period of 2-7 days. Clinical signs include abdominal pain, nausea, anorexia, watery diarrhea and vomiting.

Accelerated hydrogen peroxide AHP (e.g. Rescue or Accel) disinfectants should be used per label at highest concentration (8 oz./gal). If *Cryptosporidium* is diagnosed, Rescue or Accel should be used at a concentration of 8 oz. per gallon.

PPE with *Cryptosporidium or Giardia* suspects or positive cases: Gloves, protective barrier clothing, and face protection (either face shield or eyewear + mask). Frequent hand washing and use of peroxygen based foot baths and disinfection.

***Coxiella burnetii* (agent of Q-Fever)**

Reference:

Prevention and Control of *Coxiella burnetii* Infection among Humans and Animals: Guidance for a Coordinated Public Health and Animal Health Response, 2013

National Association of State Public Health Veterinarians

National Assembly of State Animal Health Officials

Handling of Periparturient Ewes and Does, as well as newborn kids/lambs for Prevention of Q fever:

1. EWES/DOES:
   All pre- and post parturition cases (Late term pregnant and up to 3 weeks post partum, including dystocia, C section, and normal deliveries): these should be handled as potential Coxiella cases until negative serum ELISA results are back: This means full PPE with fitted N95 mask, eye protection (goggles or glasses or face shields), gloves, lab coat or scrubs removed after handling the animal. Orphan kids/lambs- same protocol for 48 h or until negative ELISA on dam.

   Q-FEVER PPE: Fitted N95 mask and eye protection, as well as standard gloves and protection of exposed arms with lab coats or sleeves

2. SEROLOGY:-
   The VMTH clinician/resident will submit sample for serum from the ewe or doe for ELISA testing to CAHFS in cases in which full PPE would like to be removed, ideally all those that are hospitalized** (submit through CLR on computer so that we get results here).

3. POST MORTEM TISSUES: **Placenta or dead fetus: placenta ALWAYS necessary (ev en a piece of the placenta, when it is retained), both when available**

    - Placed in sealed biohazard bag and walked over by VMTH personnel to VMTH Pathology through the cooler entry for necropsy specimens. They should be placed in the BSL-3 Receiving Cooler (first cooler on left in Necropsy cooler)

4. NECROPSIES: Submission of adult pregnant or postparturient ewes/doe carcasses for necropsy at VMTH Pathology: If no serology results: Carcasses are to be placed in Room 1386 BSL 3 Receiving Cooler" "Potential Health Hazard or Zoonosis". They need to access the cooler from the outside, it is the first door on left. Please do not bring carcasses in through the reception area of Anatomic Pathology.

5. CONTACT LIST: Contact list to be kept stall side, until ewe/doe tests negative, as for rabies suspects.

A. Transmission:

Q fever (*C.burnetti* infection) is a zoonotic infection, which in the veterinary setting is most often transmitted from periparturient ruminants through the inhalational route. The disease in humans can range from asymptomatic to flu-like signs to chronic infection. In ruminants it can be a cause of abortions, although animals with normal deliveries may also shed the agent. Goats, sheep, and cattle are the most clinically affected domestic species, although cats and other animals can also develop infections.
Transmission to humans is most commonly through aerosol spread of the bacterium from placental and birthing fluids, and can either be from fresh or desiccated sources. It can also be spread from feces or urine, particularly if dry and aerosolized. *Coxiella* can also be present in nonpasteurized milk.

B. PPE requirement for prevention of *C burnetti* infection (Q fever):

Protection from *Coxiella* infection should include the use of personal protective equipment (PPE), including a fitted N95 mask or higher rated mask, gloves, eye protection, protective clothing including lab coat to cover arms, and disinfectant foot baths when working with periparturient does and ewes from the time of birth up to 3 weeks postpartum, as well as when working with newborn kids or lambs for the first 24 hours after birth.
*If serology is performed (ELISA at CAHFS) and is negative, the ewe/doe can be cleared from *Coxiella* PPE requirement.

Human disease: The incubation period of acute Q fever is usually 2-3 weeks after exposure. While many people are asymptomatically infected and require no treatment, a smaller proportion of humans do develop symptomatic disease. This can include persistent high fever (up to 104-105° F), headaches, chills, night sweats, muscle pain, nausea, vomiting and

diarrhea, fatigue, cough, and chest or abdominal pain. Pneumonia and hepatitis can also occur in severe cases.

C. Biosecurity:

Periparturient animals should be kept on "periparturient precautions"

1. Periparturient small ruminants (ewes/does) until 3 weeks postpartum:
   IDC protocol with signage that includes "Periparturient Precautions" for three weeks postpartum or until negative serology or negative PCR results on placental tissue for *Coxiella burnetii* is obtained.

   Personal Protective Equipment (PPE) Protocol includes N95 mask, face shield or eye safety goggles, long sleeve lab coats, rubber boots or plastic booties, gloves and disinfection foot baths (Accel 8 oz. per gall)

2. Abortions/Still births/Premature births:
   Does and ewes with still births, premature deliveries, or abortions should be housed in C barn Isolation with signage that includes "Q fever suspect", until testing can be completed (serology on dam or PCR on placental tissues). A contact list should be posted at the stall to record potential humans in contact with these animals. Once the ewe or doe tests negative for Coxiella burnetii serology (ELISA at CAHFS), the special Coxiella protocols may be discontinued.

   Aborted fetuses or still born kids or lambs and placentas should be incinerated after submission to Pathology with "zoonotic disease" risk highlighted on the Necropsy form. Pathology should be called ahead to be notified. These should be taken to Pathology in leak proof containers or double bagged and labeled accordingly.

   PPE Protocol includes N95 mask, face shield or eye safety goggles, long sleeve lab coats, rubber boots or plastic booties, gloves and disinfection foot baths (Accel 8 oz. per gall)

Reporting: CDC should be notified by VMTH Safety Officer of any animals testing positive for *Coxiella burnetii* immediately.

PPE for personnel working with periparturient ewes/does during delivery and for 3 weeks after, including with the lambs/kids (for at least 24 hours if orphaned, for 3 weeks if with dam), and when handling placentas or birth products should include the following. These same precautions must be used when cleaning stall and when working with animals while hospitalized.

D. PPE and Protocols for dealing with suspect or positive Q fever cases:

1. Wear a properly fitted respirator mask (N95 or higher rated)
2. Wear gloves
3. Wear eye protective gear (safety goggles or face shield)
4. Wear long sleeve protective clothing (lab coat or Tyvek over scrubs or coveralls)
5. Wear rubber boots
6. Wash hands and arms as soon as possible after handling animals or birthing fluids/placenta.
6. Change your clothes and shower as soon as possible after working with parturient animals (dystocia, cesarean section, still birth, abortion, or normal delivery) or handling potentially infectious materials.
7. Wash clothes in hot water and dry separately.
8. Do not eat or drink in the animal areas.9. Avoid using high pressure hoses for cleaning birthing/c section areas or stalls where animals are housed, to avoid aerosolization of dust and bacteria.
10. Disinfect rooms or stalls with 8 oz./gallon Accel and use similar disinfectant in the foot bath. Additional disinfection can include bleach, peroxide, or 1:100 Lysol.
11. Feces from Q fever suspect animals (or confirmed positive) should be steamed as for any isolation animal.

***Coccidioides immitis* (Coccidioidomycosis, Valley fever, Desert fever) and *Blastomyces dermatitidis* (Blastomycosis)**

Coccidiodes immitis is a fungal infection that exists in two phases. The saprophytic phase is a mold that exists in the soil. The mold produces hardy spores (arthroconidia), which can exist in the environment for an extended period of time. The parasitic phase (tissue) occurs when animals or humans accidentally inhale spores from the environment. Percutaneous inoculation is also possible. These spores transform into spherules which replicate within tissues and form endospores. The endospores infect the local tissue or disseminate throughout the body and form new spherules.

The fungus is capable of infecting humans, domestic animals, wild desert rodents and other animals. Dogs, horses, ruminants, pigs and others can be affected. Primary infections are common in highly endemic arid and semiarid areas of Western Hemisphere (California to South Texas, northern Argentina, Paraguay, Colombia, Venezuela, Mexico and Central America); dusty fomites from endemic areas can transmit infection elsewhere; affects all ages, both sexes and all

races; most frequent in summer after wind and dust storms. In contrast blastomycosis is most commonly seen along the Mississippi, Ohio and Missouri river valleys, and prefers wet soils. It is uncommonly seen in California and will not be discussed in detail here.

Inhalation of infective arthroconidia from soil is the usual mode of transmission. The parasitic spherules, which are the form found in domestic animals presenting to the hospital, are not usually infective, but accidental inoculation of infected pus or other materials under the skin can result in granuloma formation. Coccidioidomycosis is not directly transmitted from person to person or from animal to person, although transmission from necropsies or from infected material allowed to sporulate may be infectious. The parasitic form on dressings, bandages, or casts and in clinical specimens may however change to the infective form after 4-5 days of incubation.

Prevention

Coccidiodes is susceptible to several disinfectants, including 1% sodium hypochlorite, phenolics, glutaraldehyde, quaternary ammonium compounds, and formaldehyde; its susceptibility to 70% ethanol is questionable. Because of the low risk of transmission of the tissue form of the organism, patients may be housed in the regular wards or ICU. Skin wounds should not be bandaged, or bandages should be changed daily if bandaging is unavoidable. A laboratory coat or disposable gown and gloves should be worn while handling the patient. A mask (N95 respirator) should be worn during invasive procedures such as exploratory thoracotomy or during necropsy, even though the likelihood of acquiring infection is low, and during stall cleaning when aerosolization of discharges may possibly occur. All immediate surfaces should be wiped with 10% bleach or AHP (e.g. Rescue or Accel) solution after treating an animal. Surgical instruments should be cold sterilized with 10% bleach or AHP (e.g. Rescue or Accel) solution for ten minutes and then processed according to standard protocol. Saturate bandage material or cast material with 10% bleach or AHP (e.g. Rescue or Accel) solution before discarding into biohazard waste container.

Brucella spp. **(Brucellosis)**

Brucellosis is a disease of domestic (ruminants, horses, pigs, dogs) and wild animals that may be transmitted to humans. There are several species including *Brucella abortus,* which causes abortion and sterility in sheep, *Brucella canis*, which causes reproductive tract disease and diskospondylitis in dogs, and *Brucella suis,* which infects pigs. *Brucella canis* is the least common cause of human disease, and most cases have been laboratory-acquired infections. *B. canis* and *B. abortus* seem to be the least virulent for humans.

Brucellae are small Gram-negative bacteria. They are shed in large numbers in milk, urine, and aborted material. Routes of transmission to humans include direct contact with infected animals or their secretions through cuts/abrasions in the skin, by infected aerosols through the mucous membranes, or by ingestion of unpasteurized milk. Human-to-human transmission is rare. Immunocompromised state does not seem to change the course of disease in humans.

Symptoms of brucellosis are nonspecific and include fever, sweats, decreased appetite, headache and back pain. Some patients have mildly enlarged lymph nodes and splenomegaly may also occur. Any organ of the body may be involved. Patients must be treated with combination antibiotic therapy (generally a tetracycline and streptomycin) for prolonged periods, and relapse may occur within 3 to 6 months of discontinuing therapy. Chronic brucellosis can occur, with persistence of foci of infection in the bones, kidneys, liver, spleen and/or joints. Brucellosis can result in human infertility and abortions, although the rate of abortion may be similar to that with other bacteremic infections.

Diagnosis is made on the basis of isolation of the organism from the blood or infected tissues, or suggestive signs together with high or rising titers of specific antibodies.

Infected dogs should be treated immediately, but long-term therapy may be required. The environment should be cleaned with appropriate disinfectants. The organism is susceptible to most disinfectants. *Brucella* is susceptible to bleach, 70% ethanol, iodine, glutaraldehyde and formaldehyde.
PPE: Avoid direct contact with body fluids or tissues. Use of gloves, protective barrier clothing and eyewear are recommended when working with suspect or positive cases.
*Safety needles should be used

Abortions in general

Animals (mares, cows, ewes, does, camelids, sows) with abortion should be housed under IDC protocol due to contagious or zoonotic nature of some of etiologies (e.g. leptospirosis, brucellosis, equine herpes-1, Q fever). Testing for these agents to be decided upon with clinician and IDC officer.

No Food Policy in Barns/Animal Facilities of VMTH:

Eating is forbidden in animal areas and areas that contain drugs or biohazards, including B and C barn animal areas and treatment rooms. Students are allowed to eat in the VMTH break room or outside of the barns on the provided picnic tables. Residents, faculty, and staff may eat in the VMTH break room (or NICU break room for staff), on the picnic tables, or in their offices. Food meant for human consumption should not be stored in the barn refrigerators nor heated in the barn microwaves. There is a refrigerator and microwave in the VMTH break room.
This includes all food, including individual lunches as well as snacks such as cookies or cakes. In addition, surgical attire (masks, caps, surgical scrubs) and any soiled clothing and foot wear should be removed prior to leaving the VMTH, including to Scrubs or other public food areas.

CDFA – List of Reportable Conditions for Animals and Animal Products

January 2015

CALIFORNIA DEPARTMENT OF FOOD & AGRICULTURE
ANIMAL HEALTH BRANCH

LIST OF REPORTABLE CONDITIONS FOR ANIMALS AND ANIMAL PRODUCTS*

*Pursuant to Section 9101 of the California Food and Agricultural Code, Title 3 California Code of Regulations § 797 and Title 9 Code of Federal Regulations Section 161.4(f)

WHO MUST REPORT: Any licensed veterinarian, any person operating a diagnostic laboratory, or any person who has been informed, recognizes or should recognize by virtue of education, experience, or occupation, that any animal or animal product is or may be affected by, or has been exposed to, or may be transmitting or carrying any of the following conditions, must report that information.

WHAT TO REPORT: ***Immediately report any animal disease not known to exist in the United States, any event with increased mortality and/or morbidity of unknown cause or source and any toxicology condition likely to contaminate animals or animal products (meat, milk or eggs). Report any emergency condition or regulatory condition. All monitored diseases should be reported by diagnostic facilities.***

CALL IF YOU SEE: Vesicles, Unusual or Unexplained Illness, CNS Signs, Mucosal Diseases, Hemorrhagic Septicemias, Larvae in Wounds, Uncommon Ticks, High Morbidity or Mortality

EMERGENCY CONDITIONS
Report within 24 Hours of Discovery

MULTIPLE SPECIES
- Anthrax (*Bacillus anthracis*)[1]
- Crimean Congo Haemorrhagic Fever[1]
- Foot-and-Mouth Disease
- Glanders (Farcy) (*Burkholderia mallei*)
- Heartwater (*Ehrlichia ruminantium*)
- Rabies of livestock[1]
- Screwworm Myiasis (*Cochliomyia hominivorax* or *Chrysomya bezziana*)
- Surra (*Trypanosoma evansi*)
- Vesicular Stomatitis
- Livestock exposed to toxic substances
- Unexplained mortality or diseased animals

BOVINE
- African Trypanosomiasis (Tsetse fly diseases)
- Bovine Babesiosis (Cattle Tick Fever)
- Bovine Spongiform Encephalopathy
- Contagious Bovine Pleuropneumonia (*Mycoplasma mycoides mycoides* small colony)
- Foot-and-Mouth Disease
- Heartwater (*Ehrlichia ruminantium*)
- Hemorrhagic Septicemia (*Pasteurella multocida B/Asian or E/African*)
- Lumpy Skin Disease
- Malignant Catarrhal Fever (African type)
- Rift Valley Fever
- Rinderpest
- Schmallenberg Virus
- Theileriosis (*Theilera parva parva* or *T. annulata*)

CAPRINE/OVINE
- Contagious Agalactia *(Mycoplasma agalactiae)*
- Contagious Caprine Pleuropneumonia *(Mycoplasma capricolum capripneumoniae)*
- Foot-and-Mouth Disease
- Heartwater (*Ehrlichia ruminantium*)
- Nairobi Sheep Disease
- Peste des Petits Ruminants (Goat Plague)
- Rift Valley Fever
- Schmallenberg Virus
- Sheep and Goat Pox

PORCINE
- African Swine Fever
- Classical Swine Fever
- Foot-and-Mouth Disease
- Japanese Encephalitis
- Nipah Virus
- Swine Vesicular Disease
- Vesicular Exanthema of Swine Virus (VESV)

AVIAN SPECIES
- Avian Influenza (H5 or H7)
- Exotic Newcastle Disease
- Turkey Rhinotracheitis (Avian Metapneumovirus)

EQUINE
- African Horse Sickness
- Dourine (*Trypanosoma equiperdum*)
- Glanders (Farcy) (*Burkholderia mallei*)
- Hendra Virus (Equine morbillivirus)
- Japanese Encephalitis
- Surra (*Trypanosoma evansi*)
- Venezuelan Equine Encephalomyelitis
- Vesicular Stomatitis

CERVIDS/LAGOMORPHS/CAMELIDS
- Viral Hemorrhagic Disease of Rabbits (Calicivirus)

REGULATORY CONDITIONS
Report within Two Days of Discovery

MULTIPLE SPECIES
- Brucellosis (*B. melitensis, B. abortus, B. suis*)[1]
- *Mycobacterium bovis*[1]
- Pseudorabies (Aujeszky's Disease)
- Tularemia[1]

BOVINE
- Bovine Brucellosis (*Brucella abortus*)[1]
- Bovine Tuberculosis (*Mycobacterium bovis*)[1]
- Epizootic Hemorrhagic Disease (EHD)
- Trichomonosis (*Tritrichomonas fetus*)

CAPRINE/OVINE
- Caprine and Ovine Brucellosis[1] (excluding *Brucella ovis*)
- Scrapie
- Sheep Scabies (Body Mange) (*Psoroptes ovis*)

PORCINE
- Porcine Brucellosis (*Brucella suis*)[1]
- Pseudorabies (Aujeszky's Disease)
- Swine Enteric Coronavirus Diseases

AVIAN SPECIES
- Ornithosis (Psittacosis or avian chlamydiosis) (*Chlamydophila psittaci*)
- Pullorum Disease (Fowl Typhoid) (*Salmonella gallinarum* and *S. pullorum*)

EQUINE
- Contagious Equine Metritis (*Taylorella equigenitalis*)
- Eastern Equine Encephalomyelitis
- Equine Herpesvirus Myeloencephalopathy (EHM)
- Equine Infectious Anemia
- Epizootic Lymphangitis
- Equine Piroplasmosis (*Babesia caballi* or *Theileria equi*)
- Western Equine Encephalomyelitis
- West Nile Virus

CERVIDS/LAGOMORPHS/CAMELIDS
- Brucellosis in Cervids[1]
- Chronic Wasting Disease in Cervids
- Hemorrhagic Diseases of Deer (Bluetongue, Adenovirus, and Epizootic Hemorrhagic disease)
- Tuberculosis in Cervids[1]

WHERE TO REPORT:

CA Department of Food and Agriculture
Animal Health Branch (AHB)
District Offices:

Redding	**530-225-2140**
Modesto	**209-491-9350**
Tulare	**559-685-3500**
Ontario	**909-947-4462**

CDFA- Animal Health Branch
Mailing Address: 1220 N Street
Sacramento, CA 95814
Physical Address: 2800 Gateway Oaks
Sacramento, CA 95833
Telephone 916-900-5002
OR
US Department of Agriculture
Animal and Plant Health Inspection Services
Veterinary Services (VS)
10365 Old Placerville Road, Suite 210
Sacramento, CA 95827-2518
Toll free at 1-877-741-3690

MONITORED CONDITIONS
Report Monthly (Diagnostic Facilities)

MULTIPLE SPECIES
- Avian Tuberculosis of livestock (*Mycobacterium avium*)
- Echinococcosis/Hydatidosis (*Echinococcus* species)
- Johne's Disease (Paratuberculosis) (*Mycobacterium avium paratuberculosis*)
- Leishmaniosis
- Leptospirosis

BOVINE
- Anaplasmosis (*Anaplasma marginale* or *A. centrale*)
- Bluetongue
- Bovine Genital Campylobacteriosis (*Campylobacter fetus venerealis*)
- Bovine Viral Diarrhea
- Enzootic Bovine Leukosis (Bovine leukemia virus)
- Infectious Bovine Rhinotracheitis (Bovine herpesvirus-1)
- Johne's Disease (Paratuberculosis) (*Mycobacterium avium paratuberculosis*)
- Malignant Catarrhal Fever (North American)
- Q Fever (*Coxiella burnetii*)
- Taeniasis (*Taenia saginata*)

CAPRINE/OVINE
- Bluetongue
- *Brucella ovis* (Ovine epididymitis)
- Caprine Arthritis/Encephalitis
- Enzootic abortion of ewes (Ovine chlamydiosis) (*Chlamydophila abortus*)
- Johne's Disease (Paratuberculosis) (*Mycobacterium avium paratuberculosis*)
- Maedi-Visna (Ovine progressive pneumonia)
- Q Fever (*Coxiella burnetii*)
- *Salmonella abortusovis*

PORCINE
- Porcine Cysticercosis (*Taenia solium*)
- Porcine Reproductive and Respiratory Syndrome
- Seneca Valley Virus
- Transmissible Gastroenteritis (Coronavirus)
- Trichinellosis (*Trichinella spiralis*)

AVIAN SPECIES
- Avian Infectious Bronchitis
- Avian Infectious Laryngotracheitis
- Duck Viral Hepatitis
- Infectious Bursal Disease (Gumboro Disease)
- Mycoplasmosis (*Mycoplasma synoviae* and *Mycoplasma gallisepticum*)

EQUINE
- Equine Influenza
- Equine Rhinopneumonitis (excluding EHM)
- Equine Viral Arteritis

CERVIDS/LAGOMORPHS/CAMELIDS
- Camelpox in camels
- Myxomatosis in rabbits

FISH, AMPHIBIAN, CRUSTACEAN, BEE, AND MOLLUSK
- **The list is compatible with the OIE list.** http://www.oie.int/en/animal-health-in-the-world/oie-listed-diseases-2015/

[1] Diseases in green, seen in any species, are also reportable to California Department of Public Health

SOP: Accel®/Rescue™

1.0 Purpose:

The purpose of this standard operating procedure (SOP) is to explain the proper procedures for preparation and use of Accel®/Rescue™ disinfectant/detergent in the Large Animal Clinic.

2.0 Chemical Description and Hazards:

- Description - Accelerated Hydrogen Peroxide (AHP)
- One step cleaner and disinfectant
- Appearance - clear, colorless; characteristic in odor
- Moderately irritating to eyes and skin. Harmful if swallowed. Do not get in eyes, on skin or on clothing. Inhalation hazard: none known.
- Shelf life: Undiluted = 24 months ; Diluted =90 days. (*in sealed container)
- Decomposition releases oxygen which may intensify fire.

Not compatible with strong oxidizing and reducing agents (i.e. sodium hypochlorite/bleach).

3.0 Handling/PPE:

Concentrate:

- Tight fitting protective eye wear (chemical splash goggles)
- Latex or Nitrile gloves
- Avoid contact with skin – wear long sleeve lab coat
- Wash skin thoroughly with soap and water after handling
- Remove contaminated clothing and wash clothing before reuse

Diluted product:

- Gloves and protective glasses/goggles are not required per MSDS but **GLOVES and PROTECTIVE glasses/goggles are ALWAYS REQUIRED** per Large Animal Clinic protocol when using Accel®/Rescue™ whenever spray or splash is a potential. Gloves are always to be worn. Remember that the concentrate is placed in foam spray dispensers and the concentrate is strong with a pH of 1.
- If product gets in eyes, flush with plenty of water to alleviate irritation

4.0 Dilution:

When kennel foamers are put into use, they must first be set with the appropriate metering tip determined using the pressure measured at the hose with high pressure switch "on" and final measured concentration of test solution (determined by use of Accel®/Rescue™ Indicator strips).

Please use high pressure when delivering the solution.

Accel®/Rescue™ will be routinely used at a concentration of 3 oz./gallon of water (50% higher than the labeled sanitation concentration) for floors, stalls, equipment and foot baths clinic wide except for those circumstances and areas listed below.

THE BLUE HOSE END SPRAYERS AND BLUE TOP KENNEL FOAMERS ARE to be PRESET for 3 oz./gallon (1000ppm)

Accel®/Rescue™ will be used at the labeled bactericidal concentration of 8 oz. / gallon of water (final ratio of 1:16 or 64 ml/liter of water) for disinfecting of facility, stalls, floors, equipment, and foot baths for:

Equine Isolation
Livestock Isolation
Pathogen positive cases:
- Salmonella
- Coronavirus
- Rotavirus
- Cryptosporidium
- Other pathogens / areas as directed by bio security officer

THE RED HOSE END SPRAYERS AND RED TOP KENNEL FOAMERS ARE to be PRE SET for 8 oz. / gallon. (3000ppm)

Please do not move them to other hoses, as they have been installed based on pressure at specific hoses.

Footbaths:

Change footbaths once daily in am in Equine Isolation and Livestock Medicine.

Change footbaths Monday, Wednesday and Friday elsewhere throughout Large Animal Clinic.

Change footbaths in any location if >5% by volume organic matter is present

5.0 Use:

Remove all animals/feed from areas being treated with Accel®/Rescue™.

Remove all bedding and waste

Pre clean soiled surfaces by scrubbing with soap or detergent and rinse thoroughly with water.

Dilute using above specifications and methods.

Using proper handling techniques:

Apply solution with a kennel foamer, scrub brush, mop, cloth, sponge, hand pump trigger sprayer or dispensing bottle to wet all surfaces thoroughly.

Contact time required: 10 minutes

Air dry or wipe surfaces if needed soon after the 10 minute contact time.

Not necessary to rinse off stall wall surfaces/stocks or livestock chutes.

DO RINSE as follows:

a. After 10 minutes contact time, rinse buckets and grooming equipment.
b. Make sure that water bowls and buckets have been rinsed very thoroughly, prior to placing animal in stall, as the animals may not drink when the residue has been left in the waterer or bucket.
c. After 10 minutes contact time, rinse aisles and floors of treatment rooms to reduce slip hazard. Rinse stall floors if placing patient in stall without bedding.

Do not house animals or re-employ equipment until solution has dried.

Equipment:

Buckets, lead ropes, halters and non-metal instruments (that do not require sterile processing) should be cleaned with Accel to remove organic debris, rinsed with water, allowed to soak for 10 minutes in Accel (3oz/gallon for equipment used throughout clinic or 8 oz./gal/on for equipment used in Equine Isolation, Livestock Isolation or suspected or confirmed infectious patients) then rinsed and allowed to dry.

Dose syringes, stomach pumps and metal instruments should be soaked in Nolvasan (3oz/gallon of water) for 10 minutes, then rinsed thoroughly and left to air dry. [Accel®/Rescue™ could be used on these items, but damage to the metal will occur if left in Accel®/Rescue™ longer than 10 minutes, so to avoid this problem, VMTH protocol is to NOT use Accel®/Rescue™ for these items.]

Grooming equipment, lead ropes, halters should be cleaned, soaked for 10 minutes (as above), rinsed with water and allowed to dry.

Wear OB sleeves when reaching into the solution container.

Containers may be prepared with diluted Accel®/Rescue™ (dilution as listed above) and used repeatedly to submerge equipment for soaking contact time. Solution should be tested daily with Accel®/Rescue™ Indicator strips. When concentration drops below 1000ppm (for 3oz/gallon solution) or below 3000ppm (for 8oz/gallon solution), empty the container and refill with fresh solution.

6.0 First Aid:

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. [Remove contact lenses (if present) after 5 minutes then continue rinsing eye for 15 minutes]. Obtain medical attention immediately.

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Obtain medical attention if irritation persists.

If swallowed: If able to swallow, have person sip a glass of water. Do not induce vomiting. Never give anything by mouth if victim is unconscious, or is convulsing. Obtain medical attention immediately.

If inhaled: Not a normal route of exposure. If symptoms develop: move victim to fresh air. If symptoms persist, obtain medical attention.

7.0 Leak & Spill procedures:

Follow Safety Net #13 - Guidelines for Chemical Spill Control
Diluted Accel®/Rescue™ can be washed down drain.
For spills involving the Accel®/Rescue™ concentrate, refer to the hazard data in SDS and wear appropriate PPE before attempting clean up. Large Spills, > 5 gallons, may be absorbed with non-reactive absorbent and placed in suitable, covered, labeled containers.
Prevent large spills from entering sewers or waterways. Contact Safety Services (530) 752-1493.