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Biosecurity SOP

JOINT FACULTY OF VETERINARY MEDICINE
KAGOSHIMA UNIVERSITY

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CHAPTER 1. GENERAL BIOSECURITY SOP

GENERAL BIOSECURITY STANDARD OPERATING PROCEDURES (SOP) APPLICABLE IN ALL OF THE FVM

The international definition of biosecurity in the domain of related animal health is quite broad:

"Biosecurity is the implementation of measures that reduce the risk of introduction (bioexclusion) and spread of disease agents (biocontainment); it requires the adoption of a set of attitudes and behaviors by people to reduce risk in all activities involving domestic, captive exotic and wild birds and their products" (World Organisation for Animal Health, 2008).

FVM Philosophy Regarding Infection Prevention and Control: Biosecurity, infection prevention and control, and biosafety are essential at all healthcare and research facilities, including veterinary hospitals. Good infection prevention and control practices are not the only features of veterinarians defining excellence in veterinary care. Logical infection control procedures are also necessary for excellent animal patient care. Procedures used at the FVM are intended to reduce the risk of all nosocomial and zoonotic illnesses. Biosecurity and Infection prevention and control procedures used at the FVM are specifically tailored to address contagious disease threats encountered in this unique environment.

Goals for the FVM Biosecurity Program

- Protect hospital personnel, students, and clients from exposure to zoonotic disease agents.
- Create an environment where animal patient care can be optimized by minimizing the risk of nosocomial infection.
- Optimize educational experiences for students regarding biosecurity and infection control by demonstrating appropriate infection prevention and control, and disease surveillance practices.
- Provide outreach to clients and other public members regarding the control and prevention of infectious and parasitic diseases in animals and humans.
- Ensure operational capabilities at the FVM.

Infection Prevention and Control Principles: The following principles have guided the development of all procedures described in this document: These precautions help prevent disease transmission from staff to animal patient, animal patient to animal patient, animal patient to staff, and staff to staff.

- ***Optimize hygiene:*** Hygiene will be optimized by implementing standard precautions (hand washing, proper attire, barrier protection, minimizing unnecessary contact with animal patients, appropriate disposal of infectious materials, cleaning, and disinfection).
- ***Break transmission cycles:*** 1) effective use of hygiene protocols, 2) understanding routes of disease transmission, 3) creating barriers for direct and indirect transmission of infectious agents for animal patients with differing risks for contagious disease transmission. It includes consideration of traffic patterns and housing of animal patients, as well as traffic patterns of personnel, students, and guests within the FVM.

- ***Improve infection prevention and control procedures:*** Surveillance and other investigative procedures will improve infection prevention and control procedures.
- ***Enhance education and awareness:*** Disseminating the purpose of this SOP and the guidelines shall enhance education and awareness regarding nosocomial and zoonotic disease risks.

1.1. DEFINITIONS

Antiseptic: A chemical that can be applied to body surfaces those destructs microorganisms or inhibits their growth or multiplication without hurting animals.

Barrier Nursing Precautions: Measures to prevent cross-contamination of the body, clothing, and footwear, and reduce the risk of nosocomial transmission to other animal patients using materials and practices as a barrier between animal patients and personnel. Barrier nursing precautions are used in all isolation areas (class 4) and for animal patients with special needs [animals considered to have an increased risk of shedding contagious agents (class 3), young or naive animals, immunocompromised animal patients, etc.]. NOTE: Care must be used with barrier garments to prevent contamination of materials and hand contact surfaces.

Table I. Parameters Used in Defining Clinical Status

Species	Fever (rectal temperature)	Leukopenia (cells x 10^3/mL)	Neutropenia (cells x 10^3/mL)
Bovine	>39.0 (adult) >39.5 (calf)	<5.0	<0.6
Canine	>39.5	<6.0	<3.0
Caprine	>40.5	<4.0	<1.2
Equine	>38.5	<4.0	<2.5
Feline	>39.5	<5.0	<2.0
NW Camelid	>39.5	<7.5	<4.6
Ovine	>40.0	<4.0	<0.7

Contagious disease: A disease capable of being transmitted from one animal to another.

Disinfectant: A chemical agent that kills or prevents the growth of microorganisms on inanimate objects (surgical equipment, floors, tables, animal patient care equipment)

Disinfection: A process used to reduce the number of microorganisms to a level that is not harmful to health.

Hospital Dedicated Attire: Clothing, footwear, and outer garments worn only when working at the FVM or while on field service duty.

Multiple Drug-Resistant Bacteria: Bacteria that have developed the ability to survive several antibiotics. Antimicrobial drug resistance occurs when bacteria reduce or eliminate the effectiveness of drugs, chemicals, or other agents designed to cure or prevent infections. Often the antibiotics that can still kill these bacteria may be toxic to the animal and their number is limited.

Examples of multiple drug-resistant bacteria include some strains of *Salmonella enterica*, Methicillin Resistant *Staphylococcus aureus,* and Vancomycin Resistant Enterococci.

Nosocomial Infection: A localized or systemic condition that results from an adverse reaction to the presence of an infectious agent or toxin that was not present or incubating at the time of admission.

Personal Protective Equipment: Barriers that a person can put on himself or herself to protect them against acquiring or transmitting a microorganism or disease, or to prevent exposure to potentially noxious chemicals (such as some disinfectants). Examples: gloves, gowns, masks, goggles (protective eyewear), boots, caps, etc.

Hand Sanitizer: A chemical that reduces the number of microorganisms to a "safe" level, without eliminating all microbes.

Sterilization: The removal of all microorganisms including bacterial spores from an inanimate object.

Subclinical infection: A disease caused by the invasion of the body by microorganisms that do not present signs and symptoms. Subclinical infection may be an early stage or very mild form of contagion in which signs and symptoms are not apparent or detectable by clinical examination or laboratory tests.

Personnel: Refers to all people working in the FVM environment in any capacity, regardless of whether they are employees, students, visiting veterinarians or scientists, visiting students, or volunteers.

Zoonosis: All infectious diseases, including plagues, and transmissions that cause natural propagation between vertebrate animals and humans.

1.1.1. CLASSIFICATION OF RISK CATEGORIES

Each department has a list of the specific diseases categorized by their risk depending on the animals.

Infectious diseases encountered in hospitalized animals are assigned to the following classification levels, based on transmissibility of the agent to other animals and/or zoonotic potential.

Table II. Classification of risk categories

CLASS 1: NORMAL HOUSING and HOSPITALIZATION Infectious diseases caused by agents that are not infectious to other animals and have no potential for transmission to humans.
CLASS 2: NORMAL HOUSING and HOSPITALIZATION Infectious diseases caused by low transmissible agents, including non-resistant bacterial infections.
CLASS 3: BARRIER NURSING PRECAUTIONS Subclass A: Infectious diseases caused by bacteria with highly resistant antimicrobial susceptibility patterns, resistant bacteria, as determined by the external bacteriology laboratory. Subclass B: Infectious diseases caused by agents with a moderate level of transmission and/or potential human pathogens.
CLASS 4: ISOLATION Infectious diseases caused by agents that are considered highly transmissible and/or severe human pathogens.

1.2. GENERAL RULES

1.2.1. HAND WASHING

Hand washing is the most important measure for reducing the risks of transmitting organisms.

- ***Hands should be washed:***

- Before and after handling each animal patient
- After touching blood, body fluids, secretions, excretions, and contaminated items, whether or not gloves are worn.
- Immediately after gloves are removed.
- Before each different procedure on the same animal patient to prevent cross-contamination of different body sites
- After handling laboratory specimens or cultures
- After cleaning cages or stalls
- Before meals, breaks, smoking, or leaving work for the day.
- Before and after using the restroom

- ***Recommended technique for hand washing:***
  - Wet hands and forearms with warm water.
  - Add at least 3-5ml (1-2full pumps) of soap to the palm.
  - Lather up and scrub each side of the hands beyond the wrist for 10-30 seconds, clean between fingers, under rings, and fingernails.
  - Rinse under warm water until all soap residue is removed.
  - Dry hands with a paper towel or a warm air dryer.
  - If it is not possible to wash your hands immediately, wet wipes with alcohol or hand sanitizers can be used until you have access to warm water and soap.

- ***The Recommended method for using a hand sanitizer:***
  - Apply a thumbnail-sized amount of hand sanitizer to the palm.
  - Work sanitizer into the fingertips of the opposite hand, then onto the rest of the hand.
  - Repeat with the opposite hand.
  - Rub until dry and do not rinse.

FVM personnel and students who handle patients and biological samples should keep their fingernails short and minimize accessories to clean their hands and lessen contamination.

1.2.2. BARRIER NURSING PRECAUTION

Barrier nursing precautions should be appropriate for the procedures being performed and the type of exposure anticipated. These guidelines apply to working with infected tissues or body fluids, treating living animals in cages or stalls, cleaning cages or stalls (that were) occupied by animals with infectious diseases, or handling the carcasses of an animal that has died of a potential infectious or zoonotic disease.

- Wear personal protective equipment (lab coat, smock, apron, or coveralls) when handling animal patients known or suspected to be infected with infectious or zoonotic diseases (class 3 or 4).
- Gloves, surgical masks, and protective eyewear should be worn for procedures that commonly result in the generation of droplets, splashing of blood or other body fluids, or the generation of bone chips.
- If a glove is torn or a needle stick or other injury occurs, the glove should be removed and replaced with a new glove as soon as animal patient safety permits.
- Washable boots, shoes, or shoe covers enhance the ability to prevent the spreading of infectious material throughout the hospital.
- Additional protection in the form of face shields or respirators may be necessary depending on the circumstances and disease.

1.2.3. STANDARD ATTIRE

- The FVM maintains a dress code to promote professionalism and to assist with biosecurity efforts (for details see various hospital sections). This Biosecurity SOP discusses attire only from the perspective of Biosecurity and prevention and infection control.
- Dedicating attire specifically for use in the FVM is the first defense against taking animal and human pathogens into your home environment.
- All personnel and students working with animal patients or environments around them are encouraged to wear hospital-dedicated attire (clothing, footwear, and outer garments worn only when working at the FVM or while on field service duty) and not worn elsewhere.
- It is required for all personnel and students to wear footwear and protective outer garments when working with animal patients or the environments around them that are appropriate to the job at hand. For example, coveralls and heavy boots or shoes are the most suitable footwear and protective outer garments when working with large animal patients.
- All personnel and students working with animal patients or the environment around them are encouraged to wear closed-toe footwear that is safe, protective, clean, and clean washable. Footwear that becomes soiled or contaminated must be cleaned and disinfected and should not be made of a porous or absorbent material. Footwear normally suitable for companion animal hospitals may not be suitable for large animal hospitals for safety reasons. Staff and students working in the companion animal hospitalization area are required to wear closed-toe shoes.
- All personnel and students working with animal patients or the environment around them and with long hair are encouraged to have their hair bonded. At least one extra set of clean protective outer garments should be available.
- Students should always wear clean laundered protective outer garments during each rotation.
- Personnel and students who work in both the small and large animal hospitals must have attire available that is appropriate for different areas of the hospital.
- Specific requirements regarding attire to be worn in various hospital sections are listed under the corresponding hospital service.

1.2.4. ANIMAL PATIENT CARE

1.2.4.1. ANIMAL PATIENT HYGIENE

- It is of major importance for basic hygiene and for reducing the infection pressure that the animal patients of the FVM are housed in a proper stall or cage that is kept as clean as possible.
- Water and feeding buckets or bowls need to be cleaned and regularly changed.
- Suppose animal patients defecate outside their stall or cage (whether inside or outside a building). In that case, their feces should be removed, and the floor surface cleaned (and in companion animals dried), immediately after defecation. If animal patients urinate inside (but not outside a building), the urine needs to be removed, and the floor cleaned and dried.
- Also, the environment around the cage or stall should be clean, tidy, and neat. This means no medications or materials lying around, and no bedding outside the stable or cage. All members of staff and students are expected to arrange material once used and to leave the location in its original condition.
- Specific requirements regarding animal patient hygiene in various hospital sections are listed under the corresponding hospital service.

1.2.4.2. MINIMIZE UNNECESSARY CONTACT WITH ANIMAL PATIENTS

- Accomplishing the animal patient care and teaching mission of the FVM ~~obviously~~ requires intensive contact with multiple animal patients through routine activities. However, it is important to remember that this contact is accompanied by the potential for transmission of infectious and or zoonotic agents.
- All personnel and students should minimize contact with animal patients whenever reasonable to minimize the risk of nosocomial exposure for these animal patients, especially if not directly responsible for their care.
- Veterinarians may at their discretion allow and encourage students to contact animals for teaching purposes. If, for teaching, students are asked to perform examinations or assist with procedures on multiple animal patients, their hands must be washed between animal patients, and stethoscopes and other equipment must be regularly wiped with alcohol or hand sanitizer.
- Personnel and students that contact animal patients known or suspected of being infected with contagious pathogens must be limited to only those essential for appropriate animal patient management.
- When appropriate, animal patients should be monitored by observation without physical contact, if possible, with the use of cameras.
- To decrease the potential for inadvertent trafficking of infectious agents, personnel and students should also minimize, when possible, movements into areas used by different services. For example, when possible, medicine personnel and students should minimize visiting the surgery department, personnel and students assigned to the large animal facilities should avoid visiting the companion animal department, etc.
- Personnel and students should avoid entering stalls/cages except when necessary and should avoid touching or caressing animals when passing, if not necessary or called for.
- When possible, personnel and students should work in areas with a higher likelihood of being contaminated last (after working on animal patients in other areas).

1.2.5. FOOD AND BEVERAGE

- Food or beverages should not be consumed or stored where animals are examined, treated, or housed.
- Personnel and students are also prohibited from eating, drinking, or storing food in areas where biological specimens are handled, or medications are compounded or stored. This includes record rooms, hallways, surgery laboratories, exam rooms, or reception areas.
- It is permissible for food and beverages to be consumed and stored in:
  - The kitchens in the FVM
  - Technicians' and veterinarians' offices
  - Outside of the clinical departments
- Because eating and drinking are allowed in these areas, animals, biological specimens, and medications are never allowed there.
- Do not store food and beverages in a refrigerator for medication or biological specimens.
- Microwaves used in animal care areas (treatment areas for large animals or companion animals, etc.) are not to heat food intended for people.

1.2.6. MEDICATIONS

1.2.6.1. STORAGE AND ACCESS

- Medication should be stored in a clean environment in a way appropriate to the medication (see label: temperature, in the dark, etc.), and should not be subjected to important temperature changes and/or humidity.
- Medication should be arranged in an orderly fashion (e.g. alphabetically/by class).
- Opened medication percipients should be stored in a separate room or place from closed-stocked percipients.
- The storage room for medication should not be accessible to people not affiliated with the department, nor ~~to~~ children nor ~~to~~ animals (hospitalized or other animals, including vermin).
- Poisonous drugs and deleterious drugs should be stored in a designated lock shelf, and only veterinarians should have access by key. A logbook should be filled out after each use.
- Anesthetics should be stored in a designated box, and only registered anesthesiology users should use it. A logbook should be filled after each use.

1.2.6.2. EXPIRY DATE

- Medication, including fluids, should be ~~clearly~~ marked with a water-resistant marker with the date of opening or breaking of the sterility seal.
- When more than the specified period has passed (or sooner according to the label), or the medication has expired, the medication should be discarded.

1.2.6.3. PREPARATION OF MEDICATION

- Preparation of medication should be performed by or under the direct supervision of technicians or veterinarians. During preparation, contamination by other medications or dirt should be prevented. The rubber on bottles with

parenteral medication should be wiped with alcohol each time before piercing it with a needle. Every medication should be prepared with a new and sterile syringe and needle. Needles and syringes for administration of medication should never be reused, not for other animal patients, not for the same animal patient (exception: oral medication syringes can be reused after thorough rinsing and cleaning).

- After preparation, a new and sterile needle will be applied for injections.
- Preparation of toxic or dangerous drugs should be performed under secure circumstances and not in the presence of unsecured persons. Depending on the drug this means wearing gloves, protective glasses, and a mask with adequate exhaust ventilation.
- Immediately after preparation and use, the drugs should be recorded in the medication management book of the FVM.
- Some medications (e.g. Sodium penicillin, ampicillin) should not be prepared in advance because they only remain stable for a very short time once diluted.
- The name of the drug should be stated clearly with a water-resistant marker on each syringe that is not administered immediately after preparation.

1.2.6.4. RETURN OF MEDICATIONS

- Discontinued or unneeded medications that cannot be returned to the medication room must be disposed of in the designated dustbins properly by the test reagent and drug management policies.

1.2.7. GENERAL CONSIDERATIONS FOR CLEANING

- Dispose of sharps in special containers before returning laundry, equipment, or instruments.
- Do not put hangers, trash, hay or bedding, sharps, or animal body parts with bagged dirty laundry.
- Remove all animal tissue samples or body parts before returning surgical instruments or equipment.
- Buckets, pumps, and tubing need to be cleaned, or rinsed. Any traces of oil must be removed.
- Laundry will not wash any client-owned items. They are often lost or damaged.
- Laundry will not wash any personal items. This includes blankets, student scrubs, or student smocks.

1.2.8. DISPOSAL OF WASTE PRODUCTS (companion animals and large animals)

- Files on waste management are provided in the hospital.
- Precautions should be taken to prevent injuries caused by needles, scalpels, and other sharp objects. To prevent needle injuries, personnel and students should avoid recapping needles, purposely bending or breaking needles, or removing needles from disposable syringes. Sharps should be placed in a puncture-resistant container for disposal.
- Waste should be discarded in the area where it was generated according to the regulations. For specific waste products, please see under various hospital sections.
- General hospital waste from animals without any suspicion of involvement of a zoonotic or highly infectious agent ought to be discarded in designated waste bags.
- Hospital waste from animals with a suspicion of involvement of a zoonotic or highly infectious agent ought to be discarded in designated waste containers.

- All waste generated in the isolation facility needs to be discarded in designated waste containers.
- Biological samples collected from animal patients with contagious disease risk should be sealed in impermeable plastic bags and labeled with the appropriate information before submission to diagnostic laboratories. Care should be taken to avoid contaminating the outside of plastic bags.
- Bandaging of wounds known to be infected with infectious agents of concern [e.g., MRSA or other multiple drug resistant (MDR) bacteria] should be conducted in low-traffic areas that can be easily cleaned and disinfected. Barrier precautions should be used to prevent contamination of hands and attire, and care should be taken to avoid environmental dissemination through drainage of flush solutions or careless handling of bandage materials.
- Biological samples or parts of dead animals (skins, legs, bones, etc.) are not allowed to leave the hospital other than for medical purposes or destruction.

1.3. BASIC CLEANING AND DISINFECTION

- Personnel and students using disinfectants in FVM are expected to be familiar with this basic cleaning and disinfection section to understand the activity of and potential interactions among the various disinfectants used in the FVM.
- Organic material rapidly deactivates most disinfectants. The likelihood that organic material will be present on surfaces should be considered when choosing a disinfectant.
- Disinfectants vary greatly in their spectrum of activity. In general, protozoa such as Cryptosporidium, bacterial spores, mycobacterium, and non-enveloped viruses are very resistant to ethanol series disinfectants.
- Ensuring maximal decontamination requires that disinfectant solutions be applied at appropriate dilutions with an adequate contact time (often at least 10-15 min).
- Although most disinfectants are used for their short-term decontamination activity, some disinfectants maintain residual disinfectant activity when left on surfaces for longer periods.
- It is critical to rinse and remove all residues from the previous disinfectant.

1.3.1. PROPER CLEANING

Proper Order:

- Appropriate attire should be worn whenever using disinfectants. Additional personal protective equipment (mask, face shields, goggles, impervious clothing, and boots) should be worn when there is a probability of splashes resulting in more merely incidental contact.
- Remove all visible debris before disinfection. The presence of gross contamination will inactivate most disinfectants. If running water with a hose is used to de-bulk material, care must be taken to minimize aerosolization and further spread of potentially infectious agents.
- Wash the affected areas with water and detergent or soap; scrubbing or mechanical removal is always needed to break down residues and films that prevent or inhibit the disinfection process.
- Thoroughly rinse the cleaned area to remove any detergent residue as some disinfectants may be inactivated by detergents; therefore, it is very important to rinse well after washing the area.
- Allow the area to drain off the water or dirty as much as possible to prevent dilution of disinfectant solutions.

- Wet the area thoroughly with disinfectants. Disinfectants should ideally remain in contact with surfaces for 15 minutes, particularly if an infectious agent is suspected.
- Remove excess disinfectant with water, clean paper towels, mop, or squeegee.
- The disinfectant should be rinsed off all surfaces or allowed to dry for enough time (follow the recommended procedure of the instructions) before housing an animal patient in a cage or stall.
- All multiple-use areas (examination rooms, examination tables, etc.) where animals are examined or treated, should be cleaned and disinfected immediately following use by personnel and students responsible for the animal patient, irrespective of the infectious disease status of the individual animal.
- Prevent contact of blood or body fluid with any non-intact skin or mucous membrane when conducting these procedures.
- After disinfecting, remove the protective attire and wash your hands.
- For special non-routine disinfection measures (e.g. disinfectant misting), only personnel trained and approved to wear and use the required personal protective equipment will be allowed access to areas being disinfected.

1.3.2. DISINFECTANTS

- A variety of disinfectants are used at the FVM to decrease the likelihood of transmission of infectious agents. Several factors have been considered when choosing disinfectants for a particular use in the FVM. See also Table III for a summary of detergents and disinfectants approved for use in the FVM.
- Disinfectants vary in their toxic and irritation potential for people and animals. In general alcohol, povidone iodine, and chlorhexidine solutions are used when contact with skin or other tissues is likely or required. Other cleaning and disinfecting agents such as bleach (hypochlorite), phenols, and quaternary ammonium compounds are only applied to equipment or facility surfaces.
- Disinfectants can only reliably be expected to be effective when applied to clean, non-porous surfaces. Some materials such as unsealed wood and dirt essentially cannot be disinfected or decontaminated through routine procedures. In addition, non-porous surfaces will not be reliably decontaminated if disinfectants are applied in the presence of dirt, oil, biofilms, and biological materials.

1.3.3. FOOTBATHS AND FOOT MATS

- Infectious agents are frequently recovered from floor surfaces in the environment around infected animals.
- Footbaths or foot mats solutions are changed every morning by students, technicians, staff, or veterinarians.
- Footbaths or foot mats should be changed whenever they are judged to contain excessive amounts of bedding or dirt.
- Foot mats or footbaths should be refilled by anyone who notices they are dry or low on volume; this is the responsibility of ALL people working in this area (students, staff, or faculty).
- Personnel and students are required to use footbaths or foot mats appropriately whenever they are encountered.
- Foot mats do not require full immersion of feet, as the mat is designed to place solutions on the soles and sides of the soles of shoes. However, splash contact with the tops and sides of shoes occurs commonly, and impervious footwear is strongly recommended for personnel and students working in areas where foot mats are used.

1.3.4. DISINFECTION PROTOCOL FOR INSTRUMENTS AND EQUIPMENT

- All equipment must be appropriately cleaned and decontaminated before returning to its storage space to minimize the risk of transmission of contagious disease agents. Equipment used specifically in small or large animal hospital areas will be discussed under their respective hospital areas. See also Table III for a summary of detergents and disinfectants approved for use in the FVM.
- **Thermometers**:
  - Glass thermometers are not to be used in the FVM to prevent risks associated with broken thermometers and mercury exposures.
  - Electronic thermometers are used instead. Electronic thermometers should be thoroughly disinfected daily using alcohol and/or chlorhexidine wipes. Plastic thermometer cases should be regularly soaked in a disinfectant solution.
  - Probes from thermometers used in continuous temperature monitoring (e.g. anesthesia) should be thoroughly disinfected by each animal patient by wiping and washing to remove gross fecal material and soaking in alcohol and/or chlorhexidine solutions.
  - Individual thermometers are assigned for use with each high-risk contagious animal patient (class 3 and 4) and cleaned and disinfected after discharge.
  - Immediate cleaning and disinfection are required when thermometers are visibly soiled or after examination of an animal patient.
- **Endoscopes:**
  - Endoscopes should be cleaned with designated detergent and disinfected with a disinfection device after every use.
- **Stethoscopes:**
  - It is recommended that stethoscopes be cleaned regularly with detergent and water and disinfected with hand sanitizer.
  - Individual stethoscopes are assigned for use with each high-risk contagious animal patient (class 3 and 4) and cleaned and disinfected after discharge.
  - Immediate cleaning and disinfection are required when stethoscopes are visibly soiled or after examination of an animal patient with a suspected infectious disease (class 3 and 4).

1.3.5. SUMMARY OF MAIN DETERGENTS AND DISINFECTANTS APPROVED FOR USE IN THE FVM

- Detergents and disinfectants approved for use at the FVM are selected from approved lists (according to the field activity) by the government.
- Several lists are interesting for the FVM:
  - use in veterinary hygiene
  - use in contact with foods
  - use in Public Health

Table III. Main detergents and disinfectants used in veterinary medicine

Disinfectants and their Dilutions	Activity in Organic Material	Spectrum of Activity	Comments
Chlorhexidine 0.05%-0.5% Used for disinfection of items that contact skin or mucosal surfaces (e.g., muzzles, endotracheal tubes, etc.) Dilutions: 60ml of 2% solution per approx.4L of water Soak barrels: Approx.4L of 2% solution per approx.156L of water = 0.05% solution Contact time: at least 15 minutes. 90ml of 2% solution per approx.4L of water is used in equine anesthesia for soak barrels.	Rapidly Reduced	· Mycoplasmas: V. Effective · Mycobacteria: Variable · Gm+ Bacteria: V. Effective · Gm– Bacteria: V. Effective · Pseudomonas: Ltd. Activity · Rickettsiae: Ltd. Activity · Chlamydiaceae: Effective · Env. Viruses: Ltd. Activity · Non-Env. Viruses: No Activity · Fungal Spores: Ltd. Activity · Bacterial Spores: No Activity · Cryptosporidia: No Activity · Prions: No Activity	· Broad antibacterial spectrum but limited in effectiveness against viruses. · Used to disinfect materials that animal patients close~~ly~~ contact with (muzzles, endotracheal tubes, etc.) · Easily inactivated by soaps and detergents. · Low toxicity potential; Typical dilutions are non-irritating even when contacting mucosa. Inactivated by anionic detergents. · Bactericidal activity on skin is more rapid than many other compounds, including iodophors. · Residual effect on skin diminishes re-growth. · Only function at limited pH (5-7). · Toxic to fish, should not be discharged into the environment.
Povidone Iodine Used for skin decontamination and disinfection (e.g. surgical preparation)	Rapidly Reduced	· Mycoplasmas: V. Effective · Mycobacteria: Ltd. Activity · Gm+ Bacteria: Effective · Gm– Bacteria: Effective · Pseudomonas: Effective · Rickettsiae: Effective · Chlamydiaceae: Effective: · Env. Viruses: Effective · Non-Env. Viruses: Ltd. Activity	· Broad spectrum. · Very low toxicity potential; appropriately diluted solutions are suitable for use on tissues or on materials that contact skin or mucous membranes. People can become sensitized to skin contact.

		· Fungal Spores: Effective · Bacterial Spores: Effective · Cryptosporidia: No Activity · Prions: No Activity	· Dilution of iodophors increases free iodine concentration and antimicrobial activity. · Staining of tissues and plastics can occur. · Stable in storage. · Inactivated by organic debris and qac's. · Requires frequent application. Corrosive.
Alcohol (90% isopropanol or 70% denatured ethanol) Used to disinfect materials that personnel, students, and animal patients closely contact (e.g. muzzles, instruments, hand sanitizing solutions, etc.)	Reduced	· Mycoplasmas: V. Effective · Mycobacteria: Effective · Gm+ Bacteria: V. Effective · Gm– Bacteria: V. Effective · Pseudomonas: Effective · Rickettsiae: Effective · Chlamydiaceae: Ltd. Activity · Env. Viruses: Effective · Non-Env. Viruses: No Activity · Fungal Spores: Ltd. Activity · Bacterial Spores: No Activity · Cryptosporidia: No Activity · Prions: No Activity	· Broad spectrum. · Very low toxicity potential · Appropriately diluted solutions are suitable for use on tissues or on materials that contact skin or mucous membranes. · No residual activity on surfaces. · Fast acting · Leaves no residue. · Rapid evaporation. · Extremely flammable.
Sodium Hypochlorite (Bleach)* Used for disinfection of clean surfaces, especially to augment the spectrum of activity of disinfectant. Dilutions: · 1:64 = 60ml of solution per approx.4L of water (appropriate for most applications in FVM)	Rapidly Reduced	· Mycoplasmas: V. Effective · Mycobacteria: Effective · Gm+ Bacteria: Effective · Gm– Bacteria: Effective · Pseudomonas: Effective · Rickettsiae: Effective · Chlamydiaceae: Effective · Env. Viruses: Effective · Non-Env. Viruses: Effective at higher concentrations · Fungal Spores: Effective · Bacterial Spores: Effective · Cryptosporidia: No Activity	· Broad spectrum. · Relatively low toxicity potential with standard dilutions, although higher concentrations or prolonged contact can result in irritation to mucous membranes or skin. · Can be used in the presence of anionic detergents; not affected by water hardness. · Inexpensive · Bacteriocidal activity is reduced with increasing pH, lower temperatures, and in the presence

· 1:32 dilution = 125ml of solution per approx.4L of water · 1:10 dilution = 400ml of solution per approx.4Lof water (limited use, very strong)		· Prions: No Activity	of ammonia and nitrogen, which is important to consider when urine is present. Also inactivated by cationic soaps/detergents, sunlight, and some metals. · Chlorine gas can be produced when mixed with other chemicals. Strong oxidizing (bleaching) activity that can damage the fabric and is corrosive on metals such as silver, and aluminum (not stainless steel). · Limited stability for stored solutions.
Quaternary Ammonium Compounds Primary surface disinfectant used at the FVM (area disinfection as well as general environmental disinfection) Dilution: 15ml of solution per approx.4L of water =1:256 Contact time: at least 15 minutes	Moderate	· Mycoplasmas: Effective · Mycobacteria: Variable · Gm+ Bacteria: V. Effective · Gm– Bacteria: Effective · Pseudomonas: No Activity · Rickettsiae: Effective · Chlamydiaceae: Effective · Env. Viruses: Effective · Non-Env. Viruses: Ltd. Activity · Fungal Spores: Ltd. Activity · Bacterial Spores: No Activity · Cryptosporidia: No Activity · Prions: No Activity	· Broad spectrum. · Irritation and toxicity are variable among products, but these compounds are generally non-irritating and have low toxicity at typical dilutions. · Inactivated by anionic detergents. · Some residual activity after drying. · More effective at alkaline pH. · Less effective in cold temperatures. · Stable in storage. · Inactivated by hard water. · Inactivated by soap or detergents
Oxidizing Agents Hydrogen Peroxide. Hydrogen peroxide is used in all disinfectant footbaths and for disinfectant misting	Variable in class, very good for peroxy mono-sulfate and accelerated	· Mycoplasmas: V. Effective · Mycobacteria: Effective · Gm+ Bacteria: Effective · Gm– Bacteria: Effective · Pseudomonas: Effective · Rickettsiae: Effective	· Broad spectrum. · Products listed have very low toxic potential but can cause skin irritation through drying, especially as powder or in concentrated solutions.

(fogging) in ~~the~~ large animal facilities. Dilution: 40ml powder per approx.4L of water (10 grams per liter of water) is a 1% solution. Spray bottle: 5g powder added to 500 ml water (1% solution) Contact time: At least 15 minutes	hydrogen peroxide.	· Chlamydiaceae: Effective · Env. Viruses: Effective · Non-Env. Viruses: Ltd. Activity · Fungal Spores: Ltd. Activity · Bacterial Spores: Effective · Cryptosporidia: Ltd. Activity · Prions: No Activity	· Other compounds not used in FVM can be very toxic (e.g. chlorine dioxide) · No harmful decomposition products. · Residual activity on surfaces. · Solutions lose activity within a few days after mixing. · Poor lipid solubility. · Less active at low temperatures. · Corrosive to plain steel, iron, copper, brass, bronze, ~~and~~ vinyl, and rubber. · Add powder to water to aid in mixing. · Wear a mask and rubber gloves when preparing the solution to avoid irritation.
Phenols Used only for disinfection of instruments and necropsy areas that may be contaminated with prions (e.g., Chronic Wasting Disease, scrapie)	Very Good	· Mycoplasmas: V. Effective · Mycobacteria: Variable · Gm+ Bacteria: V. Effective · Gm– Bacteria: V. Effective · Pseudomonas: V. Effective · Rickettsiae: Effective · Chlamydiaceae: Ltd Activity · Env. Viruses: Effective · Non-Env. Viruses: Ltd. Activity · Fungal Spores: Effective · Bacterial Spores: No Activity · Cryptosporidia: No Activity · Prions: Ltd Activity, variable among compounds	· Broad spectrum. · Irritation potential is variable among compounds in this class, but phenolic disinfectant products are generally considered highly irritating and should not be used on surfaces that contact skin or mucosa. · Concentrations over 2% are highly toxic to animals, especially cats. · Activity not affected by water hardness. · Some residual activity after drying. · Effective over a broad pH range. · Non-corrosive. · Stable in storage

Table IV. The Antimicrobial Spectrum of Disinfectants

	Chemical Disinfectants (Note: Removal of organic material must always precede the use of any disinfectant)									
	Acids (hydrochloric acid, acetic acid, citric acid)	**Alcohols** (ethyl alcohol, isopropyl alcohol)	**Aldehydes** (formaldehyde, paraformaldehyde, glutaraldehyde	**Allcalis** (sodium or ammonium hydroxide, sodium carbonate	**Biguanides** (chlorhexidine)	**Halogens**		**Oxidizing Agents** (hydrogen peroxide, peroxyacetic acid	**Phenolic compounds**	**Quaternary Ammonium compounds**
						hypochlo	**iodine**			
Mycoplasmas	+	++	++	++	++	++	++	++	++	+
Gram-positive bacteria	+	++	++	+	++	+	+	+	++	++
Gram-negative bacteria	+	++	++	+	++	+	+	+	++	+
Pseudomonads	+	++	++	+	±	+	+	+	++	-
Rickettsiae	+	++	++	+	+	+	+	+	++	+
Enveloped viruses	+	+	++	+	±	+	+	+	±a	±
Chlamydiae	±	±	+	+	±	+	+	+	±	-
Non-enveloped viruses	-	-	+	±	-	+	±	±	-	-
Fungal spores	±	±	+	+	±	+	+	±	+	±
Picornaviruses (i.e. RMD)	+	N	+	+	N	N	N	+	N	N
Parvoviruses	N	N	+	N	N	+	N	N	N	-
Acid-fast bacteria	-	+	+	+	-	+	+	±	±	-
Bacterial spores	±	-	+	±	-	+	+	+b	-	-
Cryptosporidia	-	-	-	+c	-	-	-	-	+d	-
Prions	-	-	-	-	-	-	-	-	-	-

Table V. Characteristics of selected disinfectants

Disinfectant category	Alcohols	Aldehydes	Biguanides	Halogens: Hypochlorite	Halogen-Iodine Compounds	Oxidizing agents	Phenols	Quaternary Ammonium compounds (QAC)
Mechanism of action	-Precipitates proteins -Denatures lipids	-Denatures proteins -Alkylates nucleic acids	-Alters membrane permeability	-Denatures proteins	-Denatures proteins	-Denatures proteins and lipids	-Denatures proteins -Alters cell wall permeability	-Denatures proteins -Binds phospholipids of cell membrane
Advantages	-Fast acting -Leaves no residues	-Broad spectrum	-Broad spectrum	-Broad spectrum -Short contact time -Inexpensive	-Stable in storage -Relatively safe	-Broad spectrum	-Good efficacy with organic material -Non-corrosive -Stable in storage	-Stable in storage -Non-irritating to skin -Effective at high temperatures and high pH (9-10)
Disadvantages	-Highly volatile -Flammable	-Carcinogenic -Mucous membranes and tissue irritation -Only use in well-ventilated areas	-Only functions in a limited pH range (5-7) -Toxic to fish (environmental concern)	-Inactivated by sunlight -Requires frequent application -Corrodes metals	-Inactivated by QACs -Requires frequent application -Corrosive	-Damaging to some metals	-Can cause skin and eye irritation	

				-Mucous membrane and tissue irritation	-Stains clothes and treated surfaces			
Precautions	Flammable	Carcinogenic		Never mix with acidds; toxic chlorine gas will be released.			May be toxic to animals, especially cats and pigs	
Vegetative bacteria	Effective	Effective	Effective	Effective	Effective	Effective	Effective	
Mycobacteria	Effective	Effective	Variable	Effective		Effective	Variable	Variable
Enveloped viruses	Effective	Effective	Limited	Effective	Effective	Effective	Effective	Variable
Non-enveloped viruses	Variable	Effective	Limited	Effective	Limited	Effective	Variable	Not effective
Spores	Not effective	Effective	Not effective	Variable	Limited	Variable	Not effective	Not effective
Fungi	Effective	Effective	Limited	Effective	Effective	Variable	Variable	Variable
Efficacy with organic matter	Reduced	Reduced	?			Variable	Effective	Inactivated
Efficacy with hard water	?	Reduced	?	Effective	?	?	Effective	Inactivated
Efficacy with soap/detergents	?	Reduced	Inactivated	Inactivated	Effective	?	Effective	Inactivated

BLOCKING TRANSMISSION CYCLES

1.3.6. GENERAL BEHAVIOUR

- Prohibitions on smoking on the University premises must be respected.
- Dogs should walk on a leash at the site of the FVM.
- Members of University staff are encouraged not to take their pets to the FVM unless for medical reasons.

1.3.7. VISITORS IN THE FVM

- Educating the public about the role veterinarians have in society is an important function of the FVM, and allowing visitors to have some access to the FVM supports this mission. However, there are unique safety and health issues associated with exposure to the FVM environment, and visitors are a potential mechanism for spreading infectious agents in the hospital environment.
- Visitors must be directly supervised while visiting the FVM. Physical contact with animal patients that are not owned by those specific visitors is not allowed. Tours for the public are coordinated through the FVM office and are led by trained personnel.
- Visitors are never allowed to enter any isolation department.
- FVM personnel supervising visitors should inform them about zoonotic and nosocomial disease hazards that are associated with hospitalized animals.
- Visiting lay people should not be allowed to enter anesthesia preparation areas, emergency rooms, and surgery theatres.
  - As for visiting scientists or veterinarians to enter the mentioned areas, the Hospital Director or the full-time teaching staff of the hospital should be contacted, and then all relevant people will be notified.
  - Visitors are not allowed to gather in the care areas.
  - No food or beverages are allowed to be consumed by the visitors, nor are they allowed to smoke.
  - Visitors will not bring along any other animals (e.g., cats and dogs).

1.3.8. CLIENTS IN THE FVM

- Clients are allowed unescorted access to waiting rooms and adjacent restrooms in the hospital. Clients must be escorted to other areas of the hospital by FVM personnel and students.
- Biosecurity personnel may restrict access to animal patient care areas whenever it is deemed appropriate to minimize risks of zoonotic or nosocomial infections. In addition, veterinarians may, at their discretion, exclude clients from animal patient care areas whenever there are concerns about safety or disruption of the work environment.
- At the veterinarian's discretion, clients may be left unattended with their animals in examination rooms, however, this is prohibited in treatment areas, and animal patient housing areas. In addition, clients must always be asked to refrain from touching any other animals.
- Clients are not allowed to visit animal patients that are housed in isolation. Permission will only be considered exceptionally in the case of euthanasia or agony (the same high level of biosecurity measures is applied).
- Clients must always adhere to policies regarding the use of barrier nursing precautions relevant to their animal health and housing conditions.

- Visiting hours are restricted to specific periods determined by hospital departments unless expressly permitted by veterinarians.
- FVM personnel and students responsible for animal patient care are required to educate clients about zoonotic and nosocomial disease hazards that are inherently and necessarily associated with the hospitalization of animals.

1.3.9. CHILDREN IN THE FVM

- There are unique safety and health risks associated with the FVM environment. The consequences of a child becoming ill or injured through exposure to the FVM environment are unacceptable from all perspectives.
- Biosecurity personnel may restrict access to animal patient care areas whenever it is deemed appropriate to minimize risks of zoonotic infections. In addition, veterinarians may, at their discretion, exclude children (minors< 18 years old) from animal patient care areas whenever there are concerns about safety or disruption of the work environment.
- Children (minors <18 years old) are not permitted to remain in the hospital when the parent is working as a member of the FVM personnel (including students) unless supervised by an adult.
- Children visiting the FVM must be always supervised by an adult directly while in the FVM.
- All visitors must be restricted from touching any animals except their own. This is especially important for children because of the risk of zoonotic disease and the risk of physical injury.

1.3.10. PETS IN THE FVM

- There are serious health and safety risks related to the presence of non-patient animals in the FVM. Following FVM policy, animals are not permitted to be in clinical facilities except for medical purposes.
- Animals are only permitted in the FVM if they are animal patients admitted to the hospital if they are scheduled for blood donation at the FVM, if they are subjects enrolled in an approved research project, or if they are being used in approved teaching exercises but contact between sick and healthy animals should be avoided and they should be placed in different units.
- Personnel and students must adhere to all FVM policies when handling and managing animals in the hospital.
- Pets are not allowed to enter offices or classrooms unless they are being used in classroom activities.

1.3.11. INFECTION ROUTES

- Many disease agents can survive for extended periods in the air, on surfaces, and in organic material.
- Pathogenic disease agents can be spread from animal to animal, animal to human, or even human to animal, through inhalation, oral consumption, contact with nasal or ocular mucosa surfaces, and direct contact with fomites or vectors.
- Awareness of these routes of disease transmission can help mitigate their potential effects.

1.3.11.1. AEROSOL TRANSMISSION

- Aerosol transmission occurs when infectious agents contained in aerosol droplets are passed to susceptible species. Most pathogenic agents do not survive for extended periods within the aerosol droplets and as a result, proximity of

infected and susceptible animals is required for disease transmission. The greater the distance between animals, the less likely transmission will occur.

- Aerosol transmission may occur in a veterinary hospital through close contact with animals and/or humans. Infectious agents may be freshly aerosolized (as in a sneezing cat with feline respiratory virus), re-aerosolized by high-pressure washing of cages or stalls, or on dust particles by air currents (e.g., *Coxiella Brunetti*). Temperature, relative humidity, and ventilation play important in aerosol transmission of pathogens.

1.3.11.2. ORAL TRANSMISSION

- Oral transmission involves exposure to infectious agents by the gastrointestinal tract. It will also occur when aerosolized material is inhaled carelessly and swallowed through the nasopharynx.
- Contaminated environmental objects include equipment such as food and water dishes, and any other items an animal could lick or chew. Feed and water contaminated with feces or urine are frequently the cause of oral transmission of disease agents.
- In humans, contaminated hand-to-mouth contact is commonly part of the transmission cycle. This means that staff and students who work around animals should keep their hands clean. Appropriate handling and segregation of animal patients with diarrhea will help control the spread of potentially infective organisms in feces as will proper cleaning and disinfecting of food and water dishes.

1.3.11.3. DIRECT AND INDIRECT CONTACT TRANSMISSION

- Direct contact transmission requires an animal or person to directly contact another infected animal or person.
- Indirect contact transmission occurs through contact with surfaces or materials that have been contaminated with a variety of substances (e.g., blood, discharge from wounds, saliva, nasal secretions or aerosolized respiratory droplets, genitourinary secretions, fecal material, etc.).
- It is important to remember that animal patients in the hospital have a high likelihood of being infected with contagious pathogens, and therefore surfaces throughout the facility have a high likelihood of being contaminated with infectious agents. As such, the most important method of reducing the potential for direct and indirect contact transmission is the segregation of infected animals and minimizing contact with them.
- Since not all infected animals will show symptoms, various measures should be taken to prevent those animals from coming into direct contact with other patients in the hospital (both in/outpatients).

1.3.11.4. FOMITE TRANSMISSION

- Fomites are objects that serve as intermediates in contact transmission cycles. Virtually any object can serve as a fomite, even a person acting as a caregiver. All items: for example, a doorknob, keyboard, telephone, clothing, thermometer, stethoscope, hose, leash, brush, shovel, etc., can be contaminated with infectious agents and serve as an exposure source involved in contagious disease transmission.
- An important aspect of fomite transmission is that portable items can be contaminated near one animal patient and then be a source of transmission for animal patients or personnel and students in other areas of the hospital. The most

important means of controlling transmission by fomites is through proper cleaning and disinfection, use of barrier nursing precautions, separation of equipment, as well as the appropriate recognition and segregation of diseased animals.

- Whenever possible, clinically ill animals should be handled and treated only after all healthy animals have been handled or cared for.

1.3.11.5. VECTOR TRANSMISSION OF ANIMALS

- Vector transmission of animals occurs when an insect or arthropod acquires a pathogen from one animal and transmits it to another. Heartworm and West Nile vims are examples of diseases transmitted by vectors.
- Fleas, ticks, flies, and mosquitoes are common biological vectors of animal disease.
- The most effective means to prevent transmission of vector-borne is the elimination or reduction of the vector, or at a minimum, separation of the vector from the host.

1.3.11.6. ZOONOTIC INFECTIONS

- While the risk of contracting a zoonotic disease among the general population is, on average, low, veterinarians and other people who routinely contact animals have an increased risk of exposure to zoonotic disease agents.
- In case of exposure to suspect or confirmed cases of zoonotic diseases, all known clients, referring veterinarians, students, and staff contacts should be recorded and reported to the ad hoc Biosecurity Working Group.
- The Director of the ad hoc Biosecurity Working Group and the veterinarian in charge of the case will then work together to ensure that all potentially exposed individuals are contacted, as well as the necessary local and state health officials (when applicable).
- Any individual with known or suspected infections associated with work at the FVM is strongly encouraged to seek medical attention immediately after reporting the event to a supervisor.
- Also, any known or suspected exposure to zoonotic agents should be reported to the ad hoc Biosecurity Working Group and the Hospital Director by the veterinarian with primary responsibility for the animal patient.
- The Hospital Director can provide you or your physician with the names of healthcare providers who are specifically knowledgeable concerning the zoonosis and occupational exposures of veterinary personnel and students.
- All personnel and students with concerns or questions regarding exposure to zoonotic agents are strongly encouraged to contact their healthcare provider. Friends or family members of FVM personnel or students, who might have an increased risk of serious consequences of zoonotic infection, are encouraged to discuss potential risks with the FVM supervisor, section chief, biosecurity personnel, or their ~~own~~ health care provider.

1.3.12. SPECIAL INFECTIOUS DISEASE RISKS

- Personnel, clients, and students whose immune system is compromised are at greater risk from exposure to zoonotic diseases. Immune status is affected by many conditions and those at increased risk may include: children under the age of 5, pregnant women, and the elderly.

- While the most profound immune suppression is caused by HIV/AIDS, other diseases and conditions that can compromise or alter immune function include pregnancy, organ failure, diabetes, alcoholism and liver cirrhosis, malnutrition, or autoimmune disease.
- Certain treatments can also be associated with immune suppression, including radiation therapy, chemotherapy, chronic corticosteroid therapy, ~~or~~ immunosuppressive therapy associated with bone marrow or organ transplants, implanted medical devices, splenectomy, or long-term hemodialysis.
- It is important to note that some of these conditions or diseases may have a social stigma, making it difficult for a person to share their personal health information.
- All personnel, including students, are required to inform supervisors and hospital directors about any special health concerns (e.g., pregnancy, immunosuppression, etc.) that might impact the risk or consequences of infection with zoonotic agents before handling any animal patients.
- All discussions will be kept confidential; however, communication among staff about the situation may be necessary for the implementation of appropriate precautions and/or alteration of normal clinical or teaching procedures in the hospital.

1.4. RISK COMMUNICATION

FVM Risk Communication Regarding Contagious Disease Status of Animal Patients:

- Efficient communication regarding the risk of spreading contagious disease is essential, given the complexity of animal patient care at FVM and the number of individuals working in this environment. Effective, proactive communication regarding the real and potential infectious status of animal patient diseases and the likelihood of potential nosocomial or zoonotic disease spread. For biosecurity concerns at the FVM, risk communication involves 1) appropriate notification and education about risks related to infectious disease for all individuals who may come in contact with animal patients with infectious diseases, including zoonotic disease concerns, 2) appropriate precautions necessary to limit spread to personnel, students or other animal patients, and 3) appropriate precautions to disinfect areas or materials that may become contaminated.
- All FVM animal patients should be evaluated by veterinarians to identify contagious disease risks. It is the responsibility of the veterinarian to appropriately assess the risk of contagious disease transmission and to institute appropriate infectious disease control efforts consistent with biosecurity SOP.
- Biosecurity personnel must be notified about all important infectious disease hazards (known or suspected). This includes but is not limited to, diseases with the potential to cause zoonotic disease, highly contagious diseases, highly pathogenic diseases, bacteria with resistance to multiple drug resistance or important resistance patterns (e.g. MRSA or VRE), disease agents that are highly persistent or difficult to disinfect using routine hygiene practices, or diseases of regulatory concern. This notification should be performed by the veterinarian with primary responsibility for the case and should occur at the first reasonable opportunity. This notification can be made in person or using e-mail.
- All significant contagious disease risks must be appropriately communicated to FVM personnel, students, and clients to effectively manage the threat of infection in people and animals that might have contact with a particular animal patient.

- Be aware that the infectious disease status of an animal patient may change during hospitalization, and the risk communication materials must be updated.

1.4.1. BIOSECURITY E-MAIL LIST

- The FVM uses electronic mail lists to facilitate communication regarding infectious disease hazards in the hospital.
- Purpose: To provide communication and improve awareness regarding animal patients with increased risks for contagious and/or zoonotic disease at the FVM.
- People Sending Emails: Open to anyone, required when animal patients are admitted to isolation.
- People Receiving Emails: All staff of the FVM

1.4.2. SMALL ANIMAL HOSPITAL, EQUINE MEDICAL CENTER AND LARGE ANIMAL VETERINARY CLINICAL TRAINING CENTER

- Cages or stalls (as well as the relevant surrounding environment) of animal patients with contagious diseases and animal patients must be clearly labeled with the infectious disease hazards associated with animal patients. At a minimum, this signage should contain the following information:
  - Classification of the disease following the risk classification system (see Table II)
  - Disinfection procedures appropriate for controlling the agent in question.
  - Barrier nursing and hygiene requirements applicable
  - Whether there is any zoonotic health risk
  - Name of the known or suspected condition
- Barrier precautions should be visible as adequate notice of special status.
- Personnel and students responsible for animal patients with contagious diseases must ensure that special considerations and nursing needs have been appropriately communicated to others likely to be working with animal patients or their environment.
- Personnel and students responsible for animal patients with contagious diseases must ensure that information has been appropriately communicated to the mailing list of the FVM.

1.4.3. PROTOCOL FOR FRONT DESK PERSONNEL

- If a client call indicates an acute case of vomiting, diarrhea, ataxia abortion, coughing or sneezing, or another case where a contagious disease can be suspected:
  - The receptionist must inform a relevant veterinarian about the condition, and the veterinarian then will accept the appointment and confirm if there is an isolation stall or cage available (see chapter 1.4.5. for exclusion criteria for entry and/or hospitalization).
  - The presenting complaint will be indicated on the schedule as “acute diarrhea” “acute vomiting” acute coughing” or “acute sneezing", etc.
  - “Suspected contagious" will be written next to the complaint.

- The client will be asked to keep their animal outside until they have been checked in. Following the check ~~in~~ a quick clinical impression will be obtained before entering the hospital or in the emergency room by an intern or veterinarian to allocate the animal to a certain risk category (see Chapter 1.4.5. for exclusion criteria for entry and/or hospitalization). According to the risk category and circumstances, the animal can be taken directly to an exam room or isolation facility. In the case of companion animals, transport should preferably be on a gurney to decrease hospital contamination.

- If an animal patient that has signs or a history of acute, possibly contagious disease is presented directly to the reception desk, the receptionist should contact the receiving service immediately and coordinate placement of the animal in an examination/emergency room or isolation to minimize hospital contamination.
- If a contagious disease is suspected at the small animal hospital based on information before the visit (by a referral or a phone call), the interview should be conducted outside the hospital. In a case where an infection is suspected in the interview, the examination and treatment should be conducted in an isolation room.

1.4.4. PROTOCOL FOR STUDENTS

- The arrival of possible infectious disease cases will be handled as follows:
  - The presenting complaint will be written on the schedule as "acute diarrhea" "acute vomiting" "acute coughing" or "acute sneezing" etc.
  - "Suspected contagious" will be written next to the complaint.
  - The client will be asked to keep their animal outside until they have been checked in. Following the check-in, a quick clinical impression will be obtained before entering the hospital or in the emergency room by an intern or a veterinarian to allocate the animal to a certain risk category (see chapter 1.4.5 for exclusion criteria for entry and/or hospitalization).
  - According to the risk category and circumstances, the animal can be taken directly to an exam room or isolation facility. In the case of small animals, transport should preferably be on a gurney to decrease hospital contamination.
  - Every attempt should be made to reduce any direct contact with the animal patient and any other FVM animal patients.
  - To reduce risks for students and other animals, only a minimum of students determined by the veterinarian are allowed to follow the consultation/examinations of cases with possibly contagious diseases.
  - After the exam room has been vacated, areas or equipment contaminated by feces, secretions, or blood should be cleaned and disinfected immediately by the student and personnel in charge of the animal patient.
  - Appropriate signs should be placed on the door to prevent use of the room until it has been cleaned and disinfected.
  - Students are obliged to know (video instructions, course, and faculty website) and to follow procedures as determined by this biosecurity protocol when contacting cases with contagious diseases.

1.4.5. EXCLUSION CRITERIA FOR ENTRY AND/OR HOSPITALIZATION

- In case of official notifiable diseases in Japan (see section 1.5.6.) or if the risks for other hospitalized animal patients or staff to become infected with the disease are too important compared to the health risk for the animal itself, the animal can be refused to enter the hospital or to be hospitalized. The specific refusal criteria for each species are listed under the corresponding hospital service.
- Only veterinarians of FVM (not interns) are allowed to make the decision to refuse an animal.

1.5. BIOSECURITY SURVEILLANCE

- This program was established to monitor and identify the spread of infectious diseases at the FVM. Environmental and animal patient samples are cultured to detect specific microorganisms, general environmental contamination, and disease syndromes potentially associated with nosocomial infections and complications.
- In general:
  - Veterinarians should report the occurrence of known or suspected nosocomial events to the events to Biosecurity personnel as soon as possible.
  - Biosecurity personnel should also be alerted to any suspected trends in nosocomial events, even if the clinical consequences are not considered severe.
  - Biosecurity personnel should be alerted to all known or suspected zoonotic infections that are thought to have arisen through exposure to the FVM.
  - Veterinarians are encouraged to use appropriate diagnostic testing to determine the etiology of nosocomial events, even if these results may not affect the clinical outcome for that animal patient. Apparent trends cannot be investigated without appropriate surveillance data.
- Traceability of infected animals and animals in contact is of major importance for biosurveillance. In the hospital of the FVM, the electronic medical record program is being used to keep a complete databank of all incoming cases, the contact information of their owners, and referring to veterinarians and used medications.
- Veterinarians, veterinary technicians, and students are expected to handle information about cases and possible infectious or contagious diseases with confidentiality. In the future, attention should be given to the purchase of a clinical program to optimize this traceability, and to create links for all other services to a computer-based database to improve traceability.

1.5.1. REQUIRED DIAGNOSTIC TESTING IN SUSPECTED INFECTIONS

- Diagnostic testing to detect certain infectious and/or zoonotic agents provides essential information for the appropriate clinical management of infected animal patients. This testing provides direct benefit to the animal patient in addition to benefiting clients by allowing them to appropriately manage their other animals and protect their families. It also benefits the FVM as this information is essential for the appropriate management of disease risk for all FVM animal patients, personnel, and students.
- It is therefore highly suggested that all hospitalized animal patients ~~to~~ undergo diagnostic testing if infection with specific contagious or zoonotic agents is a reasonable consideration. This diagnostic testing is considered essential to

case management in the FVM and therefore if clinical suspicion exists, yet the owner is reluctant to pay for testing, the animal will be designated class 4, and the ensuing financial repercussion will be billed to the client.

- It is the responsibility of the veterinarian responsible for an animal patient's care to ensure that appropriate client communication occurs regarding infectious and/or zoonotic agents.
- It is the responsibility of the veterinarian responsible for an animal patient's care to ensure that appropriate samples are submitted for this testing, and that appropriate biosecurity precautions are taken with these animal patients.
- Biosecurity personnel should be notified by the veterinarian with primary case responsibility, as soon as possible that there is a reasonable index of suspicion that a hospitalized animal patient may be infected with one of the agents listed below. This notification can be made in person or using e-mail.

1.5.2. DISEASE DIFFERENTIALS FOR WHICH TESTING IS MANDATORY

- Testing of appropriate samples is mandatory if the following disease or condition is a reasonable differential. A full description of testing, management, diagnosis, and potential treatment information is available at the WOAH website:
  - Animal diseases data: https://www.woah.org/en/what-we-do/animal-health-and-welfare/animal-diseases/
  - Terrestrial Animal Health Code: https://www.woah.org/en/what-we-do/standards/codes-and-manuals/#ui-id-1
  - Manual of Diagnostic Tests and Vaccines for Terrestrial Animals: https://www.woah.org/en/what-we-do/standards/codes-and-manuals/#ui-id-2
  - Aquatic Animal Health Code: https://www.woah.org/en/what-we-do/standards/codes-and-manuals/#ui-id-3
  - Manual of Diagnostic Tests for Aquatic Animals: https://www.woah.org/en/what-we-do/standards/codes-and-manuals/#ui-id-4

- In the FVM, special attention should be devoted to:
  - Acute Diarrhea in Dogs and Cats (*Salmonella, Campylobacter, Parvovirus, Cryptosporidium, Giardia)*
  - Canine Distemper Virus
  - *Chlamydophila psittaci* (Avian)
  - The neurologic form of Equine Herpesvirus type 1
  - Influenza (Avian)
  - Leptospirosis
  - Rabies
  - *Streptococcus equi* subsp. *equi*
  - *Salmonella* (Large animals)

1.5.3. ENVIRONMENTAL SALMONELLA SURVEILLANCE (LARGE ANIMALS)

1.5.3.1. STALL AND CAGE CULTURES

- Stalls or cages that housed animals that were culture-positive for *Salmonella* must be cultured after routine cleaning and disinfection and before they are released for use by another animal patient.
- Technicians responsible for these stalls or cages or the veterinarians primarily responsible for animal patients should notify biosecurity personnel when these stalls or cages are vacated to arrange for samples to be obtained.
- The personnel responsible reports culture results back to the biosecurity personnel responsible as soon as results become available.
- These data are routinely summarized and reported by biosecurity personnel.

1.5.3.2. ROUTINE ENVIRONMENTAL SURVEILLANCE

- The dust collection method is used for routine environmental surveillance on smooth floors and hand-contact surfaces throughout the hospital. Sampling is scheduled every 6 months for most areas, and more frequently for areas that are more commonly contaminated with *Salmonella* (isolation every 3 months).
- Personnel responsible for the positive area report~~s~~ any positive culture results back to biosecurity personnel as soon as results become available.
- These data are routinely summarized and reported by biosecurity personnel.

1.5.4. MANAGEMENT OF ANIMAL PATIENTS INFECTED OR COLONIZED WITH RESISTANT BACTERIA

- Animal patients infected with bacteria resistant to important antimicrobial drugs or to multiple drug classes represent a potential health hazard to FVM personnel, students, clients, and ~~to~~ other animal patients. As such, they are managed with increased biosecurity precautions intended to discourage dissemination in the FVM.

1.5.5. DRUG-RESISTANT BACTERIA AND ANTIMICROBIAL DRUG USE

- Dealing with drug-resistant bacteria is one of the most important issues of the 21st century. Any aggressive program for infection control program must consider the important impact that antimicrobial resistance can have on the ability to provide quality medical care. Biosecurity personnel are charged with monitoring antimicrobial drug use at the FVM and promoting conservative use practices that help to preserve the usefulness of antimicrobial drugs. A laboratory routinely summarizes antimicrobial resistance patterns among commonly isolated bacteria and makes this report available.
- These results summarize results from specimens submitted to the diagnostic laboratory and therefore represent a biased sample of bacteria present in animal populations. As such, isolates represented by this report are likely to be more resistant than those encountered in average animal populations.

1.5.6. NOTIFIABLE ANIMAL DISEASES IN JAPAN

- It is FVM policy to investigate and rule out the potential for any reportable diseases. Contact biosecurity personnel ASAP when notifiable animal diseases are diagnosed or suspected. The primary veterinarian or biosecurity personnel should directly contact the Kagoshima prefectural public health center.

Table VI-a. Monitored infectious diseases that are specified by the Domestic Animal Infectious Diseases Control Law (Domestic Animal Infectious Diseases)

Type of infectious diseases	Species of animals
1. Rinderpest	Cattle, sheep, goat, pig, water buffalo, deer, wild boar
2. Contagious bovine pleuropneumonia	Cattle, water buffalo, deer
3. Foot-and-mouth disease	Cattle, sheep, goat, pig, water buffalo, deer, wild boar
4. Infectious encephalitis	Cattle, horse, sheep, goat, pig, water buffalo, deer, wild boar
5. Rabies	Cattle, horse, sheep, goat, pig, water buffalo, deer, wild boar
6. Vesicular stomatitis	Cattle, horse, pig, water buffalo, deer, wild boar
7. Rift Valley fever	Cattle, sheep, goat, water buffalo, Deer
8. Anthrax	Cattle, horse, sheep, goat, pig, water buffalo, deer, wild boar
9. Haemorrhagic septicaemia	Cattle, sheep, goat, pig, water buffalo, deer, wild boar
10. Brucellosis	Cattle, sheep, goat, pig, water buffalo, deer, wild boar
11. Tuberculosis	Cattle, goat, water buffalo, deer
12. Johne's disease	Cattle, sheep, goat, water buffalo, deer
13. Piroplasmosis (limited to that caused by pathogens prescribed by the Ordinance of the Ministry of Agriculture, Forestry and Fisheries; the same shall apply hereinafter)	Cattle, horse, water buffalo, deer
14. Anaplasmosis (limited to that caused by pathogens prescribed by the Ordinance of the Ministry of Agriculture, Forestry and Fisheries; the same shall apply hereinafter)	Cattle, water buffalo, deer
15. Transmissible spongiform encephalopathy	Cattle, sheep, goat, water buffalo, deer
16. Glanders	Horse
17. Equine infectious anaemia	Horse
18. African horse sickness	Horse
19. Ovine rinderpest (Pest des petits ruminants)	Sheep, goat, deer
20. Classical swine fever	Pig, wild boar

21. African swine fever	Pig, wild boar
22. Swine vesicular disease	Pig, wild boar
23. Fowl cholera	Chicken, duck, quail, turkey
24. Highly pathogenic avian influenza	Chicken, duck, quail, pheasant, ostrich, guinea fowl, turkey
25. Low pathogenic avian influenza	Chicken, duck, quail, pheasant, ostrich, guinea fowl, turkey
26. Newcastle disease (limited to that designated as highly pathogenic by Ordinance of the Ministry of Agriculture, Forestry and Fisheries; the same shall apply hereinafter) *1)	Chicken, duck, quail, turkey
27. Avian salmonellosis (limited to that caused by pathogens prescribed by the Ordinance of the Ministry of Agriculture, Forestry and Fisheries; the same shall apply hereinafter) *2)	Chicken, duck, quail, turkey
28. Foulbrood	Honeybee

*1) the criteria for virulence stipulated in the Ministerial Ordinance are the same as those in Chapter 10. 4 of the OIE Terrestrial Animal Health Code

*2) the causative agents prescribed by the Ministerial Ordinance are Salmonella Gallinarum and Salmonella Pullorum

Table VI-b. Monitored infectious diseases that are specified by the Domestic Animal Infectious Diseases Control Law (Notifiable Infectious Diseases)

Type of infectious diseases	**Species of animals**
1. Bluetongue	Cattle, water buffalo, deer, sheep, goat
2. Akabane disease	Cattle, water buffalo, sheep, goat
3. Malignant catarrhal fever	Cattle, water buffalo, deer, sheep
4. Chuzan disease	Cattle, water buffalo, goat
5. Lumpy skin disease	Cattle, water buffalo
6. Bovine viral diarrhea / viral disease	Cattle, water buffalo
7. Infectious bovine rhinotracheitis	Cattle, water buffalo
8. Enzootic bovine leukosis	Cattle, water buffalo
9. Aino virus infection	Cattle, water buffalo
10. Ibaraki disease	Cattle, water buffalo

11. Bovine papular stomatitis	Cattle, water buffalo
12. Bovine ephemeral fever	Cattle, water buffalo
13. Melioidosis	Cattle, water buffalo, deer, horse, sheep, goat, pig, wild boar
14. Tetanus	Cattle, water buffalo, deer, horse
15. Blackleg	Cattle, water buffalo, deer, sheep, goat, pig, wild boar
16. Leptospirosis (caused by only Leptospira pomona, Leptospira canicola, Leptospira icterohaemorrhagiae, Leptospira grippotyphosa, Leptospira hardjo, Leptospira autumnalis and Leptospira australis)	Cattle, water buffalo, deer, pig, wild boar, dog
17. Salmonellosis (caused by only Salmonella dublin, Salmonella enteritidis, Salmonella typhimurium and Salmonella choleraesuis)	Cattle, water buffalo, deer, pig, wild boar, chicken, duck, quail turkey
18. Bovine campylobacteriosis	Cattle, water buffalo
19. Trypanosomiasis	Cattle, water buffalo, horse
20. Trichomoniasis	Cattle, water buffalo
21. Neosporosis	Cattle, water buffalo
22. Cattle grub	Cattle, water buffalo
23. Nipah virus infection	Horse, pig, wild boar
24. Equine influenza	Horse
25. Equine viral arteritis	Horse
26. Equine rhinopneumonitis	Horse
27. Equine Hendra virus infection	Horse
28. Horsepox	Horse
29. Tularemia	Horse, sheep, pig, wild boar, rabbit
30. Contagious equine metritis	Horse
31. Equine paratyphoid	Horse
32. Epizootic lymphangitis	Horse
33. Contagious ecthyma	Deer, sheep, goat
34. Nairobi sheep disease	Sheep, goat

35. Sheep pox	Sheep
36. Maedi visna	Sheep
37. Contagious agalactia	Sheep, goat
38. Enzootic abortion of ewes	Sheep
39. Toxoplasmosis	Sheep, goat, pig, wild boar
40. Mange	Sheep
41. Goat pox	Goat
42. Caprine arthritis/encephalomyelitis	Goat
43. Contagious caprine pleuralpneumonia	Goat
44. Aujeszky's disease	Pig, wild boar
45. Transmissible gastroenteritis	Pig, wild boar
46. Swine Teschovirus encephalomyelitis	Pig, wild boar
47. Porcine reproductive/respiratory syndrome	Pig, wild boar
48. Swine vesicular exanthema	Pig, wild boar
49. Porcine epidemic diarrhea	Pig, wild boar
50. Atrophic rhinitis	Pig, wild boar
51. Swine erysipelas	Pig, wild boar
52. Swine dysentery	Pig, wild boar
53. Avian influenza*3	Chicken, duck, quail, turkey
54. Low pathogenic Newcastle disease*4)	Chicken, duck, quail, turkey
55. Avian pox	Chicken, quail
56. Marek's disease	Chicken, quail
57. Infectious bronchitis	Chicken
58. Infectious laryngotracheitis	Chicken
59. Infectious bursal disease	Chicken
60. Avian leucosis	Chicken
61. Avian tuberculosis	Chicken, duck, quail, turkey
62. Avian Mycoplasmosis	Chicken, turkey
63. Leucocytozoonosis	Chicken

64. Duck hepatitis	Duck
65. Duck viral enteritis	Duck
66. Rabbit hemorrhagic disease	Rabbit
67. Myxomatosis	Rabbit
68. Varroosis	Honeybee
69. Chalkbrood	Honeybee
70. Acariosis	Honeybee
71. Nosemmosis	Honeybee

*3) any avian influenza except highly pathogenic avian influenza and low pathogenicity avian influenza

*4) any Newcastle disease except Newcastle disease designated as a Domestic Animal Infectious Diseases

Table VI-c. Infectious diseases that the veterinarian shall report based on the Law Concerning the Prevention of Infections and Medical Care for Animal Patients of Infections

Type of infectious diseases	**Species of animals**
1. Ebola hemorrhagic fever	Monkey
2. Severe acute respiratory syndrome (SARS)	Ferret-badger, raccoon dog, civet
3. Plague	Prairie dog
4. Marburg disease	Monkey
5. Shigellosis	Monkey
6. West Nile fever	Birds
7. Echinococcosis	Dog
8. Tuberculosis	Monkey
9. Avian influenza (H5N1 or H7N9)	Birds
10. Middle East respiratory syndrome (MERS)	Dromedary

1.5.6.1. REQUIRED SAMPLES AND DIAGNOSTIC TESTS

- For appropriate sampling and diagnostic techniques concerning notifiable diseases consult:
  - National Institute of Animal Health, diseases information, monitored infectious diseases: http://www.naro.affrc.go.jp/org/niah/disease_fact/kansi.html
  - Ministry of Health, Labor and Welfare, notifiable diseases and animal species based on the Law Concerning the Prevention of Infections and Medical Care for Animal patients of Infections:

http://www.mhlw.go.jp/stf/seisakunitsuite/bunya/kenkou_iryou/kenkou/kekkaku-kansenshou/kekkaku-kansenshou11/02.html

1.5.6.2. RECOMMENDATIONS FOR DISEASE CONTROL AND ANIMAL TRADE

- For recommendations for disease control and trade consult:
  - Animal Quarantine Service, the Domestic Animal Infectious Diseases Control Law: http://www.maff.go.jp/aqs/hou/36.html

1.5.6.3. RESEARCH AND TEACHING ANIMALS

- Personnel and students using animals for research and teaching in the FVM must adhere to all applicable biosecurity procedures. Approval should be obtained from the Dean of FVM ~~prior to~~ before initiating these activities.
- Teaching and research animals may NOT be housed in animal patient housing areas of the FVM except for extraordinary circumstances or medical reasons.

CHAPTER 2. ANATOMY SPECIAL PRACTICUM ROOM BIOSECURITY SOP

2.1. GENERAL ATTIRE FOR THE ANATOMY SPECIAL PRACUM ROOM

- Origin of the animals:
  - **Equine farms**: Adapting equine cadavers mainly died from natural causes.
  - **Livestock companies**: Adapting cadavers or living animals, such as sound cattle, pigs, and poultry. Teaching staff in charge of euthanasia perform a clinical examination.
  - **Private companies**: Purchasing sound dog cadavers.
- The animals coming from animal dealers or livestock companies are euthanized as soon as they arrive if needed at the Anatomy Special Practical Work Room. It does not apply to cadavers.
- Divisions within the Anatomy Special Practical Work Room:
  - Risk zone: Areas directly concerned by biosecurity measures. It includes one dissection room and a refrigerator.
  - Clean zone (non-risk zone): Areas not at risk. It includes the shower rooms, the washrooms, the preparation rooms, and the Anatomy Laboratory.
- The Anatomy practicum is carried out on a three-day basis. Students and teaching staff put on the prepared rubber boots and proper clothes for the anatomy practicum such as protective clothing, overalls, white lab coats, aprons, etc. (hereinafter called clothes). Latex gloves and masks are used as necessary.
- Students and teaching staff must change their clothes and wear rubber boots in the preparation room before entering the Anatomy Special Practical Work Room. They must use a footbath when entering the risk zone. When exiting, rubber boots must be washed thoroughly and disinfected in a footbath in the Anatomy Special Practical Wook Room. Take off rubber boots and clothes in the preparation room. Used clothes must be washed in a washing machine in the preparation room, and never take those used clothes outside of the building. Used dissection instruments must be thoroughly cleaned, disinfected, and returned to a rack in the preparation room at the end of each day. Used scalpel blades and dirty latex gloves must be discarded in medical waste boxes (These materials carry risks).
- Teaching staff must wear an apron and rubber boots when entering the Anatomy Special Practical Work Room risk zone. The rubber boots should be placed on the designated boot rack in the preparation room.

2.2. GENERAL CLEANLINESS AND HYGIENE

2.2.1. GENERAL DISINFECTION PROTOCOL

- It is obligatory to wash and disinfect hands when entering and leaving the Anatomy Special Practical Work Room risk zone. Latex gloves during the dissection are mandatory but this doesn't remove the obligation to wash and disinfect hands before leaving the risk zone.

- Suppose a specimen is found to be infectious. In that case, students will be instructed to remove and discard latex gloves and clothing in a designated dustbin, wash and disinfect equipment, rubber boots, and hands, and then leave the Anatomy Special Practical Wook Room. All the contaminated cadavers will be placed by the teaching staff into a special collecting dustbin ~~of~~ in the anatomy room. Instruments, rubber boots, tables, and the anatomy room will be washed thoroughly and disinfected.

2.2.2. FOOTBATH

- Students and teaching staff must wear rubber boots before entering the Anatomy Special Practical Work Room, and these must be taken off as soon as leaving the risk zone and placed in the changing room. After each anatomy practice work, put the rubber boots on a rack in the ~~preparing~~ preparation room.

2.2.3. DISINFECTION PROTOCOL FOR INSTRUMENTS AND EQUIPMENT

- Dissection instruments used by the students must be washed thoroughly and disinfected at the end of each day and returned to a rack in the preparation room.
- Used scalpel blades and dirty latex gloves must be placed in medical waste boxes.
- Dissection instruments used by the teaching staff must be washed and disinfected every day.
- Dissection rooms will be rinsed with water using a hose and scrubbed with powder detergent at the end of each day.
- Dissection tables will be thoroughly washed with powder detergent and disinfected after the practice work.

2.2.4. DETERGENTS AND DISINFECTANTS APPROVED FOR USE IN THE ANATOMY SPECIAL PRACTICAL WOOK ROOM

For the tables and the floor:

- Powder detergent: scouring and cleaning
  Hypochlorous acid: disinfection

Hand soaps and disinfectants:

- Hand soap
- Hand sanitizer

- Students are encouraged to be immunized against tetanus. If a student has cut him/herself during dissection, the student must immediately stop the dissection, call the teaching staff, and wash his/her hands. The wound is inspected and disinfected.
- If the wound is deep, the student is brought to the Health Service Center. If the wound is superficial, it is treated on the spot and protected from further contamination by a dressing.
- If a student not to be immunized against tetanus has cut him/herself, he/she must go to the hospital and receive proper wound care, an anti-tetanus serum, and a tetanus vaccine.

For the instruments:

- 70% Ethanol: disinfectant for instruments

2.2.5. FOOD AND BEVERAGES

- It is strictly forbidden to drink or eat within the areas of the Anatomy department laboratory except for the staff offices and the conference room.

2.3. GUIDELINES FOR CHOOSING AND RECEIVING CADAVERS

- Only sound animals are bought by the Anatomy department.

2.4. DECEASED ANIMAL PATIENTS

2.4.1. BREAKDOWN OF ANIMAL PATIENT ENVIRONMENT AND STORAGE OF ANIMAL PATIENT CORPS

- Cadavers are stored in the refrigerator.
- They are stored in the refrigerator during the practical workdays collected in the tray in the Anatomy Special Practical Work Room at the end of the last day of the practical work and kept until incineration.
- A refrigerator should be regularly cleaned and disinfected.

2.5. BREAKING TRANSMISSION CYCLES

2.5.1. VISITORS IN THE FVM

- Visitors are only allowed to walk along the corridors and the clean zone.

2.5.2. CHILDREN

- Children are only allowed to walk along the corridors and the clean zone under the supervision of an adult.

2.5.3. PETS

- Neither teaching staff nor students are allowed to enter the Anatomy Special Practical Work Room with their pets.
- Any animal other than those used for anatomy purposes are strictly forbidden.

CHAPTER 3. PATHOLOGICAL ANATOMY (NECROPSY) ROOM BIOSECURITY SOP

3.1. IMPORTANT ISSUES

- The issues addressed in these guidelines include:
  - The classification and stratification of the hazardous infections that may be encountered
  - The development of standard protocols to minimize the risk of infection from all cadavers
  - The development of protocols to deal with the more commonly encountered hazardous infections, and with rare but dangerous infections
- There are other, non-infectious, risks to students and FVM personnel in the necropsy area. These include electrical safety, manual handling of knives, blades, scissors, and power bone saws, and chemical substances hazardous to health. These are regulated in the university safety guides and are not considered in these guidelines.

3.2. ACQUISITION OF INFECTION

- Infections in the necropsy room can be acquired by these five routes: -
  - Percutaneous inoculation -
  - Inhalation
  - Ingestion
  - Skin contamination without inoculation
  - Contamination of mucosal surfaces (eye, mouth, nose)
- The main practical concerns during farm or companion animal necropsies are rabies virus, *Mycobacterium* spp, prions, *Salmonella*, and *Clostridium*. For autopsies of monkeys, the main practical concerns are blood-borne viruses and inhaled pathogens such as *Mycobacterium tuberculosis*.

3.3. CLASSIFICATION OF PATHOGENS

- The Law Concerning the Prevention of Infections and Medical Care for Animal Patients of Infections in Japan categorized human and animal infectious agents into four hazard group (HG) categories.
- For students and personnel, the significant groups are HG 3 and 4 for human pathogens and HG 4 for animal pathogens.

3.3.1. HAZARD GROUP 2 PATHOGENS

- The most likely route of transmission of these biological agents in the post-mortem room is by hand to mouth. Good hygiene procedures, including proper hand washing, should prevent their transmission.
- Inoculation is also possible but reduced to a minimum by standard modern universal precautions.

- Regarding necropsies on animals with granulomatous lesions, with a low risk of inhaled infection during the procedure, wearing a mask
- appropriate for ~~a~~ tuberculosis/tularemia necropsy provides sufficient protection and additional antibiotic prophylaxis can be considered on a case-by-case basis.

3.3.2. HAZARD GROUP 3 HUMAN PATHOGENS

- These are biological agents that can cause severe human disease and present a serious hazard to necropsy attendees; it may present a risk of spreading to the community.
- In practice, the only situations generating concerns of this type are necropsies of primates. In these cases, students do not have access to the necropsy room.
- The necropsies and sampling procedures are made by skilled staff wearing masks and eye protection.

3.3.3. HAZARD GROUP 4 ANIMAL PATHOGENS

- These are biological agents that can cause economically devastating epidemics. Restriction of trade from affected countries and stamping out procedures in affected areas are required.
- Whenever a suspect case is identified, students and personnel attending the necropsy are required to avoid any contact with farm animals, farms/farmers for a week.

3.3.4. HAZARD GROUP 4 HUMAN PATHOGENS

- This group includes the viral hemorrhagic fevers (VHF), for which there are no current vaccines: Marburg, Ebola, Lassa fever, Congo-Crimean hemorrhagic fever, and Nipah virus.
- These pathogens are not present in the country at the time of writing.

3.4. STANDARD PROCEDURES FOR ALL NECROPSIES

- There is a trend for strengthening the application of safety and hygiene precautions during all necropsy procedures. Students and personnel are required to wear the following:
  - Water-resistant disposable gown that completely covers the arms, chest and legs
  - Latex gloves
  - Rubber boots with reinforced toe caps
  - Facemask to protect mouth and nose from direct splash contamination and eye protection whenever a power bone saw is used.
- Aside from hand and respiratory protection with a high level of protection, these standards (criteria) can reduce the risk of infection from cadavers with any of HG 2 and 3 infections to an acceptable level (even if the infection was not confirmed before the necropsies).
- Faculty pathologists are always aware of the fact that they must minimize risk to those who are involved in handling a cadaver during and after a necropsy.

- Six distinct areas were demarcated in the necropsy area: changing room, entrance for loading animals, hall, working area, disinfection area, dipping area
- The authorized circulation is painted on the floor:
  - Entry into the changing room where students take their personal affairs off, put clothes, disposable gloves and boots dedicated to the necropsy room on
  - Entry using the entrance for the necropsy room
  - Entry in the working area where disposable gloves and disinfected dissection equipment are available
  - Exit first via the disinfection area, where students are requested to leave the dissection equipment, ~~to~~ wash their boots, to trash their gloves and to wash and disinfect their hands
  - Passage in the dipping area (disinfectant)
  - Return to the changing room where students take their overalls and boots off, wash and disinfect their hands and bring their personal affairs back.
- The FVM staff and students were informed that the prescribed circulation cannot be broken in any case, except in case of emergency (fire). The staff of the pathology service is not directly implicated in the necropsy room, and their access to this room is forbidden.

CHAPTER 4. FOOD SCIENCE BIOSECURITY SOP: EXTRAMURAL PRACTICAL WORK

4.1. GENERAL INTRODUCTION

4.1.1. FOR WHOM AND FOR WHAT

- This document aims to provide routine procedures to minimize:
  - the risk for students and FVM staff to transmit human or animal diseases from various industrial facilities to livestock, poultry or foodstuffs.
  - the risk for them to be infected by diseases transmitted by animal and food products.
- The facilities include farms, dairies, swine premises, slaughterhouses, food processing units and other facilities where there are animals or unprocessed animal tissues, secretions or excretions, e.g. saliva, manure, urine, soiled feed, bedding, water, dirt and milk.

4.1.2. APPLIES TO: Students of the Faculty of Veterinary Medicine

- Students are taken to several food industries in the context of practical training about food quality and safety management.
- Students have a tour of facilities (observation of the work) for the first step, and then only students who experienced the tour will receive practical training including inspection tasks.
- The program is different each year.
- Students and FVM staff receive specific instructions to be adapted to each facility before each visit.

4.2. GENERAL PRINCIPLES OF HYGIENE

4.2.1. RULES FOR HEALTH

- Periodic medical examinations must be received.
- If a student is suffering from a contagious disease known to be potentially harmful to food products, he/she must inform the FVM staff of his/her condition. The students will not be allowed to enter the production area.
- The persons responsible for the slaughterhouse should know about all the potential zoonotic infections that could be present at the slaughterhouse. If applicable, they will inform the FVM staff about these diseases, so that students will not be in contact with infected materials, e.g. living animals, carcasses, tissues, secretions, excretions, etc.

4.2.2. GENERAL HYGIENE PRINCIPLES

- Students are given clear instructions on food hygiene matters to minimize the risk of hazards causing food contamination. Besides, since most visited slaughterhouses/food industries are ISO certified or follow HACCP plans, students are requested to strictly follow their internal Good Hygiene Practices.

- They are also asked to have a high degree of personal cleanliness.
- The FVM staff ensure that students confirm the general hygienic rules, and students are asked to sign ~~in~~ a document stating that they have understood the instructions. The documents are filed by the slaughterhouse/food industry staff.
- During the whole visit to the facilities, the FVM staff make sure that students follow the hygienic rules. In particular, students are asked not to touch the food products, except if they need to perform inspection tasks. Also, clothing and shoes worn on other farm visits should be cleaned and disinfected before use on the facility.
- On entering a facility, students need to inform the FVM staff about any livestock facilities visited within the previous 48 hours (or specified period by the facility), including any animal confinement or waste storage areas.
- It is strictly forbidden to bring and eat or drink any food or beverages into the slaughterhouse/food industry premises.
- Also, smoking and the possession and consumption of alcohol are strictly prohibited in the facilities. Wearing jewelry is prohibited, including watches, earrings, piercings, and false nails.

4.2.3. HAND WASHING

- On entering and leaving the facilities, after a visit to the washroom and when hands are visibly soiled, hands should be thoroughly washed following the rules of each facility.
- Refer to a general protocol in Chapter.1 for hands washing, and follow the rules of the individual facilities.

4.2.4. STUDENT CLOTHING

- Students are requested to wear clean clothes. When entering the facilities, they put on a single-use lab coat, a disposable hat or hairnet, a plastic safety helmet as well as clean white boots or disposable overshoes.
- Appropriate clothes by the rules of each facility should be prepared.

4.3. PARTICULAR ASPECTS REGARDING THE VISITED FACILITIES

- The visit to the facility is made starting in the clean and ending in the dirty sectors, i.e. from the cutting plant to the slaughterhouse, through the meat processing plant, to minimize the risk of cross-contamination.

4.3.1. BOVINE AND PORCINE SLAUGHTERHOUSE

- On arrival, students go to the student meeting room and put on specified clean clothes and clean white boots.
- At the entry of the slaughterhouse, they put on the protective equipment, as described in Chapter 1.
- Both slaughtering lines (bovine and porcine) are parts of the visit.
- Students will start the visit with clean sectors and continue with dirty sectors.
- In the event a student gets injured such as a cut, he/she immediately stops the inspection task. In case of a cut, he/she washes the cut thoroughly in the nearest wash sink. Then, he/she leaves the inspection task area, and the cut is disinfected with alcohol or other disinfectants in an appropriate area.

4.3.2. VISIT TO THE MEAT-CUTTING PLANT

- To get to the meat-cutting plant, the students must walk through the clean sector of the slaughterhouse.

4.3.3. VISIT TO THE MEAT PROCESSING PLANT

- In the meat processing plant, the students put on clean clothes and protective equipment by the rules of the facility.
- At the exit, overshoes, etc. are removed and thrown away.

4.3.4. POULTRY SLAUGHTERHOUSE

- General hygiene rules (see Chapter 1) are applied in this slaughterhouse.

4.4. WASHING AND DISINFECTION OF EQUIPMENT

- The use of not disposable equipment (boots, safety helmets, knives, aprons) is strictly limited to the same facility.
- This equipment cannot be used in other facilities.

4.4.1. BOOTS

- At each entry and exit of the slaughterhouse, boots should be washed by the rule of the facility.
- Boots are managed hygienically by the rule of the facility.

4.4.2. SAFETY HELMETS

- They are managed hygienically by the rule of the facility.

4.4.3 KNIVES

- They are sterilized in over 83°C water, etc. on the slaughtering line between different carcasses or whenever they get dirty.

4.4.4. APRONS

- They are managed hygienically by the rule of the facility.

CHAPTER 5. COMPANION ANIMAL MEDICAL SERVICES BIOSECURITY SOP

All students, clinicians and personnel must be familiar with the basics of hygiene and personal protection. All people working in the Small Animal Hospital are responsible for maintaining the cleanliness of the facility. Please review the infection control guidelines presented in the general section of the biosecurity SOP.

5.1. GENERAL ATTIRE FOR THE SMALL ANIMAL HOSPITAL

- The FVM recommends the use of hospital-dedicated attire for all personnel and students to decrease the risk of carrying infectious agents at home where people or animals may be exposed.
- All personnel and students are required to wear clean professional attire, clean protective outer garments, and clean, appropriate footwear at all times when working in the Small Animal Hospital.
- Attire should be appropriate to the job at hand:

  Teaching staff: white coat and scrub (navy colored)

  ＊Wear a white coat during the opening hours.

  Nurse: white coat, nurse uniform, scrub (navy colored) and jumper (for staff)

  Nurse/Technical staff: Supplied work clothes

  Office worker: Plainclothes or suited clothes such as suits (Cool Biz available during summertime)

  Student: Turquoise colored scrub

  Visitor: White coat for visitors (stored on the first floor)

  Trainee: Own scrub (except navy) with white coat for visitors on top

  Intern: Scrub (navy colored), white coat

  ＊Everyone has to wear a nameplate.
- Wear a specific scrub and white coat in the isolation room. When handling animals, put on gloves, a cap and a mask.
- Footwear: It is recommended that all personnel and students always wear closed shoes while working in the Small Animal Hospital. The type of footwear should be easy to clean and disinfect.
- All staff, students and clients should put on shoe covers in isolation rooms.
- No outside shoes in principle on the floor in blue in the hospital. Owners may wear outside shoes in the treatment room and the waiting room. (floor in brown)
- Protective outer garments (smock, lab coat, etc.) and shoes should be changed or cleaned and disinfected whenever they become soiled with feces, urine, blood, nasal exudates, or other bodily fluids. Thus, it is a good idea to have an extra outer garment available for use.

5.2. ANIMAL PATIENT HYGIENE

- It is of major importance for basic hygiene and ~~for~~ reducing the infection pressure that the animal patient of the Small Animal Hospital is housed in a clean cage. Before a new animal enters a cage, feces, blood, urine, all other organic material and soiled objects should be removed.
- Veterinary technicians clean the cages and the hallways every day. If a cage is dirty within working hours, a sign "cleaning required" is suspended to the cage and a technician is alerted. If a cage needs to be utilized before the technician will have the time to clean it, or outside of working hours of the technician, students and interns should perform these tasks accordingly. In the case of neonates, animal patient hygiene is of extreme importance and thus as soon as feces or wet bedding is present this should be cleaned and disinfected by students and interns.
- If an animal is discharged, the cage should be cleaned immediately.
- Animals with suspected or confirmed infectious disease (class 3 and 4): the responsible clinician, intern, technician or student will empty, clean and disinfect the cage after cleaning off non-contagious cages (see disinfection and break-down protocol). The cage is considered a contagious area until disinfected and thus no animal should enter before it has been cleaned and disinfected.
- Cages used by animals with non-contagious diseases are regularly emptied, cleaned and disinfected (at least once daily). The cage should be cleaned and disinfected in between use by different animals.
- Water buckets need to be cleaned during the hospitalization of an animal. The presence of water in the bucket should regularly be checked and refilled with fresh water at least twice daily after cleaning.
- Feeding bowls need to be regularly cleaned (as needed, or at least twice daily) during the hospitalization of an animal and should be cleaned and disinfected in between use by different animals. Appetite should be noted on the daily care file and food should be discarded in the appropriate box (dustbins for hospitalized animals class l and 2; medical waste bins for class 3 and 4 animals).
- Animals should be kept as clean as possible, and all excretions or secretions on the animal should be removed as soon as spotted. Dirty animals should be washed accordingly, and all animals should be brushed regularly.
- The environment around the cage should be clean, tidy and neat. This means without medications or materials lying around, and no bedding outside the cage. An effort is expected from all personnel and students to arrange used material and not to leave it messing around.
- If animals defecate outside their cage (whether inside the building), their feces need to be removed immediately after defecation. If animal patients urinate inside the building or on any hard surface outside the building, the urine needs to be removed and the floor cleaned, disinfected and dried.
- Dogs with digestive symptoms such as vomiting and diarrhea should be in the bottom cage. (to avoid vomit spilled)

5.3. FOOD AND BEVERAGES

- Food and beverages may only be stored and consumed outside of the hospital or in the kitchen, changing rooms, staff offices, room for night shift staff, and intern's room.
- In the kitchens of the Small Animal Hospital, a refrigerator and a microwave to store and heat food or beverages intended for human use are present. This refrigerator and microwave are not used for medical use, nor storage of

medication, samples or other medical equipment. No other form of storage of medication, samples or other medical equipment is allowed in the kitchen.

- Food and beverages are forbidden to be stored or consumed in animal patient care areas.
- Animal patients are not tolerated in areas where food and beverages are allowed to be stored or consumed.
- Food and beverages should not be left out for long periods as this promotes bacterial growth and foodborne illness.
- Refrigerators to store food or medications for animal patients must not be used to store food or beverages intended for human use.
- All encountered food and beverages that are left unattended will be disposed of immediately. Food and beverages should be marked with the possessor's name, otherwise, they may be disposed of without cleaning permission.

5.4. GENERAL CLEANLINESS AND HYGIENE

5.4.1. PROPER CLEANING

- Maintaining hospital cleanliness and appropriate personal hygiene are responsibilities of all personnel and students working in the Small Animal Hospital.
- Hands must be washed or cleaned with an alcohol-based hand sanitizer before and after handling each animal patient. Hands should also be washed or cleaned with an alcohol-based hand sanitizer when exiting the hospitalization facility before working in other areas of the FVM (See Chapter 1. for the hand washing protocol).
- Clean exam gloves should be worn when handling high-risk animal patients (i.e. infectious disease class 3 or 4 and immunocompromised animal patients), excretions, secretions, or wounds. Surfaces or equipment contaminated by feces, secretions, or blood must be cleaned and disinfected by personnel and students in charge of the animal patient. This is especially important in handling animal patients known or suspected of shedding important infectious disease agents (class 3 and 4).

5.4.2. GENERAL DISINFECTION PROTOCOL

- Clean and disinfect all equipment between animal patients (muzzles, specula, forceps, etc.) using disinfectants available in various areas. Clean equipment can be returned for sterilization when appropriate.
- Students are expected to carry some of their equipment (e.g. scissors, thermometers, stethoscope, leash, penlight), and these supplies must be routinely cleaned and disinfected.
- If fleas or ticks are found on an animal, treat the animal with insecticide from the medication room. Being unable to contact the owner and being judged in an emergency, the treatment is performed under the responsibility of the teaching staff.
- Appropriate attire should be worn whenever disinfectants are used. Additional personal protective equipment (gloves, mask, face shields, goggles, impervious clothing, boots) should be worn when there is a probability of splashing from the disinfection process resulting in contact that is not merely incidental.
- Remove all inorganic and organic material before disinfection. The presence of gross contamination will inactivate most disinfectants. If a hose is used to de-bulk material care must be taken to minimize aerosolization and further spread of potentially infectious agents.

- Wipe the affected cage, walls, and doors with chlorhexidine, alcohol, and others.
- Wash the feed/water suppliers with water and detergent. Allow the area to drain or dry as much as possible to prevent dilution of disinfectant solutions.
- Apply a disinfectant to the affected cage, walls, doors, automatic water di-inker and feeding bowl thoroughly. The disinfectant should remain on the surface for 15 minutes, particularly if an infectious agent is suspected.
- Remove excess disinfectant with water.
- The disinfectant should be rinsed off all surfaces before housing an animal patient in the cage.
- After disinfecting, remove the protective attire and wash your hands.
- For non-routine disinfection measures (e.g. disinfectant misting), only personnel trained and approved to wear and use the required personal protective equipment will be allowed access to the disinfectant areas.
- All multiple-use areas (e.g. examination rooms) where animals are examined or treated, should be cleaned and disinfected following use by personnel and students responsible for the animal patient, irrespective of the infectious disease status of the individual animal.

5.4.3. FOOTMATS

- Personnel and students working in the hospital should use foot mats appropriately whenever encountered. Foot mats do not require full immersion of feet, as the mat is designed to place solutions on the soles and sides of the soles of shoes. However, splash contact with the tops and sides of shoes occurs commonly, and impervious footwear is strongly recommended for personnel and students working in areas where foot mats are used.

5.4.4. DISINFECTION PROTOCOL FOR INSTRUMENTS AND EQUIPMENT

- All instruments, equipment or other objects, including stomach tubes, mouth speculums, endoscopes, grooming tools, clipper blades, etc. must be cleaned and sterilized or disinfected between uses on different animal patients.
- Materials that are sterilized between usage (instruments and equipment such as surgical instruments) must be cleaned with detergent and water and disinfected with a disinfectant after use on animal patients. The equipment should then be returned for sterilization.
- Surfaces or equipment contaminated by feces, secretions, or blood must be cleaned and disinfected immediately by personnel and students in charge of the animal patient. This is especially important in treating animal patients suspected of shedding serious infectious disease agents (class 3 and 4).
- **Class 3 and 4 animal boxes:**
  - All materials used for class 3 or 4 animal patients will be for the exclusive use of these respective patients and stored in well-identified boxes. All these used items must be cleaned and disinfected with a disinfectant by personnel or students in charge of the animal patient after each application and after discharge of the animal patient.
  - Leashes dedicated to canine class 3 or 4 animal patients will be assigned to an animal patient during their hospitalization; leashes used with other animal patients must not be used for canine class 3 or 4 animal patients. These leashes should soak regularly in disinfectants.

- After discharge and appropriate cleaning and disinfection, the box for class 3 will be given to the responsible nurse (class 3). It will be placed on the proper shelves in the specified room of the isolation facility for class 4 (class 4).
- Before using a new animal patient in the hospital, the box will be checked, cleaned and disinfected again by a responsible technician.

- **Stethoscopes:**
  - Stethoscopes owned by personnel may be used on animals in ~~the~~ non-contagious areas. They must be regularly disinfected with alcohol or hand sanitizer solutions. It is recommended to do so at the beginning and the end of the day.
  - Immediate cleaning and disinfection are required when stethoscopes are visibly soiled or after the class 3 or 4 patients' examination.
- **Thermometers:**
  - Glass thermometers are not to be used to decrease risks associated with broken thermometers and mercury exposures.
  - Use electronic thermometers with probe covers. Plastic cases for thermometers should be disinfected regularly.
  - Probes from thermometers used in continuous temperature monitoring (for example during anesthesia) should be thoroughly disinfected between animal patients by wiping or washing to remove gross fecal material and soaking in alcohol and/or chlorhexidine solutions.
  - Individual thermometers are assigned for each high-risk contagious animal patient (class 3 and 4). These are stored in the above-described boxes during hospitalization and cleaned and disinfected when visibly soiled, after each examination and at discharge.
- Other instruments and equipment owned by personnel (e.g., hemostats, scissors, etc.) may be used for multiple animal patients. They must be cleaned and disinfected between using animal patients disinfectants available in various areas.
- Personnel walking dogs and cats in cages are responsible for cleaning fecal material from the ground. Dustbins are available in many locations throughout the hospital.
- All rooms must always be kept clean and neat including tabletops, countertops, and floors. Backpacks, etc. should be stored in locker rooms or staff rooms. Do not store extra clothing, backpacks, or elsewhere.

5.4.5. WALKING AREA

- This area should be cleaned daily and directly after each defecation, and this is the responsibility of the student or personnel walking the dog.

5.5. GUIDELINES FOR RECEIVING AND MANAGING COMPANION ANIMAL PATIENTS

5.5.1. OUT-ANIMAL PATIENTS

- Companion animal patients without signs of contagious disease may wait with owners in the waiting room.
- Out-animal patients can be hospitalized for a short time pending further examinations or procedures in a cage of the out-animal patient area as long as they are not class 3 or class 4 patients.

- Animal patients for further exams with class 3 or 4 are instructed either to stay with owners in the consultation room or will be hospitalized in agreement with regulations regarding class 3 and class 4 patients. Suppose animals stay with the owner in the consultation room awaiting additional procedures. In that case, the room will be marked to inform personnel about the need for cleaning and disinfection and to avoid welcoming other animal patients into this room.
- Ensure that out-animal patients enter the inpatient animal areas as little as possible.
- Attending personnel and students are responsible for cleaning the out-animal patient cages. Especially, students, interns, ~~or~~ residents, and clinicians should remove feces immediately after excretion and dispose of them properly from out-animal patient cages. Remove the animal patient temporarily from the cage and clean the area as needed after urinating or defecating.
- If hospital-owned containers are used for feeding or watering, personnel or students responsible for the case should clean them after each use. Containers used in the isolation facility should be cleaned and disinfected.

5.5.2. IN-ANIMAL PATIENTS

5.5.2.1. STALL ASSIGNMENTS

- Technicians, interns or clinicians in the hospitalization areas decide where in-animal patients are assigned.
- **In general:**
  - Cages are lined up as the medium and small-breed dog care facility.
  - A special area for postoperative animal patients is provided.
  - The general hospitalization area may be also used as a low-care facility.
  - An isolation facility is used for class 3 and class 4 animal patients.
- Clients should be informed that client beds, blankets, collar tags and leashes must be discarded if they get contaminated.
- Locate a clean cage in the facility designated by the person listed above.
- Prepare a cage card with the client/animal patient information and the student/clinician names.
- Suspected or confirmed infection status is to be written on the cage card immediately upon occupancy in case of class 3 or 4 animals.
- Place pertinent signs on the cage with important information for animal care attendants, (i.e. “Caution – will jump” “Caution - will bite”, etc.)
- Provide fresh water, unless otherwise indicated by the clinician.
- Clean and disinfect the cage or individual room while personnel or students take animal patients for a walk. Use the same cage or move to the disinfected new cage when the animal patients are hospitalized in an isolation facility.
- When the animal patient is discharged, place the sign ‘cleaning required’ on the cage to indicate the animal is gone or clean the cage immediately.
- If a cage is needed for animal patients returning in a day, place a sign "Save a cage".

5.5.2.2. ANIMAL PATIENT RECORDS AND MEDICATIONS

- Records of hospitalized cases should be stored in the hospitalization facilities.

- Medications and other materials used in the care of hospitalized cases should be stored in the medication storage, shelves in the room, or the boxes for respective patients. All medication and materials for a case should be ~~clearly~~ identified.

5.5.2.3. CAGE CARDS, TREATMENT ORDERS, AND ANIMAL PATIENT CENSUS BOARD

- A cage card must be posted at the time that animal patients are hospitalized.
- The upper part of the cage card must list pertinent client and animal patient identification, names of students, if any, and clinicians assigned to the case.
- The cage card must indicate the symptoms at the time of admission, the tentative diagnosis, and especially the infectious disease class of the patient animal so that technicians and students can understand the infectious disease hazard level and take associated precautions (cage card: yellow for Class 3, red for Class 4).
- All information requiring prompt notification to clinicians should be documented in ~~on~~ a hospital record or an electronic health record.
- Treatment plans should be on a hospital record or an electronic health record.
- The cage card must be updated as animal patients' status can change during hospitalization.
- Animal patient information must also be recorded on the animal patient census board in the hospitalization area, including the name of the student responsible, if any. Anticipated discharge date and time should also be noted on the board as soon as available.
- Cage cards, treatment orders, and the animal patient census board contain confidential animal patient information. In that case, confidential information must be on a hospital record or an electronic health record.

5.5.2.4. FEED AND WATER

- All food (including that provided by clients) must be stored in appropriate bags or containers which can be tight-fitted.
- Only minimal amounts of food are to be stored in the refrigerator of the Small Animal Hospitalization kitchen to avoid contamination.
- If a new can is to be opened, the opening date is clearly stated on the outside of the can and a plastic cover is placed to seal it before placement in the refrigerator.
- All cans opened should be discarded promptly.

5.5.2.5. BEDDING

- Students, technicians and clinicians are responsible for bedding cages for animal patients as they arrive and during hospitalization.
- If at other times the cages are noted to be soiled or wet, students, technicians and veterinarians are responsible for cleaning them.

5.5.2.6. DISCHARGE

- Before discharge, clients or their agents must be instructed about infectious disease hazards associated with animal patients and recommendations about control of these hazards on the home premises.
- The anticipated time and date of discharge should be noted on the animal patient census board and communicated to the responsible student in hospitalization, technician and intern, to optimize animal patient hygiene at the time of discharge.
- Students, technicians and clinicians are responsible for breaking down items around cages and ensuring that they are discarded, filed, or cleaned and disinfected (fluids, brushes, barrier gowns, paperwork, etc.).
- When the animal patient is discharged, a "cleaning required" sign should be posted on the cage. This cage should be cleaned by the responsible student, nurse or clinician.
- Cages that housed animal patients with known or suspected contagious agents should be marked with a sign ("Do Not Use, Special Cleaning Required"). The name of the suspected infectious agent must be marked on the cage. Also, biosecurity personnel and responsible personnel should be notified of the cage number and animal patient ID.

5.5.2.7. ITEMS FROM OWNERS

- Items owned by a client must not be used on other animal patients.
- The hospital supplies all necessary materials for animal patients.
- If an owner insists on handing over their material, and the clinician decides to allow this exceptionally, owners need to understand that a high likelihood exists that their material will not be returned.

5.6. CLEANING PROTOCOLS: SMALL ANIMAL FACILITIES

5.6.1. PARKING AREA

- The parking area and its surrounding grass areas will be checked at least monthly to remove all remaining excrement. Facilities should clean the area, including the concrete surfaces at least once yearly.

5.6.2. COMPANION ANIMAL OUT-ANIMAL PATIENT AREA

- Out-animal patient cages must be cleaned between out-animal patients by responsible personnel, and at least at the end of the day that the cage has been occupied.

5.6.3. COMPANION ANIMAL HOSPITALIZATION AREA

- Monday through Friday, responsible personnel will clean and disinfect all used cages at least twice daily, and more often if needed.
- On weekends and the closing days, students, nurses or clinicians in charge of the case clean and disinfect all used cages in the morning, and more often if needed.
- Occupied cages are thoroughly cleaned and disinfected twice daily, preferably while the animal patients are walking or undergoing additional diagnostic or therapeutic procedures, or during visits by the owner.
- Whenever cages are noted to be excessively soiled or wet, students, clinicians, and technicians are responsible for cleaning, disinfecting and changing the bedding.

- All hospital possessions should be dipped in disinfection liquid to disinfect ~~on~~ every animal patient.

5.6.4. ROUTINE CAGE CLEANING

- For disinfectants (especially foam) to be effective, they must be used on clean surfaces. In other words, before disinfection, all macroscopic organic material should be removed using detergent, and the surface needs to be rinsed before the application of disinfectant. Biofilm formation occurs in areas of standing water, and where disinfectants are allowed to sit on dirty surfaces.
- General principles of cleaning: It is imperative to remember that with disinfectants, more does not mean better. Using the proper dilutions of disinfectants provides optimum disinfecting action. Overusing disinfectants may encourage resistance in microorganisms and contribute to the formation of biofilms.
- Use care when working in high-risk areas - avoid contamination of equipment or other areas.

Cleaning procedures for cages that hosted class 1 and 2 animals:

- Use appropriate clothing (barrier clothing if required, in this case a sign will be posted on the cage).
- Put used towels into a designated container.
- Throw away contaminated diapers, etc. into a designated dustbin.
- Clean cages with detergent and remove all macroscopic organic material.
- After cleaning the cage, sweep the floor to remove all debris.
- Scrub soiled areas of floor and walls using detergent and a brush.
- Mop the floor with disinfectant once a day.
- Dry the cage after cleaning.
- Disinfect the adjacent aisle-way as above.
- Cleaning tools must be disinfected at the end of each day (including handles). Corridors should be disinfected when required.
- Animal patients must not be allowed contact with the dumpsters at any time.

Cleaning procedures for a cage that hosted a class 3 animal:

- Students, veterinary technicians or responsible clinicians wear barrier clothing and gloves, then use foot mats provided at the facility.
- Remove all bedding into the container that is provided at the cage.
- Clean the cage with detergent and remove all macroscopic organic material.
- Sweep the floor to remove all debris.
- Rinse floor and walls to remove gross debris, scrub soiled areas using detergent and a brush. (Scrub soiled areas using detergent and a brush.)
- Rinse the cage with water and put on disinfectants after wiping off the moisture.
- Dry the cage after cleaning.
- Cleaning tools must be disinfected at the end of each day (including handles).

Cleaning procedures for a cage that hosted a class 4 animal:

- Students, technicians or responsible clinicians wear barrier clothing and gloves, then use footbath or foot mats provided in the isolation facility.
- Remove all bedding into the container that is provided in the isolation facility.
- Clean the cage with detergent and remove all macroscopic organic material.
- Sweep the floor to remove all debris.
- Rinse floor and walls to remove gross debris, scrub soiled areas using detergent and a brush.
- Rinse the cage with water or wipe the cage with a wet towel.
- Apply disinfectant.
- Dry the cage.
- Cleaning tools must be disinfected at the end of each day (including handles).

Daily Routines:

- All procedures performed by technicians and personnel need to be carried out by interns and students if necessary.
- All cages are expected to be in mint condition at 8 am.

Weekly Routines:

- Sinks and drains in the consultation rooms and hospitalization area should be cleaned and disinfected by staffs.

Monthly Routines:

- Empty cages and corridors should be cleaned if not used within one month to remove accumulating dust.
- Areas that are not used daily (i.e. tops of walls, areas not used often - scales, wash rack, etc.) should be cleaned monthly to prevent accumulation of dust.
- The sweeper should be cleaned and maintained.

Semiannual Routines:

- All floors should be cleaned and disinfected.
- The isolation area should be emptied and thoroughly cleaned, scrubbed, and disinfected from top to bottom.
- Drains in the isolation area should be scrubbed with detergent, rinsed, and then filled with dilute chlorine-based disinfectant. Do not fill a drain with any disinfectant without cleaning it first.

Annual Routines:

- The entire hospital should be thoroughly cleaned, scrubbed and disinfected from top to bottom, including all equipment by responsible personnel.
- A schedule on how to perform this should be made up by responsible personnel and work should be evaluated by the director of the hospital.

5.7. MANAGING COMPANION ANIMAL PATIENTS WITH SUSPECTED CONTAGIOUS DISEASE

- Special precautions are required when managing animal patients known or suspected of being infected with contagious disease agents. Conditions of special concern because of the potential for nosocomial transmission include animal patients with acute gastrointestinal disorders (e.g. diarrhea), acute respiratory tract infections, or infections with bacteria that are resistant to multiple antimicrobial drugs.
- Animals with suspected contagious infectious diseases should be treated as out-animal patients whenever their clinical condition allows it.
- Appointments for possible infectious disease cases will be handled by the receptionists and personnel and students receiving cases as follows:
  - If a client call indicates an acute case of vomiting, coughing, sneezing or diarrhea, the client will be asked to keep their pet in the car until they have been checked in and a student has been paged so they can be taken directly to the exam room, the Small Animal Isolation Facility, or ICU depending on the circumstances. Transport should preferably be on a gurney or in a cage to decrease hospital contamination.
  - The presenting complaint will be written on the schedule and the electronic health record as “acute diarrhea” “acute vomiting”, “acute coughing” or “possible infectious disease”.
  - The letters “PID” for “possible infectious disease” will be written next to the complaint.
  - If the appointment is made and is coming in on the same day, the receptionist will phone the responsible personnel to notify a possible infectious disease case will be presented.
  - If the animal is presented directly to the reception desk without prior notification, the receptionist should contact the responsible personnel immediately and ask for his/her direction.
  - The personnel responsible coordinate the placement of the animal in an examination room or isolation facility to minimize hospital contamination.
  - Every attempt should be made to reduce any direct contact with the animal patient and any other animal patients.
  - Animals should be transported to the appropriate exam/treatment/housing area by the shortest route possible to limit the potential for hospital contamination. Consider using a gurney or a cage, when possible, to limit the potential for hospital contamination.
- Treatment and diagnostic areas, hospital equipment, personnel and students' clothing should be cleaned and disinfected immediately after contact with animals with suspected infectious diseases regardless of contamination.
- If a contagious infectious disease is suspected based on history, physical examination, or evaluation of previously performed laboratory work:
  - Close off exam room
  - Place a “Do not use, disinfection required" sign.
  - Notify personnel in charge of cleaning the suspected agent and do not use the room until the personnel has removed the sign, or other adequate cleaning/disinfection has been completed.
- Biosecurity personnel should be notified as soon as possible when animal patients with elevated contagious disease risk are admitted or develop these problems while hospitalized.

- Only biosecurity personnel or the Hospital Director can permit to house animal patients with class 4 in locations other than the isolation facility.
- Animal patients with class 3 may also be required to be housed in the isolation facility, at the discretion of biosecurity personnel.
- When class 4 animal patients are housed in the intensive care unit, at least class 3 precautions should be taken (appropriate barrier nursing and biocontainment practices).
  - Barrier nursing precautions must be used.
  - Disinfectant footbaths or foot mats must be placed.
  - Cages housing these animal patients should be marked with a tapeline.
  - Empty cages should be maintained on either side.
  - Using cages at the end of aisles is preferred.
  - The suspected or confirmed disease status must be relayed to biosecurity personnel as soon as possible so that they can assist in communication and evaluating if appropriate precautions are being taken to house the animal.
- Any animal with a history of acute vomiting and diarrhea, and/or any animal with a history of acute coughing or respiratory signs with a suspicion of an infectious cause should be handled as a suspected contagious disease case (class 3 and 4).
- Hospitalized companion animal patients with suspected infectious gastrointestinal disease should be considered possible sources of nosocomial or zoonotic infection and should not be walked in common eliminating areas - they should be allowed to be eliminated in the isolation facility - or when finished, in the specially designated isolation walking area. All waste material must be properly disposed of and contaminated surfaces in the hospital must be appropriately cleaned, disinfected and dried as soon as possible.
- At discharge, personnel and students must ensure that instructions given to clients adequately address the infectious disease hazards associated with the animal patient (to other animals and humans) and appropriately provide suggestions for mitigating risks to people and animals.

5.7.1. CLASSIFICATION OF SUSPECTED/CONFIRMED CONTAGIOUS ANIMALS

5.7.1.1. GENERAL RULES (CLASS 1, 2, 3 AND 4)

- See the general part of the Biosecurity SOP for classification.
- This classification also indicates if the owner can visit their animal patients. Therefore, there is a need to be explained at the time of the initial consultation and soon after assigning an animal patient to class 3 or 4.
- Class 3 dogs can be visited by the owner if all barrier nursing rules are implemented and if possible, in the hospitalization cage or after correct transport in a consultation room, which will then be disinfected after the visit.
- Class 4 dogs can only be visited in the exceptional circumstances of pending euthanasia. Even in this circumstance, the owner should be discouraged from seeing the animal, yet if the owner insists on a short visit to the isolation facility, bearing in mind all barrier nursing precautions can be authorized by the primary clinician.

5.7.1.2. SPECIAL PRECAUTIONS DURING HOSPITALIZATION (CLASS 3)

5.7.1.2.1. MOVEMENT OF HIGH-RISK ANIMAL PATIENTS

- Class 3 animal patients requiring isolation should ideally be transported directly to the Small Animal Isolation Facility.
- If animal patients are moved from the main hospital to the isolation facility, they should be moved by a route that minimizes exposure of other animal patients and contamination ~~to~~ of the facility.
- Personnel handling animal patients while being moved should use barrier nursing precautions.
- Any areas or equipment contaminated with infectious material during transit should be immediately cleaned and disinfected.
- All movements should be kept to a strict minimum. Use a gurney or a cage rather than wearing a specific gown, gloves, etc. to carry patients.
- All waste and excrement produced should be eliminated and all contaminated surfaces should be cleaned, disinfected and dried as soon as possible.

5.7.1.2.2. REQUIRED DIAGNOSTIC TESTING IN ANIMAL PATIENTS WITH SUSPECTED INFECTIONS

- Diagnostic testing to detect certain infectious and/or zoonotic agents provides essential information for the appropriate clinical management of infected animal patients. This testing provides direct benefit to the animal patient in addition to benefiting clients by allowing them to appropriately manage their other animals and protect their families. It also benefits the hospital as this information is essential for the appropriate management of disease risk for all animal patients, personnel and students in the hospital.
- It is therefore mandatory for all hospitalized animal patients to undergo diagnostic testing if an infection with specific contagious or zoonotic agents is seriously considered. This diagnostic testing is considered essential to case management in the hospital and therefore is carried out and billed to the client.
- It is the responsibility of the clinician responsible for an animal patient's care to ensure that appropriate samples are submitted for this testing and that appropriate biosecurity precautions are taken with these animal patients.
- Biosecurity personnel should be notified as soon as possible that there is a reasonable index of suspicion that a hospitalized animal patient may be infected with one of the agents listed below.
- Biosecurity personnel must also be consulted before moving class 3 and 4 animal patients for additional procedures, except when clinicians judge that this movement is immediately necessary for managing ~~the~~ critical healthcare needs.
- Whenever possible, diagnostic, surgical, or other procedures should be performed wherever high-risk animal patients are housed, rather than moving the animal patient to common exam and treatment areas.
- Appropriate barrier nursing precautions must be always followed by all personnel and students during diagnostic or other procedures.
- If the animal patient requires diagnostics or other procedures (e.g., image diagnosis, surgery) that can only be performed in the main hospital facility, these procedures should be performed at the end of the day whenever possible.
- The attending clinician is responsible for notifying appropriate personnel and students of the suspected infectious agent and methods that are prudent for containment (this includes cleaning and disinfection after procedures).

- In general, all barrier nursing precautions that are required in the animal patient housing area will be required whenever handling that animal patient.
- Instruments, equipment, and the environment should be thoroughly cleaned and disinfected after the procedure, regardless of where the procedure is conducted.
- Precautions should be taken for surgery on companion animal patients with or suspected of having infections that could be contagious diseases (including all animals in the isolation facility and animals in the main hospital).

5.7.1.2.3. BIOLOGICAL SPECIMENS FROM SUSPECTED OR CONFIRMED CONTAGIOUS ANIMAL PATIENTS

- Biological samples should be handled with the same barrier nursing care as the animal patient itself (gowns, gloves, masks, etc.).
- All biological specimens from class 3 or 4 animals should be stored in a sealed plastic bag, and the suspected infectious disease should be stated on the outside of the plastic bag.
- Care should be taken when placing specimens in bags to prevent contamination of the outside of containers of biological samples. Suspected conditions or disease agents should be identified on all submission forms.

5.7.1.3. ISOLATION FACILITY (CLASS 4)

- The Small Animal Isolation Facility is used for the housing of most infectious disease cases.
- Animals not requiring intensive care should be housed in cages in the isolation facility.
- Animal patients with proven Parvoviruses should always be housed in the Small Animal Isolation Facility.
- Clients are never allowed to visit animals housed in the isolation facility. With express permission from biosecurity personnel, exceptions to this visitation rule may be granted under extraordinary circumstances, such as when class 4 animal patients are to be euthanized. In this case, the same level of biosecurity should be applied.

5.7.1.3.1. COMMUNICATION REQUIREMENTS FOR COMPANION ANIMAL ISOLATION

- Biosecurity personnel must be notified ASAP whenever animal patients are placed in the isolation facility and when they are discharged. This notification can be made in person, by phone, or by e-mail, and should be performed by the veterinarian or student with primary responsibility for the animal patient.
- Responsible technicians must be notified when animal patients with contagious diseases are placed in the isolation facility and when they are discharged or moved.
- Cages must be visibly labeled to identify infectious agents of concern, along with the required biosecurity precautions. It is very important to communicate the agent(s) of concern for these animal patients so that all personnel and students can take appropriate precautions to protect against human exposure and to ensure that appropriate cleaning and disinfection procedures are used.

5.7.1.3.2. GUIDELINES FOR MANAGING AND CARING FOR ANIMAL PATIENTS IN ISOLATION

- Strict attention to hygiene and the use of barrier nursing precautions in the isolation facility is critical for the appropriate containment of contagious disease agents.
- Shoes cover should be used.
- Before and after examining each animal patient, hands must be washed with soap and water or cleaned with alcohol-based hand sanitizer.
- Clean exam gloves must be always worn when working in the isolation facility.
- Special care must be taken to prevent contamination of the isolation environment by dirty hands, gloves, or shoes.
- Environmental hygiene is the responsibility of all personnel and students working in the isolation facility. Do not wait for a technician, other personnel, or students to clean. Assist with general cleanup and maintenance whenever possible. Personnel and students in charge of the animal patient must clean and disinfect surfaces or equipment contaminated by feces, other secretions, or blood immediately.
- When possible, students assigned to infectious disease cases should not have contact with immune-suppressed animal patients elsewhere in the hospital. Examples would include leukopenia animal patients, young animals, animals receiving immunosuppressive drugs and animal patients with diabetes mellitus. When the caseload demands contact with infectious disease suspects, treat other animal patients before handling infectious cases.
- Isolated companion animal patients should not be walked in common eliminating areas - they should be allowed to defecate and urinate in the isolation facility- or when finished, in the special designated isolation walking area. All waste material must be properly disposed and contaminated surfaces in the hospital must be appropriately cleaned and disinfected as soon as possible.
- Food and beverages are forbidden in the isolation facility because of the risk of exposure to zoonotic agents.

5.7.1.3.3. MINIMIZING ENTRY INTO THE ISOLATION FACILITY

- Entry into the isolation facility should only occur when necessary.
- Minimize the number of personnel and students handling cases in isolation. Only the student and staff members directly responsible for the animal patient should enter the isolation facility. Clients are not permitted to visit animal patients in isolation.
- Whenever possible and appropriate, personnel and students should utilize the window or build-in web cameras for general monitoring of animal patients' conditions to minimize foot traffic into the isolation facility.
- Only the clinicians, students, technicians and personnel responsible for animal patient care should enter the isolation facility.
- When possible, students assigned to class 4 animal patients should not have contact with other animal patients, most importantly immune-suppressed animal patients (leukopenic animal patients, young animals, animals receiving immunosuppressive drugs, animal patients with diabetes mellitus, etc.) elsewhere in the hospital. When the caseload demands contact with infectious disease suspects, treat other animal patients before handling infectious cases.
- The appropriate barrier precautions (gloves, gown, mask, respirator, and/or plastic boots) must be worn. The required barrier precautions will be posted on the board outside.

- For zoonotic diseases (class 4 level), only the primary clinician, one student and one technician, if necessary, should have contact with the animal patient.
- The primary clinician is always responsible for ensuring that animal patients receive appropriate care. Students and technicians may be asked to assist with this effort but the ultimate responsibility for animal patient care lies with the primary clinician assigned to the case.
- Clients are not permitted to enter the isolation facility unless in the exceptional circumstance of euthanasia. In this case, the same level of biosecurity is applied.

5.7.1.3.4. EQUIPMENT AND MATERIALS

- In general, any materials taken into the isolation facility should not be taken back to the main hospital.
- Surfaces or equipment contaminated by feces, other secretions or blood must be cleaned and disinfected immediately by personnel and students in charge of the animal patient.
- Individual kits with thermometers, stethoscopes, scissors, etc. are available on the shelf; one kit per animal patient, which needs to be clearly labeled.
- Any supplies taken into the isolation facility should be used in the same facility or discarded in the medical waste bins in the facility.
- All equipment and material that has been used on one animal patient can only be used on that animal patient. (Do not use on multiple animal patients and don't return them into stock).
- Medications used on isolation animal patients should be billed to the client and sent home at discharge or else discarded. Do not return medications or intravenous fluids from the isolation facility to the medication room.
- Intravenous fluids not assigned to an animal patient should be stored on the designated shelf in the isolation facility.
- Samples obtained from isolated animal patients for laboratory testing should be immediately placed in a plastic-sealed container and labeled.

5.7.1.3.5. PROCEDURES FOR ENTERING AND EXITING ISOLATION AREAS

- The clinician in charge of the animal patient should notify technicians of the time of entering so that they can assist.
- Leave clinic outerwear (i.e. smock) outside of the isolation facility.
- Put on the required barrier clothing (scrub for the isolation area only, white coat, gloves, overshoes/designated boots, bouffant cap, mask) in a changing room before entering the treatment room/hospitalization room.
- A different barrier gown must be used for each animal in isolation.
- After providing care, the isolation area is cleaned, and gloves are washed in the isolation room.
- Take off the gown and other clothing in a changing room and wash/dry them. To enter the Small Animal Isolation Facility:
  - All people are required to use the shoe cover as they enter the isolation facility.
  - Wash hands for at least 30 seconds or use hand sanitizer before entering the isolation area.
  - Put on clean gowns, caps, (masks if necessary), overshoes/boots and exam gloves.
  - Personnel in charge of cleaning are required to adhere to all these policies regarding attire in the isolation facility.

- Take all necessary supplies into the isolation facility when entering to minimize traffic.
- Procedures involving highly contaminated sites should be performed last (e.g., rectal temperature, rectal palpation, manipulation of abscesses, etc.)

- Finalizing care for an animal patient in isolation:
  - Avoid dispersing organic (fecal) material throughout the room.
  - Appropriately dispose of sharps in a designated sharps container.
  - Clean and disinfect thermometer, stethoscope, and other materials by wiping with disinfectant, and place all material in the animal patient dedicated box.
  - Remove gloves and re-glove. Use clean gloves to complete flow sheets and process samples.
  - Leave for the preparation room to change to prepare for caring for the next animal patient.
- Exiting the isolation facility:
  - Clean the examination table and all other contaminated surfaces and disinfect them.
  - Remove the gown and other clothing and put them in the washing machine.
  - If there are hospitalized animal patients, once daily, clean doorknobs with disinfectants.
  - Discard cap, gloves and overshoes in the preparation room.
  - Place shoes in the footbath before leaving the preparation room.
  - Wash hands thoroughly with soap and water or decontaminate with alcohol-based hand sanitizer.

5.7.1.3.6. PROCEDURES FOR MOVING COMPANION ANIMAL PATIENTS INTO THE ISOLATION FACILITY

- If the isolation facility has not been cleaned from previous use and responsible personnel cannot be contacted to disinfect and prepare the room (or facility), contaminated counters, equipment, and cages must be cleaned and disinfected by students, technicians or staff before the new animal patient is admitted.
- Soiled laundry and garbage from the previous animal patient must be disposed of in the designated medical waste bins.
- Technicians in charge of cleaning can also be consulted to clarify questions about the cleaning status of rooms or about procedures.
- Place a clean, clear dustbin.
- When supplies in the preparation room are lacking, inform faculty staff.
- Set up shoe cover. See the general section of the Biosecurity SOP for directions on preparing a shoe cover.
- When possible, animal patients to be housed in the isolation facility at the time of admission should be transported directly to the Small Animal Isolation Facility in the owner's means of transport, or a gurney or in a cage, rather than being carried or walked.
- All personnel and students handling the animal patient must use appropriate attire and barrier nursing precautions.
- Hospitalization areas in the small animal hospital that are to be moved to the isolation facility should be walked on a path that exposes them to the least number of other animals.
- Record the animal's name and the suspected infectious agent on the animal patient board of the isolation area.

- Use the Small Animal Isolation checklists to document those procedures that have been completed as required.
- The primary clinician caring for the animal patient is responsible for ensuring that personnel and students are appropriately notified about the admission of animal patients to the Small Animal Isolation Facility:
  - Responsible technicians must be notified immediately when an animal is placed in the isolation facility. This notification must include information about the name of the suspected disease agent(s) and zoonotic potential.
  - An e-mail must also be sent to biosecurity personnel that an animal has been admitted to the Small Animal Isolation Facility including information about the suspected disease agent(s).
- To-minimize the number of personnel and students handling cases in isolation, the primary clinician, intern and student should be prepared to perform all physical examinations and treatments themselves. If necessary, the primary clinician may assign additional students and staff to help.
- Leave all equipment and supplies in the main hospital, other than medications, records, and the animal patient dedicated box.
- It is critical to clean and disinfect surfaces if fecal material or bodily fluids contaminate surfaces during the process of moving animals.
- If the animal patient comes from the main hospital, personnel will place a "DO NOT USE, Special Cleaning required" sign on the cage in the main hospital and note the suspect or known agent on the cage.
- Personnel and students responsible for the case will ensure that the cage has been "broken down", empty fluid bags have been discarded, (etc.) and all equipment has been placed in a labeled bag so that this equipment can be properly disinfected.

5.7.1.3.7. CLEANING AND FEEDING IN THE SMALL ANIMAL ISOLATION FACILITY

- All personnel and students are responsible for assisting with the cleaning and maintenance of the isolation facility. Everyone should help clean when it is noticed that something needs to be done.
- Disposable materials are placed in medical waste dustbins. Any garbage except medical waste should be double-sealed and disposed of as burnable materials.
- Food and water do not leave the isolation facility. All unconsumed water must be discarded in the sink and all unconsumed food should be thrown away in the medical waste bins.
- Personnel in charge of cleaning will clean cages once daily when there are hospitalized animal patients.
- Additional cleaning should be done throughout the day by other personnel.
- Students assigned to cases are responsible for routine cleaning of the preparation room, and the cleaning of cage walls and floors if contaminated, under the supervision of personnel.
- Personnel and students are responsible for feeding animal patients housed in the isolation facility.
- Technicians are responsible for overseeing cleaning and disinfection, and stocking of the isolation area.

5.7.1.3.8. PROCEDURES FOR ANIMAL PATIENTS LEAVING ISOLATION

(For discharge, diagnostic procedures or walking)

- The discharge status of the animal patient should be marked on the animal patient board to alert personnel in charge of cleaning to disinfect the room.
- Whenever possible try to discharge isolation animal patients before 4:30 pm Monday through Friday, so that technicians can help with the breakdown of the room.
- From 8:30 a.m. to 4:30 p.m. Monday through Friday, contact technicians to enlist their help in breaking down the room and to ensure it is done properly.
- Personnel moving the animal patient are required to wear a new set of appropriate attire and barrier precautions.
- Personnel handling the animal patient should avoid contaminating doors, gates, etc. with contaminated gloves or hands in the process of moving animal patients.
- Animal patients moving from the isolation facility should have no contact with other animal patients, clients, students, and other personnel.
- Diagnostic and therapeutic procedures that must be performed in the main hospital on the isolation animal patients should be scheduled for the end of the day, and all surfaces and floors that are potentially contaminated must be promptly cleaned and disinfected to minimize the likelihood of nosocomial transmission.
- Personnel must ensure that instructions given to clients adequately address the infectious disease hazards associated with the animal patient (to other animals and ~~to~~ humans) and appropriately provide suggestions for mitigating risks to people and animals.

5.7.1.3.9. BREAKDOWN OF THE ISOLATION AREA BEFORE DISINFECTION

- Contact personnel in charge of cleaning immediately upon discharge and breakdown so that the personnel can clean and disinfect the facility before another animal patient is admitted.
- The primary clinician, technician and student on the case are responsible for the following breakdown procedures of the room so that personnel in charge of cleaning can fully clean and disinfect the room. The room will not be disinfected unless the personnel is notified of the specific agent that was known or suspected to be associated with the case.
  - Throw away all disposables in dustbins. Use designated medical waste containers for the disposable sharps.
  - For suspected/confirmed infectious cases (class 4), throw away all disposables in the medical waste bins. Any garbage except medical waste should be double-sealed and disposed of as burnable materials.
  - Seal all dustbins and containers and leave them in the isolation facility to be removed by personnel in charge of cleaning.
  - Clean all tables and counters with disinfectants (see general biosecurity SOP for instructions regarding appropriate disinfection procedures).
  - Clean and disinfect all bowls.
  - Disinfect all medical equipment and put them back on an appropriate shelve in the preparation room.
  - Fluid Pump: throw plastic away and spray disinfectant and wipe down the fluid pump.

- Nebulizer: Empty water out of the nebulizer, spray disinfectant and wipe it down. Soak the materials of the nebulizer in the sink with disinfectants. Rinse everything off, wipe dry, put the unit back together and hang the tubing on the wall.

- If another animal patient is admitted before the personnel in charge of cleaning can disinfect the facility, it must be disinfected by the student, primary clinician and technician.

5.7.1.3.10. REQUIRED DIAGNOSTIC TESTING IN ANIMAL PATIENTS WITH SUSPECTED INFECTIONS

- Diagnostic testing to detect certain infectious and/or zoonotic agents provides essential information for the appropriate clinical management of infected animal patients. This testing provides direct benefit to the animal patient in addition to benefiting clients by allowing them to appropriately manage their other animals and protect their families. It also benefits the hospital as this information is essential for the appropriate management of disease risk for all animal patients, personnel and students.
- It is therefore mandatory for all hospitalized animal patients to undergo diagnostic testing if infection with specific contagious or zoonotic agents is a reasonable consideration. This diagnostic testing is considered essential to case management in the hospital and therefore is carried out and billed to the client.
- It is the responsibility of the clinician responsible for animal patient's care to ensure that appropriate samples are submitted for this testing and that appropriate biosecurity precautions are taken with these animal patients.
- Biosecurity personnel should be notified as soon as reasonably possible that there is a reasonable index of suspicion that a hospitalized animal patient may be infected with one of the agents.

5.7.1.3.11. BIOLOGICAL SPECIMENS FROM SUSPECTED/CONFIRMED CONTAGIOUS ANIMAL PATIENTS

- Biological samples should be handled with the same barrier nursing care as the animal patient itself (gowns, gloves, masks, etc.).
- All biological specimens from class 4 animals should be stored in a sealed plastic bag, and the suspected infectious disease should be stated on the outside of the plastic bag.
- Care should be taken when placing specimens in bags to prevent contamination of the outside of containers of biological samples. Suspected conditions or disease agents should be clearly identified on all submission forms.

5.7.1.3.12. REDUCING BIOSECURITY PRECAUTIONS FOR AN ANIMAL PATIENT HOUSED IN THE ISOLATION FACILITY

- Only biosecurity personnel or the Hospital Director can permit them to amend precautionary requirements or reduce the rigor of biosecurity precautions for animal patients that have an increased risk of contagious disease.
- In general, these decisions will be based on the suspected disease agent, method of transmission, likelihood of persistent shedding or infection, likelihood of exposure to other contagious agents while housed in isolation, etc.

5.7.1.3.13. MOVEMENT OF HIGH-RISK ANIMAL PATIENTS

- Class 4 animal patients requiring isolation should ideally be transported directly to the Small Animal Isolation Facility.
- If animal patients are moved from the main hospital to the isolation facility, they should be moved by a route that minimizes exposure of other animal patients and contamination of the facility.
- Personnel handling animal patients while being moved should use barrier nursing precautions.
- Any areas or equipment contaminated with infectious material during transit should be immediately cleaned and disinfected.
- All movements should be kept to a strict minimum, and if possible, on a gurney or in a cage, rather than being carried while wearing a specific gown, gloves etc.
- All waste and excrement produced should be eliminated as soon as possible and all contaminated surfaces should be cleaned, disinfected and dried as soon as possible.
- When it's necessary to transfer the high-risk animals, low-traffic areas should be preferred and should occur late in the day, after transferring all other animals.

5.7.1.3.14. USE OF ULTRASONOGRAPHY AND OTHER MEDICAL DEVICES IN CLASS 4 ANIMAL PATIENTS

- Personnel from relevant services must wear appropriate clothing and barrier precautions when handling class 4 animal patients exiting from the isolation facility.
- Clean any gross contamination from all material before disinfection.
- After performing an EKG, personnel must clean and disinfect the electrode lead with a gauze sponge soaked in disinfectant (chlorhexidine or alcohol), paying particular attention to cleaning and disinfecting the clips and wires that have touched the animal patient.
- After performing endoscopy, a technician will clean and disinfect the endoscope, light source, etc. according to the recommended procedure attached to the endoscope.
- When an X-ray cassette is used tightly sticking, it should be placed inside a plastic bag before use.

5.7.1.3.15. SURGERY/ANESTHESIA IN COMPANION ANIMAL ISOLATION ANIMAL PATIENTS

- Personnel must wear appropriate clothing and barrier precautions when handling class 4 animal patients exiting from the isolation facility.
- Clean any gross contamination from all material before disinfection.
- After surgery, personnel must clean and disinfect all materials and place them in a sealed plastic bag identifying the suspected infectious agent before returning the material to the sterilization room.
- All surfaces should be cleaned and disinfected carefully, and no other animal patient can enter the room until this has been completed.
- Surgeries for class 3 or 4 animal patients should be postponed until the end of the day if possible.
- A sign should be left for personnel in charge of cleaning indicating the suspected infectious agent and the advised disinfection protocol.

5.7.2. REDUCING BIOSECURITY PRECAUTIONS FOR A CLASS 3 OR CLASS 4 ANIMAL PATIENT

- Only biosecurity personnel or the Hospital Director can give permission to amend precautionary requirements or reduce the rigor of biosecurity precautions for animal patients that have an increased risk of contagious disease.
- Only biosecurity personnel or the Hospital Director can give permission to move animal patients from the isolation facility to other areas in the hospital.
- In general, these decisions will be based on the suspected disease agent, method of transmission, likelihood of persistent shedding or infection, likelihood of exposure to other contagious agents while housed in the isolation facility, etc.

5.7.3. DISEASE DIFFERENTIALS FOR WHICH TESTING IS MANDATORY IN COMPANION ANIMAL PATIENTS

- Testing appropriate samples is mandatory if the specified disease or condition is a reasonable differential. A full description of testing, management, diagnosis, and potential treatment information is available at the WOAH website:
  - Animal diseases data: https://www.woah.org/en/what-we-do/animal-health-and-welfare/animal-diseases/
  - Terrestrial Animal Health Code: https://www.woah.org/en/what-we-do/standards/codes-and-manuals/#ui-id-1
  - Manual of Diagnostic Tests and Vaccines for Terrestrial Animals: https://www.woah.org/en/what-we-do/standards/codes-and-manuals/#ui-id-2

- Special attention must be devoted to the following animal diseases:
  - Acute Diarrhea in Dogs and Cats (*Salmonella*, *Campylobacter*, Parvovirus, *Cryptosporidium*, *Giardia*)
  - Canine Distemper Virus
  - Influenza (canine)
  - Leptospirosis
  - Parvovirus
  - Rabies

5.7.4. MANAGEMENT OF ANIMAL PATIENTS WITH KNOWN OR SUSPECTED CONTAGIOUS DISEASES OR CONDITIONS

- **Digestive Infection:** Gastrointestinal agents of greatest concern to animal patients as contagious nosocomial hazards in the hospital include Parvoviruses for unvaccinated and naive animals, Panleukopenia, and *Salmonella*.
- **Respiratory Infection:** Respiratory agents of greatest concern as contagious nosocomial hazards in the hospital include Influenza, Canine Distemper, Aspergillosis, Feline infectious rhinotracheitis, etc.
- **Neurologic Disease:** Infectious agents associated with neurologic disease that are of greatest concern as contagious nosocomial hazards in the hospital include Rabies Virus and Canine Distemper Virus.

5.7.5. MANAGEMENT OF ANIMAL PATIENTS INFECTED OR COLONIZED WITH RESISTANT BACTERIA

- Animal patients infected with bacteria resistant to important antimicrobial drugs or to multiple drug classes represent a potential health hazard to personnel, students, clients, and to other animal patients. As such, they are managed with increased biosecurity precautions intended to discourage dissemination in FVM (class 3).

5.8. COMPANION ANIMAL SURGERY AND ANESTHESIA

5.8.1. ATTIRE FOR THE "CLEAN" AREAS OF THE SMALL ANIMAL SURGICAL FACILITY

(Refer to the FVM Dress Code)

- Clean surgical scrubs, head covers, designated footwear for the area, and masks are required for entry into designated "clean" areas of the surgical facility (including scrub rooms and surgical theatres) that are identified by floor lines.
- Surgical scrubs are to be worn only in the FVM; scrubs are not to be worn out of the FVM building.
- Outside of designated "clean" areas of the surgical facility, all personnel and students should wear some type of clean outer garment over scrubs (e.g., white coat, smock, or coveralls). Personnel and students must also change the designated footwear when exiting "clean" surgical areas.
- All students and personnel, including cleaning and maintenance personnel, are required to adhere to all relevant policies regarding attire in the surgical facility.

For class 3 and class 4 dogs and cats:

- The set of outerwear dedicated to the animal patient in the hospitalization area (at the cage for class 3 animals, in the preparation room for class 4 animals) should be worn during the animals' transport to the clean area.
- A dedicated set of outerwear, different from the set dedicated to the animal patient in the hospitalization area, should be worn in the "clean" areas of the surgical facility.
- After the procedure, this final set can join the animal to its cage when in clean condition.

5.8.2. HYGIENE FOR PERIOPERATIVE MANAGEMENT OF COMPANION ANIMAL PATIENTS

- High standards of cleanliness and hygiene must be maintained throughout the surgical facility.
- The Surgical team and animal patient's surgery site must be aseptically prepared. An aseptic technique must be maintained in surgery.
- Nonessential personnel and students are always prohibited.
- The movement of anesthesia students and personnel between the anesthesia preparation area, surgery theatre and the hospital will be kept to a minimum.

For class 3 and class 4 dogs and cats:

- As far as possible, clipping and surgical preparation should be performed in the cage of the animal (class 3) or on the examination table in the isolation facility (class 4). This way a brief surgical preparation can finally be performed in the clean area of the surgical department.
- All waste products suspected of potential infection should be immediately disposed of the medical waste bins, and all surfaces should be immediately cleaned, disinfected and dried.

5.8.3. GUIDELINES FOR PERIOPERATIVE MANAGEMENT OF COMPANION ANIMAL PATIENTS

- Perioperative management of animal patients can greatly influence the likelihood of incisional or other nosocomial infections. As such, basic management procedures should always emphasize the use of barrier nursing precautions and maximizing separation between animal patients. Standards for personal, animal patient, and environmental hygiene in the surgical and perioperative areas should be among the highest in the hospital.
- Hands must be washed or hand sanitizer used between all animal-patient contacts. Hands should also be washed after animal-patient contact to prevent contamination of hand-contact surfaces (e.g., doors, countertops, equipment, etc.). An alternative is to use exam gloves as a barrier nursing precaution and to discard gloves after each animal-patient contact.
- Fecal material should be removed immediately from the anesthesia prep area or other areas of the surgical facility. If needed, wipe the floor with a wet towel each animal patient and disinfect it.
- Equipment will be cleaned and disinfected between applications using appropriately diluted chlorhexidine.
- Daily environmental cleaning and disinfection should be carried out rigorously following prescribed protocols.

For class 3 and class 4 dogs and cats:

- The animal should be pre-medicated in its cage (class 3) or the isolation housing area (class 4).
- Transport to anesthesia prep should occur just before induction. Transport cages should be used to minimize hospital contamination.
- A remote induction and prep table should be used.
- All contaminated instruments and equipment must be cleaned and disinfected and placed in a sterilization room.

5.8.4. ANESTHESIA INDUCTION AREA

- Put on a clean scrub and specific shoes for the surgery preparation room.
- Change the shoes to the specific shoes for the surgery preparation room at the surgical hospitalization room, sterilizing washroom, or in front of the elevator, before entering the blue area on the floor in the surgery preparation room. When passing through the blue area in a short time, remove the shoes and walk through with clean sox on.
- All known or suspected contagious diseases should be clearly noted in an anesthetic form.
- Do not clip the surgery site of animal patients before the day that procedures are scheduled. This predisposes to colonization of incisional sites with potentially pathogenic bacteria.
- Unless decided otherwise by the clinician, surgical animal patients will be delivered to the anesthesia prep area one hour before scheduled procedures and placed in the anesthesia preparation area until the time of induction.

- Prepare the IV catheter site aseptically and place the catheter using an aseptic technique.
- After surgery, contaminated outerwear should be placed in plastic bags, marked with the suspected infectious disease agent, and returned to the cleaning room.
- Animal patients shall recover from anesthesia in their ~~own~~ cage whenever possible (own cage for class 3, in the isolation facility for class 4), class 1 and 2 class dogs can also recover in the anesthesia preparation area.
- Animal patient transport tables must be cleaned and disinfected (allowing 15 min contact time with disinfectant), then thoroughly rinsed with water between uses.
- Simple cleaning (cleaning the operation table and vacuuming the floor) in the surgery preparation room should be conducted in every case. When all the procedures are finished, complete cleaning (vacuuming and wiping the whole floor to disinfect with alcohol) should be conducted.
- Pull out the power of the anesthetic instrument and other peripheral equipment.
- Recovery cages must be swept and mopped by students, technicians or interns between cases.
- The oxygen insufflation hose used in recovery must be sprayed with chlorhexidine solution (allowing 15 min contact time with disinfectant). The distal end of the tubing must be cleaned of debris with detergent and water, soaked in chlorhexidine solution for at least 15 minutes, and thoroughly rinsed between cases.
- Anesthesia machines must be cleaned and disinfected between cases:
  - Adapters, bellows tubes and reservoir bags should be rinsed thoroughly, soaked in chlorhexidine solution for a minimum of 15 minutes after each use, then thoroughly rinsed and dried before the next use, or gas sterilized depending on the products.
  - Piece adapters should be cleaned with detergent and water, soaked in chlorhexidine solution for at least 15 minutes and rinsed after each use.

5.8.5. OTHER ROUTINE CLEANING AND DISINFECTION PROCEDURES

- Put on the clean scrub or white coat, hat and mask before entering the surgery room.
- The surgery room must be immediately vacuumed, cleaned and disinfected with alcohol.
- Pull out all the powers and put together all the cords.
- Turn off the astral lamp and put it perpendicular to the ceiling after the surgery. Wipe it once a week.
- All contaminated instruments and equipment must be cleaned and disinfected and placed in a plastic bag marked with suspected agents before returning to the sterilization room.
- All individuals contacting the animal must wash their hands carefully and remove contaminated clothing before handling other animals.
- Endotracheal tubes (ET): Standard-size tubes are for single use and should be disposed of as medical waste after use. Special-size tubes should be managed as follows.
  - Clean inside and outside of ET tubes with detergent and water, using a scrub brush.
  - Soak ET tubes in a large barrel of chlorhexidine solution for at least 15 minutes.
  - Thoroughly rinse ET tubes with warm water being careful not to set them down in the sink.
  - Dry ET tubes in the designated dryer.

- Gas sterilizes ET tubes.

- All anesthetic machines and ventilators will be broken down and thoroughly cleaned and disinfected regularly
- Environmental samples will be obtained from the recovery rooms and surgical theatres regularly and cultured for the presence and of pathogenic bacteria and to quantify bacterial counts.

5.8.6. MANAGEMENT OF SURGICAL ANIMAL PATIENTS WITH CONTAGIOUS DISEASES

- It is the clinician's responsibility to notify anesthesia and companion animal surgery about impending surgery on animals with potentially infectious diseases (particularly respiratory, gastrointestinal, and multiple-antibiotic-resistant bacterial infections).
- An operating room with minimal cross-traffic should be selected.
- Surgery on animals with suspected infectious diseases should be avoided when possible. When necessary, surgery will be performed on animals suspected of having contagious diseases at the end of the day to minimize exposure to other animal patients.
- Clinicians and students assigned to surgical cases are responsible for identifying and communicating when animal patients are known or suspected to have contagious diseases.
- After surgery, contaminated outerwear should be placed in plastic bags, marked with the suspected infectious disease agent, and returned to the cleaning room.
- Clinicians and students assigned to these cases are responsible for ensuring that induction and recovery areas have been appropriately identified as being potentially contaminated with contagious pathogens, as well as ensuring that they have been appropriately decontaminated before use with other animal patients.
- If the individual animal patient’s risk status for transmission of contagious diseases is elevated, bathing with chlorhexidine soap, etc. may be required, at the discretion of the surgeon or biosecurity personnel.

5.9. SMALL ANIMAL INTENSIVE CARE UNIT BIOSECURITY

5.9.1. GENERAL MANAGEMENT CONSIDERATIONS FOR SMALL ANIMAL ICU

- Because of the intensive nature of nursing provided in the ICU, it is critical to strictly adhere to barrier nursing and hand hygiene protocols.
- Stethoscopes and thermometers should be cleaned and disinfected frequently to minimize the risk of nosocomial transmission of infectious agents.
- Minimize the number of personnel and students handling cases whenever possible.
- Manage the animal patients who might have or have infectious diseases in the isolation facility.

5.9.2. CLEANING/DISINFECTION AND WASTE

- Conduct cleaning and disinfecting following the procedure of 5.6.3.

5.9.3. ADDITIONAL DISEASE-SPECIFIC INFORMATION

- It is strongly encouraged for all hospitalized animal patients to undergo diagnostic testing if infection with specific contagious or zoonotic agents is a reasonable consideration. Diseases for which testing is strongly encouraged include Canine Distemper Virus, Canine Influenza Virus, Cryptosporidium, Giardia, Leptospirosis, Parvovirus, and Rabies. This diagnostic testing is considered essential to case management in the hospital and therefore, animal patients will have to be designated to category 4 if the owner refuses these tests to be performed. The financial repercussions that the category 4 designation has will be billed to the client. For more information on diagnostic testing, see the website of the WOAH.

- **Feline Leukemia Virus (class 2):**
  - Feline animal patients with suspected or confirmed FeLV infection will be housed away from other cats as much as possible. Signs should be placed on the cage identifying the suspected pathogen.
  - Students and technicians assigned to the case should not handle other sick felines within the ICU.
  - Ideally other feline cases should be handled before handling the FeLV case in case the caseload does not allow segregation of cases.

- **Feline Panleukopenia (class 4):**
  - Feline animal patients with suspected or confirmed feline panleukopenia will be housed in the isolation facility and be placed as far from other feline animal patients as the caseload will allow.
  - There will always be at least one cage between panleukopenia suspects and other cats. Signs should be placed on the cage identifying the suspected pathogen.
  - Students and technicians assigned to the case should not handle other sick felines within the ICU. When the caseload does not permit segregation of cases, other feline cases should be handled before handling the FeLV or panleukopenia case.

- **Canine Parvovirus (class 4):**
  - Dogs less than 1.5 years of age with vomiting, diarrhea, and/or leukopenia will be considered parvovirus suspects until test results are obtained. They will be placed in the isolation facility as prescribed in the general housing rules. Signs should be placed identifying the animal patient as a “parvo suspect”.
  - A diarrhea screening test is strongly recommended to evaluate the cases for possible viral pathogens, parasites, and fecal culture. When the disease is confirmed, the signage should be changed to “Parvo”.
  - When possible, students and technicians assigned to care for parvovirus animal patients will not have contact with other dogs (under 1.5 years).

- **Leptospirosis (class 3):**
  - Animal patients identified as suspected or confirmed Leptospirosis (Class 3) cases should be segregated and isolated within the ICU as prescribed in the general housing rules.

- **Animal patients Carrying Bacteria Resistant to Important Antimicrobial Drugs (class 3):**
  - Biosecurity personnel should be notified ASAP of any animal patients infected with bacteria with resistance patterns of concern to antimicrobial drugs. This includes incisional or catheter-related infections as well as gastrointestinal-related infections.
  - ICU animal patients with multiple-drug-resistant bacteria will be separated as much as possible from other animal patients and discharged when sufficient recovery warrants.
  - All animal patients infected with bacteria with important resistance patterns must be managed with strict barrier nursing precautions.
  - See section 5.7.5 for more information on managing animal patients infected or colonized with resistant bacteria.

5.10. BREAKING TRANSMISSION CYCLES

5.10.1. VISITORS IN THE FVM

- Visiting hours for the Small Animal Hospital are 2:00 pm to 4:00 pm daily. All visitors must check in at the reception desk and wait in the waiting room to be escorted to their animal.
- All visitors must strictly adhere to biosecurity precautions for managing animal patients.
- All visitors should be instructed to thoroughly wash their hands after leaving in-animal patient areas.
- The public is not allowed to tour the in-animal patient areas of the Small Animal Hospital. Special arrangements can be made to provide tours for academic and teaching purposes by contacting biosecurity personnel.

5.10.2. CLIENTS

- Clients must adhere to requirements for appropriate clothing. White coats for visitors are available for clients to wear if requested.
- A student, clinician, or technician should escort clients to a consultation room or exceptionally, after permission by the primary clinician to the animal's cage.
- Clients must adhere to all barrier nursing precautions that apply to their animals to touch the animals or enter the cage.
- Clients may visit their animals but are not allowed to wander in the facility and specifically are not allowed to touch other animal patients or read other animals' treatment cards or treatment orders. Information about other animal patients is confidential, including diagnoses, and should not be divulged.
- Owners or their designated agents may visit hospitalized in-animal patients; non-interested parties are not allowed to visit in-animal patients without express permission from the owners.
- Clients are never allowed to visit animals housed in the isolation facility. With express permission from biosecurity personnel, exceptions to this visitation rule may be granted under extraordinary circumstances, such as when animal patients are to be euthanized.

5.10.3. CHILDREN

- Children are under no circumstances allowed to be left unattended in the hospital. To avoid accidents and to maximally avoid infectious risks, children should always be supervised by an adult.

5.10.4. PETS

- Pets are under no circumstances allowed to contact with other hospitalized pets.

5.11. DECEASED ANIMAL PATIENTS

5.11.1. BREAKDOWN OF ANIMAL PATIENT ENVIRONMENT

- When the animal patient is deceased, the cage should be cleaned, and all records should be collected.
- Cages used to house animal patients of class 1 and 2 should be cleaned and disinfected before a new animal patient enters.
- Cages from class 3 and 4 animal patients should be marked with a sign: “to be disinfected”. No other animal is allowed to enter these cages before cleaning and disinfection, and verification by personnel in charge of cleaning, technician or responsible veterinarian.
- Students, technicians, and clinicians are responsible for breaking down items around cages and ensuring that they are discarded, filed, or cleaned and disinfected (brushes, barrier gowns, etc.).

5.11.2. STORAGE OF ANIMAL PATIENT BODY

- If the animal is deceased or euthanized in its cage, the cadaver should be removed from the cage as soon as possible.
- Deceased class 3 or 4 animals should be stored in a sealed and identified impermeable bag to transport them to the pathological anatomy (necropsy) room or cremation service.

5.11.3. REFERRAL FOR

5.11.3.1. PATHOLOGY

- The cadaver should be taken to the necropsy room as soon as possible.
- During evenings or weekends: the following morning, including Saturday morning, or Monday morning. In the meantime, the cadaver will be stored in the refrigerator at the cremation service.
- The animal will be placed in the refrigerator if a necropsy needs to be performed. The request form for necropsy needs to be present on and taped to the cadaver. On the outside of this request form, it should be mentioned to which class the animal belongs.
- OR in the appropriate collector if the cadaver can be destroyed without necropsy. This occurs when no request form is present. However, it should be mentioned when the case belongs to a class 3 or class 4.

5.11.3.2. CREMATION

- If the owner desires a cremation service for his/her animal
- While waiting for cremation, the cadaver should be stored in the refrigerator at the cremation service.

CHAPTER 6. BIRD, RABBIT, RODENT, POULTRY, EXHIBITING ANIMAL (ZOO AND AQUARIUM) MEDICAL SERVICES BIOSECURITY SOP

6.1. GENERAL CLEANLINESS AND HYGIENE

- Maintaining hospital cleanliness and appropriate personal hygiene are the responsibilities of ALL personnel working in the FVM.
- Hands must be washed or cleaned with an alcohol-based hand sanitizer before and after examining each animal patient.
- Clean exam gloves and a lab coat (or protective clothing if necessary) should be worn when handling high-risk animal patients (i.e. infectious disease suspected), and protection glasses should be worn when handling parrots suspected of Chlamydiosis or when performing necropsies of hare.
- Surfaces or equipment contaminated by feces, secretions, or blood must be cleaned and disinfected immediately by personnel in charge of the animal patient. This is especially important regarding animal patients known or suspected of shedding important infectious disease agents.
- Clean and disinfect all equipment including between animal patients (muzzles, specula, forceps, etc.) using 70% isopropyl alcohol or 0.5% chlorhexidine available in various areas. Clean equipment is sterilized every day in the oven or the sterilizer. Students are expected to carry some of their own equipment (e.g. scissors, clipper blades, thermometers, leash, stethoscope, percussion hammer, penlight and hemostat), and it is critical that these supplies are routinely cleaned and disinfected.
- When fleas or ticks are found on an animal, clinicians must determine the best way to treat the animal.

6.2. GENERAL ATTIRE FOR BIRD, RABBIT, RODENT, POULTRY, EXHIBITING ANIMAL (ZOO AND AQUARIUM) MEDICAL SERVICE

- The FVM promotes the use of medical service-dedicated attire to decrease the risk of spreading infectious agents.
- All personnel and students are required to wear clean professional attire, clean protective outer garments, and clean appropriate footwear always during the medical service.
- This attire should be appropriate to the job at hand. A name card should be present on both types of clothes.
- Footwear: It is recommended that all personnel and students always wear sturdy boots or shoes during the medical service. This type of footwear is easier to clean and disinfect compared to footwear constructed of porous materials (e.g. running shoes).
- Personnel and students must be willing to disinfect footwear while working, which provides a good check regarding suitability. Water-impervious footwear is strongly recommended to limit damage to footwear that will eventually occur after exposure to footbath solutions.

- Students going on exploitation visits should wear their civilian clothes with which they have had no previous contact with domestic or laboratory animals within six days before the visit. They must strictly conform to all the staff's instructions.

6.3. PROPER CLEANING AND DISINFECTION

6.3.1. GENERAL DISINFECTION PROCEDURE

- Gloves and appropriate attire should be worn whenever using disinfectants. Gloves worn for regular animal patient examination (exam gloves) or gloves worn during routine cleaning operations (rubber cleaning gloves) provide adequate protection when using disinfectants.
- Remove all gross contamination before disinfection. Wash the material with water and detergent or soap; scrubbing or mechanical disruption is always needed to break down films and residual debris that prevents or inhibits the disinfection process. Thoroughly rinse the cleaned area to remove any detergent residue. Allow the area to drain or dry as much as possible to prevent dilution of disinfectant solutions.
- This disinfectant should remain in contact with surfaces for 15 minutes, particularly if an infectious agent is suspected. The disinfectant should be rinsed off all surfaces before housing an animal patient in a cage or stall.
- After disinfecting, remove the protective attire and wash your hands. For non-routine disinfection measures (e.g. disinfectant misting), only personnel trained and approved to wear and use the required personal protective equipment will be allowed access to areas being disinfected.
- All multiple-use areas (examination rooms, etc.) where animals are examined or treated, should be ranged, cleaned and disinfected following use by personnel and students responsible for the animal patient irrespective of the infectious disease status of the individual animal.

6.3.2. OTHER PROCEDURE

- The necropsy room and equipment present are cleaned and disinfected once daily. A duration of 10 to 15 minutes of soaking in the solution must be respected. Once cleaned the instruments are sterilized daily in an autoclave. The consultation tables are cleaned with water and alcohol between each animal patient. In case of suspicion of an infectious disease, disinfection with disinfectant is also applied.

6.3.3. DISINFECTANTS

- In case of suspicion of new castle disease (NCD) or avian influenza (AI), all materials will be disinfected by disinfectants agreed upon for control of NCD and/or AI.

6.3.4. FOOTBATHS AND FOOTMATS

- Footbath and foot mat solutions are changed by personnel whenever they are judged to contain excessive amounts of dirt, but they should be changed at least once a week. Foot mats should be moistened by anyone who notices they are dry; this is the responsibility of ALL people working in this area.
- Personnel and students are required to use foot mats appropriately whenever they are encountered.

6.3.5. DISINFECTION PROCEDURE FOR INSTRUMENTS AND EQUIPMENT

- All instruments, equipment or other objects must be cleaned and disinfected or sterilized between uses on different animal patients.
- Materials must be cleaned with detergent and water and disinfected with a 0.5% chlorhexidine solution after use on animal patients.
- Materials for necropsy are sterilized every day. First, they are cleaned and disinfected and after rinsing they are sterilized either in the oven or in the sterilizer according to the materials to be treated.

6.3.6. FOOD AND BEVERAGES

- Food and beverages are strictly forbidden within the hospital. Students can use the FVM cafeteria. It is allowed to eat and drink in the kitchen, the technician's offices and the clinician's offices.

6.4. GUIDELINES FOR RECEIVING AND MANAGING ANIMAL PATIENTS

6.4.1. OUT-ANIMAL PATIENTS

Consultations:

- It is of major importance that the individual booking the appointment reduces as much as possible the risk of introduction into the hospital of animals infected by certain serious infectious diseases. If this procedure has not been respected or if the animal is already present in the hospital, the consultation can be performed following the recommendations hereafter:
  - It is strictly forbidden to enter a room where a consultation is already taking place.
  - It is strictly forbidden to make an animal patient enter a consultation room before cleaning and disinfection of the tables and equipment has been performed by personnel.
- Reception of the client and animal patient
  - Fill the client and consultation sheets in (before manipulation of the animal) including date, details of the owner and of the referring veterinarian if necessary. A complete physical and clinical description of the animal(s) is essential. For exotic animals, the genus and species must be recorded.
  - If a serious infectious and/or contagious condition is suspected, a responsible veterinarian must be immediately informed, and the latter must make adequate decisions.
  - Companion birds must never, whatever the pretext, be taken out of their cage in the absence of a responsible veterinarian.
  - For other animals, if the physical state and/or its level of stress or dangerousness permit it, a complete general clinical examination must be performed. If the previous conditions are not fulfilled, a responsible veterinarian must be called for manipulation and examinations.

Necropsy:

- All animals received for postmortem examinations must be considered as animal patients at high risk of infectious disease. Only students and teaching staff are authorized in the necropsy room. Wearing a white overcoat is compulsory to enter the room. The white overcoats are forbidden in any other area of the hospital.
- General instructions: Students must change in the corridor and wear their white overcoats before entering the necropsy room. Hair must be tied back and sleeves of civilian clothing pulled up to prevent any accidental contamination. A film explaining precisely the basic technique for postmortem examination is projected at the beginning of the practical work. It is strictly forbidden to leave the room without a valid reason between the beginning and end of the hospital. Moreover, it is forbidden to wear the necropsy overcoat in the consultation or hospitalization rooms. At the end of the week, the used overcoats must be put into a plastic bag and ~~be~~ washed immediately in a machine at the highest temperature possible, ideally 95°. It is strictly forbidden to wear these overcoats outside of the hospital beforehand.
- In practice:
  - Depending on the number of cases, students are divided into several groups for postmortem examination. The cadavers and instruments necessary have previously been placed on necropsy plates by staff.
  - Disposable gloves are freely available for the students. Only students performing the necropsy must wear gloves, the other student's role is to take notes and to prevent contamination (see below).
  - The aim is to prevent contamination of the environment or of other necropsies, cleanliness is a major priority. Feathers, hairs and useless waste must immediately be put into the bins intended for biologically contaminated waste.
  - Furthermore, it is strictly forbidden to:
    - Exchange or mix instruments between different necropsies.
    - Contaminate surfaces, for example by manipulating microscopes, taps, sides of necropsy tables, etc., with gloves on.
  - In other words, all students wearing gloves are forbidden to touch anything else than the cadaver and the necropsy instruments.
  - Binary group work aims to allow complementary examinations to be carried out directly and notes to be taken on specific sheets during necropsy.
  - After correction of the necropsies by the staff, the students performing the necropsy are responsible for correct sampling for the complementary examinations.
  - The students present in the necropsy room are also responsible for coprology examinations of clinical cases.

6.4.2. IN-ANIMAL PATIENTS

6.4.2.1. CAGE/STALL ASSIGNMENTS

- Cages for housing in-animal patients are assigned by responsible personnel. Other personnel and students on day or night duty should check to find out where to put newly admitted in-animal patients before putting the animal into a cage.

6.4.2.2. ANIMAL PATIENT RECORDS AND MEDICATIONS

- All clinical data and medication administered during hospitalization must be recorded on specific standardized sheets.

6.4.2.3. FEED AND WATER

- Only minimal amounts of bedding, forage, and concentrating feeds are to be stored in the Hospital to decrease the likelihood of contamination.

6.4.2.4. BEDDING

- The students responsible for the in-animal patients are expected to maintain the cages in a perfect state of cleanliness daily. The cages are washed and disinfected with appropriate disinfectants. In all cases contaminated matter whether it comes from a certified infectious case or not, is to be disposed of in the bins intended for biological waste.
- The students must change gloves and wash their hands between upkeep procedures of different animals. It is strictly forbidden to share matter and equipment between cages. At the end of hospitalization, the cages will be washed and disinfected following standard procedures before the introduction of new animal patients.

6.4.2.5. DISCHARGE

- Before discharge, clients or their agents must be instructed about infectious disease hazards associated with animal patients and recommendations about control of these hazards on the home premises.
- Cages used to house animal patients with known or suspected contagious agents should be marked with a sign ("Do Not Use, Special Cleaning Required").
- The known or suspected infectious agent must be marked on a white tape marker placed on the door until full disinfection has been done.

6.5. MANAGING ANIMAL PATIENTS WITH SUSPECTED CONTAGIOUS DISEASE

- Suspected respiratory, feather, neurological or gastrointestinal tract infectious disease cases should be triaged in the parking lot before admission when possible.
- Personnel or students' accessories (mobile phones, etc.) must not enter consultation and/or necropsy rooms or animal holdings. Exclusively a pen, overcoat and name badge are allowed. If necessary, these items must be treated with chemical or thermal processing depending on the infection diagnosed, despite the possibility of negative consequences on these items. The hospital can't be held responsible for the following damage.
- It is forbidden to take anything out of the consultation or necropsy room without formal approval from a member of staff.
- Waste must be disposed of following the recommendations of the university: all contaminated waste must be put into designated special bins.
- It is strictly forbidden to take feathers, beaks, skulls or any other element of the animals presented at consultations or necropsies away.
- For certain diseases, specific precautions must be taken:

- NCD/ HPAI (high mortality rate and/or major neurological disorders and /or other alarming clinical signs, etc.) require the assistance of a responsible veterinarian who will take adequate measures; nothing must be taken out of the room, soles of shoes must be disinfected, clothes sterilized and washed and no contact with other birds is allowed for 6 days.
- RHD: avoid contact with animals susceptible to infection until the soles of shoes have been disinfected and clothes sterilized and washed.
- Chlamydophilosis: this disease is very frequent in Psittaciformes. Consultations and examinations of these animals must be performed with gloves and protection glasses except if formal proof that the animal is not infected is available. A mask must be worn in cases of serious suspicion of chlamydophilosis. If a flu-like syndrome develops one to three weeks post-examination of birds suspected of infection, the student must consult his/her doctor (GP) and inform him/her of the possibility of psittacosis. In other doubtful cases, report to a responsible veterinarian who will make adequate decisions.

6.5.1. MOVEMENT OF HIGH-RISK ANIMAL PATIENTS

- Movement of animals suspected of NCD, highly pathogenic avian influenza or ~~of~~ RHD is strictly forbidden. The rooms in which such animal patients have been introduced must be closed until complete cleaning and disinfection.

6.5.2. DIAGNOSTIC AND SURGICAL PROCEDURES ON HIGH-RISK ANIMAL PATIENTS

- Except for taking the legally required samples and euthanasia, any other intervention on animals with NCD or HPAI is strictly forbidden.

6.5.3. REQUIRED DIAGNOSTIC TESTING IN ANIMAL PATIENTS WITH SUSPECTED INFECTIONS

- Any suspicion of infectious disease must be reported to the referring veterinarian or ~~to~~ the owner of the animal. The veterinarian or owner will be informed of the necessity of taking samples to confirm or reject the suspicion.

6.5.4. BIOLOGICAL SPECIMENS FROM SUSPECTED OR CONFIRMED CONTAGIOUS ANIMAL PATIENTS

- Specimens obtained from high-risk animal patients should be correctly labeled with appropriate identification and then placed in a bag.
- Care should be taken when placing specimens in bags to prevent contamination of the outside of the bag.
- Suspected conditions or disease agents should be clearly identified on all submission forms.
- Samples from animals suspected of HPAI or NCD will be processed following the legal recommendations. Samples from animals suspected of infectious disease must be wrapped in such a way as to prevent any form of contamination even in case of rupture of the primary wrapping (container, disinfected plastic bags, etc.).

6.5.5. REDUCING BIOSECURITY PRECAUTIONS FOR AN ANIMAL PATIENT

- Any adaptation of the biosecurity measures will be done according to the specific context and will have to be approved by a responsible clinician.

6.5.6. DISEASE DIFFERENTIALS FOR WHICH TESTING IS MANDATORY IN ANIMAL PATIENTS

- In cases of suspicion of NCD or HPAI, the compulsory samples will be performed and transported to the laboratory of reference following the legal recommendations in an application.

6.5.7. MANAGEMENT OF ANIMAL PATIENTS INFECTED OR COLONIZED WITH RESISTANT BACTERIA

- Animal patients infected with bacteria resistant to important antimicrobial drugs or to multiple drug classes represent a potential health hazard to FVM personnel, students, clients, and to other animal patients. As such, they are managed with increased biosecurity precautions intended to discourage dissemination in the FVM.
- Administration of antibiotic treatment to such animal patients in the absence of a control antibiogram is forbidden. These analyses are performed at the expense of the owner. Administration of quinolones of third generation or of antibiotics intended for human use is forbidden in the absence of a control antibiogram.

6.6. ISOLATION FOR ANIMAL PATIENTS

- Use heated isolation cages when possible.
- When a diagnosis of infectious disease is established, it must be indicated directly on the animal's cage with a specific sheet.
- The presence of visitors is strictly forbidden in proximity to animals in isolation.
- The equipment used for these animals must be kept in a nominative plastic bag situated near the cage. It can never be used for another animal until appropriate cleaning and disinfection (oven or autoclave).
- It is strictly forbidden to enter hospitalization/isolation areas without wearing the overalls situated in the entrance lobby of these respective areas. It is strictly forbidden to wear the latter overalls outside of these areas.
- At the end of a period of hospitalization/isolation, the animals are returned to their owners in the travel cage they arrived in. Beforehand the travel cage must be cleaned and disinfected by the students responsible for the case.

6.6.1. USE OF ULTRASONOGRAPHY, RADIOGRAPHY, OR EKG IN ANIMAL PATIENTS

- Echography, radiology or ECG examinations on animals suspected of infectious disease must be limited to cases in immediate danger of death.

6.7. SURGERY AND ANAESTHESIA

6.7.1. ATTIRE FOR THE "CLEAN" AREAS OF THE SURGICAL FACILITY

- Disposable clothes found at the entrance of this area must be worn by all personnel and students.

6.7.2. HYGIENE FOR PERIOPERATIVE MANAGEMENT OF ANIMAL PATIENTS

- High standards of cleanliness and hygiene must be maintained throughout the surgery facility.
- The Surgical team and animal patient's surgery site must be aseptically prepared. An aseptic technique must be maintained while in surgery.
- Nonessential personnel and students are prohibited at all times, and less than 3 students can be present during surgery at the same time.
- Personnel must wear clean examination gloves before placing IV catheters or examining mucous membranes.

6.7.3. GUIDELINES FOR PERIOPERATIVE MANAGEMENT OF ANIMAL PATIENTS

- Hands must be washed or hand sanitizer used between all animal-patient contacts. Hands should also be washed after animal-patient contact to prevent contamination of hand-contact surfaces (e.g., doors, countertops, equipment, etc.). An alternative is to use exam gloves as a barrier nursing precaution and to discard gloves after each animal-patient contact.
- Clean exam gloves must be worn whenever catheters or endotracheal tubes are being placed.
- Fecal material should be removed immediately from the anesthesia prep area or other areas of the surgical facility. If needed the tables, floor, cages... should be hosed between animal patients and disinfected.
- Equipment such as belly bands, hobbles, mouth syringes, endotracheal tubes, etc., will be cleaned and disinfected between uses using appropriately diluted chlorhexidine.
- Routine environmental cleaning and disinfection should be carried out rigorously following prescribed protocols.

6.7.4. ANAESTHESIA INDUCTION AREA

- Anesthesia request forms should be completed the day before procedures whenever possible. All known or suspected contagious diseases should be clearly noted on the request form.
- No anesthesia will be made on parrots suffering from dyspnea or diarrhea without specific Chlamydophila testing.
- Feathers will never be plucked off or animals will never be shaved without the express authorization from a responsible veterinarian. Plucked feathers and hairs will be put directly into appropriate bins.

6.7.5. POSTOPERATIVE ACTIVITIES

- Animal patients must be put back in their cages as soon as they have recovered from the anesthesia.
- All equipment and anesthesia machines must be cleaned and disinfected as soon as surgical procedures are finished.

6.7.6. MANAGEMENT OF SURGICAL ANIMAL PATIENTS WITH CONTAGIOUS DISEASES

- With the exception of emergency surgical procedures aimed to save an animal patient's life, no surgical procedure will be done on an animal patient known to suffer from contagious diseases before a final diagnosis is done.
- According to this diagnosis, surgical decisions will be made at the discretion of a responsible veterinarian. Appropriate and strict decontamination measures must be taken after surgery.

6.8. AMBULATORY

- Students going on visits to hospitalization facilities for birds, rodents, or rabbits should wear their civilian clothes with which they have had no previous contact with birds, rodents or rabbits within six days prior to the visit.
- They must strictly conform to all the veterinarian's instructions. All the attire necessary for the visit is provided by the hospital.
- The same standard of hygiene and work quality (hand washing...) must be applied.

6.9. BREAKING TRANSMISSION CYCLES

6.9.1. VISITORS IN THE HOSPITALIZATION FACILITIES FOR BIRDS, RODENTS AND RABBITS

- Visitors are only allowed under the direct control of a responsible veterinarian.

6.9.2. CHILDREN'S CONTACT

- With the exception of children's pet owners who may stay close to their animals under the supervision of an adult, children in hospitalization facilities for birds, rodents and rabbits are forbidden.

6.9.3. PETS

- Any contact with pets with animal patients in the hospitalization facilities for birds, rodents and rabbits is forbidden, without exception.

CHAPTER 7. LARGE ANIMAL VETERINARY CLINICAL TRAINING CENTER BIOSECURITY SOP

A: FARM ANIMAL HOSPITALIZATION AND TREATMENT FACILITIES

7.1. TREATMENT SPACE AND STALLS (NO.1 - 4)

7.1.1. GENERAL ATTIRE

7.1.1.1. FOOTWEAR

- Washable boots are required for all personnel and students in all in-animal patient care areas. They are recommended to be heavy and sturdy to protect feet from crush injuries.
- Personnel and students wearing inappropriate boots will be asked to leave the service until they can return with proper boots.
- Personnel and students must be willing to disinfect footwear while working, which provides a good check regarding suitability (are you willing to fully immerse them in a footbath?).
- Rubber boots should be cleaned and disinfected regularly, and whenever they become soiled or contaminated. A disinfection system is installed to scrub, clean and disinfect the boots without using the hands.
- Personnel in charge of cleaning may wear specific sturdy washable work shoes when not in contact with the animals or their excrement.

7.1.1.2. OUTERWEAR

- Clean coveralls or medical clothes are compulsory to be worn by all personnel and students to minimize the risk of inadvertent transmission of infectious agents to people or animals outside of the FVM.
- Outerwear should be changed daily and changed or cleaned more frequently if they become noticeably contaminated.
- Personnel and students should wash their ~~own~~ outerwear responsibly. A higher temperature as possible is recommended.

7.1.2. GENERAL CLEANLINESS AND HYGIENE

- People entering the Large Animal Veterinary Clinical Training Center should use the entrance of the east side.
- Hands must be washed or cleaned with an alcohol-based hand sanitizer before and after examining each animal patient (see Chapter 1 for the hand-washing protocol).
- Clean exam gloves should be worn when handling high-risk animal patients (i.e. infectious disease suspects or neonates) or when handling excretions, secretions or wounds.
- Surfaces or equipment contaminated by feces, secretions, or blood must be cleaned and disinfected immediately by personnel and students handling the animal patient. Cleanliness is the responsibility of ALL people involved in the farm animal medical service.

- Personnel and students are required to use all disinfectant footbaths and foot mats that are encountered. Personnel and students are expected to fully immerse footwear in footbaths. Footwear should be scrubbed with a brush to remove organic debris if necessary.
- All equipment or objects for medical care must be sterilized or disinfected with 0.5% chlorhexidine before and after use on any animal patient.
- Equipment wheels or sides soiled with feces must be cleaned and disinfected before entering or leaving the facility or moving to another area of the facility.
- The room should be kept clean including the table, countertops and floors.
- Rectal thermometers, stethoscopes, hemostats, and scissors must be cleaned and disinfected between animal patients using 70% isopropyl alcohol or 0.5% chlorhexidine.

7.1.2.1. CLEANING OF FACILITIES

- It is of major importance for basic hygiene and for reducing the infection pressure that the animal patients are housed in proper stalls.
- Before a new animal patient enters a stall, feces or dirty bedding should be removed and the stall should be disinfected with disinfectants.
- Personnel in charge of cleaning cleans the stalls and the treatment space twice a day. In addition, in the case a stall is dirty outside the specified working hours, feces and wet bedding should be removed where necessary.
- In the case of neonates, animal patient hygiene is of extreme importance and thus as soon as a pile of feces or wet bedding is present this should be removed from the stall by experimenters/caretakers.

7.1.2.1.1. CLEANING PROTOCOL

- When an animal is discharged, the stall should be cleaned as soon as possible.
  - If it concerns an animal with a contagious disease, the stall should be marked by the intern or clinician "to be disinfected". The stall should be emptied, cleaned and disinfected as soon as possible but after cleaning the non-contagious stalls (see disinfection protocol). The stall is considered a contagious area until disinfected and thus no new case should enter before it has been cleaned and disinfected.
  - Stalls used by animals with non-contagious disease are emptied, cleaned and disinfected in between use by different animals. The stall should be cleaned in between use by different animals, but the frequency of disinfection is dependent on the case turnover; this is not necessary after each animal, but as frequent as possible.
- Water buckets or automatic drinkers need to be properly and regularly cleaned and cleaned and disinfected in between use by different animals. When an animal enters a stall, the automatic drinker should be checked to work correctly, and it should be checked if the animal knows how to drink from automatic drinkers. If the animal drinks from a bucket, the presence of water in the bucket should regularly be checked and filled with fresh water.
- Managers need to be properly and regularly cleaned and cleaned and disinfected in between use by different animals. If an animal has not eaten its feed, this should be reported to the clinician and the feed should be removed from the manger.

- Animals should be kept as clean as possible: regularly be brushed.
- The environment around the stalls should be clean, tidy and neat. This means without medications or materials lying around, and no bedding outside the stable or box. An effort is expected from all personnel and students to arrange material once it has been used and not to leave it for someone else.
- If animals defecate outside their stalls (whether inside or outside a building), their feces need to be removed immediately after defecation. If animal patients urinate inside (but not outside a building), the urine needs to be removed, and the floor cleaned and dried.

7.1.2.2. GENERAL DISINFECTION PROTOCOL

- Gloves and appropriate attire should be worn whenever using disinfectants. Use gloves worn for regular animal patient examination (exam gloves) or gloves worn during routine cleaning operations (rubber cleaning gloves). Additional personal protective equipment (mask, face shields, goggles, impervious clothing, boots) should be worn when there is a probability of splashes from the disinfection process resulting in contact that is not merely incidental.
- Remove all bedding and feces before disinfection. The presence of gross contamination will inactivate most disinfectants. If a hose is used to de-bulk material, care must be taken to minimize aerosolization and further spread of potentially infectious agents.
- Wash the affected stall, including walls, doors, automatic water drinker and manger, with water and detergent or soap; scrubbing or mechanical disruption is always needed to break down films and residual debris that prevents or inhibits the disinfection process.
- Thoroughly rinse the cleaned area to remove any detergent residue. Note: Disinfectant may be inactivated by detergents or soap; therefore, it is very important to rinse well after washing the area.
- Allow the area to drain or dry as much as possible to prevent dilution of disinfectant solutions.
- Wet the affected stall, including walls, doors, automatic water drinker and manger, thoroughly with appropriately diluted disinfectant. This disinfectant should remain in contact with surfaces for 15 minutes, particularly if an infectious agent is suspected.
- Remove excess disinfectant with water. The disinfectant should be rinsed off all surfaces before housing an animal patient in a stall.
- After disinfecting, remove the protective attire and wash your hands.
- All multiple-use areas (e.g., stocks and examination rooms) where animals are examined or treated, should be ranged, cleaned and disinfected following use by personnel and students responsible for the animal patient in respective of the infectious disease status of the individual animal.

7.1.2.3. FOOTBATHS AND FOOT MATS

- Footbath and foot mat solutions are changed every morning by responsible personnel or interns.
- Footbaths and foot mats should be changed whenever they are judged to contain excessive amounts of bedding or dirt.
- Footbaths and foot mats should be refilled by anyone who notices they are dry or low on volume; this is the responsibility of ALL people working in this area (faculty members, students, technicians, interns and clinicians).

- Personnel and students are required to use footbaths or foot mats appropriately whenever they are encountered. Footbaths require full immersion of feet.

7.1.2.4. DISINFECTION PROTOCOL FOR INSTRUMENTS AND EQUIPMENT

- All instruments, equipment or other objects for medical service must be cleaned and sterilized or disinfected between uses on different animal patients.
- Materials that are sterilized between uses (instruments and equipment such as surgical instruments) must be cleaned with detergent and water and disinfected with a 0.5% chlorhexidine solution after use on animal patients. The equipment should then be returned for sterilization.
- **Stethoscopes:**
  - Stethoscopes owned by personnel may be used on animals in the non-contagious areas but must be regularly disinfected with alcohol or hand sanitizer solutions (at the beginning and at the end of the day are recommended).
  - Immediate cleaning and disinfection are required when stethoscopes are visibly soiled or after examination of an animal patient with a suspected infectious disease (class 3 or 4).
- **Thermometers:**
  - Glass thermometers are not to be used in the FVM in order to decrease risks associated with broken thermometers and mercury exposures. Electronic thermometers are used instead. Electronic thermometers should be thoroughly disinfected daily using alcohol and/or chlorhexidine wipes.
  - Multi-use thermometers should never be used on animal patients who have a high risk of enteric disease caused by contagious pathogens (e.g., BVD or salmonellosis).
  - Immediate cleaning and disinfection is required when thermometers are visibly soiled or after examination of an animal patient with a suspected high-risk contagious disease (class 3 and 4).
- Other instruments and equipment owned by personnel (e.g., hemostats, scissors, etc.) may be carried and used on multiple animal patients, but they must be cleaned and disinfected between animal patients using 70% isopropyl alcohol or 0.5% chlorhexidine available in various areas.
- Personnel or students walking animals are responsible for cleaning any fecal material from the ground.
- The treatment room, hall, records rooms, and the different offices must be always kept clean and neat, including tabletops, countertops, and floors. Backpacks, etc. should be stored in lockers. Do not store extra clothing, backpacks, etc. in the breezeway or other areas.

7.1.2.5. FOOD AND BEVERAGES

- No food or beverage is permitted in the Large Animal Veterinary Clinical Training Center.
- No food or beverage is allowed at any of the computer stations unless the computer is turned off and covered. Food and beverages should be sealed in non-spill containers and ~~be~~ stored in lockers.
- Do Not Leave Food Out at Any Time.

7.1.3 GUIDELINES FOR RECEIVING AND MANAGING FARM ANIMAL PATIENTS

7.1.3.1. OUT-ANIMAL PATIENTS

Out-animal patient receiving:

- Farm animals without signs of notifiable diseases should be unloaded in the parking space on the south side of the Large Animal Veterinary Clinical Training Center.
- Trailers should not block access between the hospital building and the road.
- Trailers can be parked temporarily on the road along the Large Animal Veterinary Clinical Training Center.
- Out-animal patients should never be fed but may be watered using a bucket owned by the FVM. If a bucket owned by the FVM is used, then personnel responsible for the case should clean and disinfect it using appropriately diluted chlorhexidine before and after each use.

7.1.3.2. IN-ANIMAL PATIENTS

Routine management of in-animal patients:

- The clinical staff will assign stalls.
- Any leads or halters that came with the animal should be sent home with the owner.
- A stall card must be prepared and placed on the stall immediately upon occupancy. Include:
  - Client/animal patient information
  - Responsible clinician's name
  - Status relative to known or suspected infection with contagious diseases
  - Feeding instructions
- Fresh water must be provided to each animal patient, except when restriction is ordered by the clinician.
- Feeding instructions should be discussed with the clinician. The feeding of all animal patients is the responsibility of the student in charge of the case unless otherwise indicated.
- The hospital staff or the attending students will clean the stall in the morning and add fresh bedding as needed.
- Put the stall card at the entry of the stall to indicate the animal is gone after it has been discharged from the hospital.

7.1.3.2.1. STALL ASSIGNMENTS

- The clinical staff will assign stalls.
- Animal patients with known or suspected contagious or zoonotic infections (class 3, 4) must be housed in the isolation facility.

7.1.3.2.2. STALL CARDS, TREATMENT ORDERS AND ANIMAL PATIENT CENSUS BOARD

- A stall card must be posted at the time that animal patients are admitted.
- The front of the stall card must list pertinent client and animal patient identification, and the names of clinicians assigned to the case. The type of forage to be fed should also be listed.
- The back of the stall card must list the admitting complaint or tentative diagnosis especially as they pertain to the infectious disease status (this allows personnel in charge of cleaning to better understand the infectious disease hazards and the associated precautions that should be associated with animal patients).

- The diagnoses on the back of the stall card about the infectious disease status must be updated as animal patients' status changes during hospitalization.
- Animal patient information must also be recorded on the animal patient census board. Anticipated discharge date and time should also be noted on the board when this becomes available.
- Treatment orders are posted at the stall doors.
- Stall cards, treatment orders, and the animal patient census board contain confidential animal patient information. As such, visitors should never be allowed to read this information for animals that they do not own.

7.1.3.2.3. FEED AND WATER

- All feed except coarse feed must be stored in plastic containers with tight-fitting covers.
- Only minimal amounts of coarse feed and concentrate feeds are to be stored in the Large Animal Veterinary Clinical Training Center in order to decrease the likelihood of contamination and to decrease the availability of food and hiding places for wildlife.

7.1.3.2.4. BEDDING

- Students, technicians, and clinicians are responsible for bedding stalls and feeding ~~for~~ animal patients as they arrive.
- Occupied stalls are cleaned and re-bedded in the mornings and evenings by personnel in charge as needed.
- If at other times the stalls are noted to be excessively soiled or wet, students, clinicians, and technicians are responsible for cleaning and re-bedding stalls.
- Only minimal amounts of bedding and forage are to be stored in the Large Animal Veterinary Clinical Training Center in order to decrease the likelihood of contamination and to decrease suitable habitat for rodents and birds.

7.1.4. CLEANING PROTOCOLS: Farm Animal Hospitalization and Treatment Facilities

- **Farm Animal Trailer and Parking Area:**
  - The trailer of the FVM is cleaned and disinfected after each transport.
  - The unloading area is cleaned after each loading/unloading, and every time feces, urine or straw strews the soil.
  - The area is cleaned and disinfected weekly by personnel in charge of cleaning.
- **Large Animal Treatment Space:**
  - Areas soiled by feces, discharges, urine or blood must be cleaned and disinfected by attending personnel and students immediately.
  - Cleanliness is ultimately the responsibility of the clinicians on the service.
- **Stalls (No.1 - 4):**
  - Monday through Sunday, personnel in charge on duty cleans stalls in the morning and in the evening and adds fresh bedding as needed.
  - The responsible personnel feeds coarse feed, concentrates and milk, etc. in the morning and ~~in~~ the evening unless otherwise specified on the stall card, and sweeps the hospital paths after the morning feeding.
  - All grains/concentrates are to be stored in plastic containers with lids.

- Equipment wheels or sides soiled with feces must be cleaned and disinfected before entering or leaving the facility or moving to another area of the facility.

7.1.4.1. ROUTINE STALL CLEANING

General principles of cleaning:

- Using more disinfectants does not mean better. Use appropriately diluted disinfectants.
- For disinfectants (especially foam) to be effective, they must be used on CLEAN surfaces.
- Overuse of disinfectants may encourage resistance in microorganisms and may contribute to the formation of biofilms. Biofilm formation occurs in areas of standing water, and where disinfectants are allowed to sit on dirty surfaces.
- Use care when working in high-risk areas - avoid contamination of equipment or other areas (e.g., when cleaning stalls into dumpsters, take care not to drop feces outside of the dumpster).

General cleaning procedures for a vacated animal stall:

- Remove all the bedding into a dumpster.
- Sweep floor to remove small chafes and debris.
- Rinse the floor and walls with a hose to remove gross debris, scrub soiled areas using detergent and a brush.
- Clean the entire stall with water.
- Disinfect the stall with disinfectant.
- Allow to dry.
- Clean and disinfect adjacent aisle-way as above.
- Cleaning tools must be cleaned and disinfected daily (including handles).

Cleaning procedures for occupied stalls:

- Use appropriate clothing (barrier clothing where required).
- Use appropriate dumpsters for the area - care should be taken to avoid dropping manure/straw outside the dumpster.
- Animal patients must not be allowed contact with the dumpsters at any time.
- Clean and disinfect cleaning tools between stalls when required.
- Dumpsters used in the Large Animal Veterinary Clinical Training Center should not be moved into other facilities or vice versa.

Weekly Routines:

- The floors of the feed room for farm animals should be cleaned (i.e. sweep, rinse, scrub/mop using detergent, then rinse again).
- Sinks in aisle ways and the treatment area should be cleaned and disinfected with dilute disinfectant by technicians or staff.

Monthly Routines:

- Areas that are not used daily (i.e. stalls not used for more than one month, tops of walls, areas not used often-scale, wash rack, etc.) should be hosed to prevent accumulation of dust.
- The sweeper should be cleaned and maintained.

Semi-annual Routines:

- All floors should be cleaned and disinfected with disinfectants.

Annual Routines:

- The entire facility should be thoroughly cleaned, scrubbed and disinfected from top to bottom, including all equipment (bug-out).

Other cleaning:

- The tires of any tractor or forklift that enters the Large Animal Veterinary Clinical Training Center must be scrubbed and disinfected with disinfectants before entering and leaving the facility.
- When the forklift is used to take animals to necropsy, it must be thoroughly cleaned and disinfected at the necropsy dock with a professional cleaner with high pressure, etc.
- Storage of feed (hay) and bedding should be minimized, and the feed storage area will be cleaned weekly to avoid rodent infestation.

7.1.4.2. DISCHARGE

- Before-discharge, clients or their agents must be instructed about infectious disease hazards associated with animal patients and recommendations about control of these hazards on the home premises. The anticipated time and date of discharge should be noted on the animal patient census board.
- Personnel in charge of cleaning should be notified as soon as possible if animal patients will be discharged shortly after this time so that unnecessary effort is not expended by cleaning these stalls.
- When an animal patient is discharged, the stall card should be removed from the stall to indicate that the animal is no longer hospitalized.
- Stalls used to house animal patients with known or suspected zoonotic disease agents should be marked with a sign (“Do Not Use, Special Cleaning Required”). The known or suspected infectious agent must be marked on a white tape marker placed on the stall door. Also, biosecurity personnel and responsible staff for cleaning and maintenance should be notified of the stall number and animal patient ID.
- Students, technicians and clinicians are responsible for breaking down items around the stall and ensuring that they are discarded, filed, or cleaned and disinfected (brushes, barrier gowns, paperwork, etc.).

7.1.4.3. TACK

- Tacks (e.g. halters, lopes, etc.) owned by clients are not to be left with animal patients at the FVM.

- The FVM supplies halters and leads for animal patients. FVM-owned tack is stored at the animal patients' stalls when not in use. All tack supplied by the FVM is disinfected between animal patients by soaking in chlorhexidine solution.

7.1.4.4. ROUTINE ENVIRONMENTAL SURVEILLANCE

- Routine environmental surveillance on smooth floors and hand-contact surfaces throughout the hospital will be conducted every 6 months.
- Personnel responsible for the positive area report any positive culture results back to biosecurity personnel as soon as results become available.
- These data are routinely summarized and reported by biosecurity personnel.

7.1.5. CLASSIFICATION OF SUSPECTED/CONFIRMED CONTAGIOUS ANIMALS

7.1.5.1. GENERAL RULES (CLASS l and 2): see Chapter 1.

7.1.5.2. SPECIAL PRECAUTIONS (CLASS 3 and 4)

7.1.5.2.1. MOVEMENT OF HIGH-RISK ANIMAL PATIENTS

- Movements of high-risk animal patients must be restricted as much as possible.
- When it is confirmed that an animal is infected with a contagious disease, the animal should be moved to the isolation facility.
- All ejections must be cleaned directly after their emission.
- Whenever possible, these animal patients will be examined and treated in their ~~own~~ stalls, rather than moving the animal patient to the common exam and treatment areas.
- If the animal patient has diarrhea, one person needs to lead the animal, and another person must follow with a trash bag to catch any fecal matter, and immediately clean/disinfect contaminated areas.

7.1.5.2.2. REQUIRED DIAGNOSTIC TESTING IN ANIMAL PATIENTS WITH SUSPECTED INFECTIONS

- Appropriate samples must be sent as soon as possible to the laboratory.
- Appropriate barrier nursing precautions must always be followed by all personnel and students during diagnostic or other procedures.
- If the animal patient requires diagnostics or other procedures (e.g., radiology, ultrasonography, surgery) that can only be performed in the main hospital facility, these procedures should be performed at the end of the day whenever possible.
- Biosecurity personnel must be consulted before moving any high-risk animal patient for diagnostic or surgical procedures, except when clinicians judge that this movement is immediately necessary for managing the animal's critical health care needs.
- The attending clinician is responsible for notifying appropriate personnel and students of the suspected infectious agent and methods that are prudent for containment (this includes cleaning and disinfection after procedures).

- In general, all barrier nursing precautions that are required in the animal patient housing area will be required whenever handling that animal patient.
- Instruments, equipment, and the environment should be thoroughly cleaned and disinfected after the procedure, regardless of where the procedure is conducted.
- The clinician responsible must ensure that all services assisting with procedures are informed of the known/suspected agent and appropriate clothing barrier precautions.
- Whenever possible, surgery on these animal patients will be performed at the end of the day, when surgery on all other elective animal patients has been completed (emergencies excepted).

7.1.5.2.3. BIOLOGICAL SPECIMENS FROM SUSPECTED OR CONFIRMED CONTAGIOUS ANIMAL PATIENTS

- Specimens obtained from high-risk animal patients should be correctly labeled with appropriate identification and then placed in a bag.
- Care should be taken when placing specimens in bags to prevent contamination of the outside of the bag.
- Suspected conditions or disease agents should be clearly identified on all submission forms.

7.1.5.3. SPECIAL GUIDELINES FOR MANAGING AND CARING FOR ANIMAL PATIENTS WITH SUSPECTED OR CONFIRMED CONTAGIOUS DISEASES

General:

- Strict attention to hygiene and the use of barriers is critical for the appropriate containment of contagious disease agents.
- Before and after examining each animal patient, hands must be washed with soap and water or cleaned with alcohol-based hand sanitizer.
- Surfaces or equipment contaminated by feces, other secretions or blood must be cleaned and disinfected immediately by personnel and students in charge of the animal patient.
- Special care must be taken to prevent contamination of the environment by dirty hands, gloves, or boots.
- Use all footbaths or foot mats encountered.
- Environmental hygiene is the responsibility of all personnel and students. Do not wait for a technician or other personnel to clean. Assist with general cleanup and maintenance whenever possible.
- Personnel and students assigned to contagious animal patient are responsible for routine cleaning. This includes cleaning and disinfecting counters, door handles, and doorknobs, changing footbaths when needed, and emptying trash into the dumpster.

7.1.5.4. DISEASE DIFFERENTIALS FOR WHICH TESTING IS MANDATORY IN FARM ANIMAL PATIENTS

- Testing of appropriate samples is mandatory if the specified disease or condition is a reasonable differential.

- Management of animal patients infected or colonized with resistant bacteria could be considered only in the case of disposal of an operational laboratory for these analyses.

7.1.6. DECEASED ANIMAL PATIENTS

7.1.6.1. BREAKDOWN OF ANIMAL PATIENT ENVIRONMENT

- When an animal patient dies, it must be transported in the shortest possible time to the necropsy room with a forklift. The cadaver should be transported in a watertight closed container as needed.
- If the cadaver is too heavy, the transport will be postponed until the presence of the staff driving the forklift. During this delay, the cadaver will stay in its stall.

7.1.6.2. STORAGE OF ANIMAL PATIENT CORPS

- The animal patient corps will be stored in the refrigerated rooms of the necropsy room as soon as possible.

7.1.6.3. REFERRAL FOR

- Unless otherwise specified, all deceased animal patients of the Large Animal Veterinary Clinical Training Center must be necropsied in the shortest possible time.
- When the Pathology clinic is closed (holidays), necropsies must be achieved by the staff of the Farm animal clinic as soon as possible.

7.1.7. BREAKING TRANSMISSION CYCLES

7.1.7.1. VISITORS/CLIENTS IN THE LARGE ANIMAL VETERINARY CLINICAL TRAINING CENTER

- Visiting hours for the Large Animal Veterinary Clinical Training Center are 9:00 am to 4:30 pm daily.
- All visitors must check in at the reception of the Veterinary Teaching Hospital before entering the Large Animal Veterinary Clinical Training Center.
- All visitors must strictly adhere to Biosecurity Precautions for managing animal patients.
- Clients must adhere to requirements for appropriate clothing. Specifically, for safety, shorts and open-toed shoes are not allowed to be worn in the facility. Coveralls are available for clients to wear if requested.
- A student, clinician, or technician should escort clients to their animal stall.
- Clients must adhere to all barrier nursing requirements that apply to their animals.
- All visitors should be instructed to thoroughly wash their hands after leaving in-animal patient areas.
- Clients may visit their animals but are not allowed to wander in the facility and specifically are not allowed to touch other animal patients or to read stall cards or treatment orders. Information about other animal patients is confidential, including diagnoses, and should not be divulged.
- The public is not allowed to tour in-animal patient areas of the Large Animal Veterinary Clinical Training Center. Special arrangements can be made to provide tours for visiting scientists by contacting biosecurity personnel.

- Owners or their designated agents may visit hospitalized in-animal patients; other interested parties are not allowed to visit in-animal patients without express permission from the owners.

7.1.7.2. CHILDREN IN THE FVM

- Children are strictly forbidden in the Large Animal Veterinary Clinical Training Center if they are not accompanied by their parents or a staff member.

7.1.7.3. PETS IN THE FVM

- Under all circumstances, pets are strictly forbidden in the Large Animal Veterinary Clinical Training Center.

B: FARM ANIMAL DIAGNOSIS AND EXAMINATION FACILITIES

7.2. FARM ANIMAL ENTRANCE/DIAGNOSIS SPACE, X-RAY ROOM, SURGERY ROOM FOR CALVES, CT ROOM, CT PREPARATION ROOM, STORAGE A, STORAGE B, MEDICATION STORAGE B

7.2.1. GENERAL ATTIRE

7.2.1.1. FOOTWEAR

- Washable boots are required for all personnel and students in all animal patient care areas. They are recommended to be heavy and sturdy to protect feet from crush injuries.
- Personnel and students wearing inappropriate boots will be asked to leave the service until they can return with proper boots.
- Personnel and students must be willing to disinfect footwear while working, which provides a good check regarding suitability (are you willing to fully immerse them in a footbath?).
- Rubber boots should be cleaned and disinfected regularly, and whenever they become obviously soiled or contaminated. A disinfection system is installed to scrub, clean and disinfect the boots without using the hands.

7.2.1.2. OUTERWEAR

- Clean coveralls or medical clothes are compulsory to be worn by all personnel and students to minimize the risk of inadvertent transmission of infectious agents to people or animals outside of the FVM.
- Outerwear should be changed daily and changed or cleaned more frequently if they become noticeably contaminated.
- Personnel and students should wash their outerwear responsibly. A higher temperature as possible is recommended.

7.2.2. CLEANING FACILITIES

- All areas are cleaned by personnel in charge of cleaning after use.

7.2.2.1. PROCEDURE

- After an examination is done and the animal leaves the area, the area should be cleaned as soon as possible.

- If it concerns an animal with a contagious disease, the area should be marked by the intern or clinician "to be disinfected".
- Stalls used by animals with non-contagious disease are emptied, cleaned and disinfected in between use by different animals. The stall should be cleaned in between use by different animals, but the frequency of disinfection is dependent on the case turnover; this is not necessary after each animal, but as frequent as possible.

- The environment of the areas should be clean, tidy and neat. This means without medications or materials lying around, and no bedding outside the stalls. An effort is expected from all personnel and students to arrange material once it has been used and not to leave it for someone else.
- If animals defecate outside their stalls (whether inside or outside a building), their feces need to be removed immediately after defecation. If animal patients urinate inside (but not outside a building), the urine needs to be removed, and the floor cleaned and dried.

7.2.2.2. GENERAL DISINFECTION PROTOCOL

- All multiple-use areas where animals are examined or treated should be ranged, cleaned and disinfected following use by personnel and students responsible for the animal patient irrespective of the infectious disease status of the individual animal.
- Gloves and appropriate attire should be worn whenever using disinfectants. Use gloves worn for regular animal patient examination (exam gloves) or gloves worn during routine cleaning operations (rubber cleaning gloves). Additional personal protective equipment (mask, face shields, goggles, impervious clothing, boots) should be worn when there is a probability of splashes from the disinfection process resulting in contact that is not merely incidental.
- Remove all bedding and feces before disinfection. The presence of gross contamination will inactivate most disinfectants. If a hose is used to de-bulk material, care must be taken to minimize aerosolization and further spread of potentially infectious agents.
- Wash the affected area with water and detergent or soap; scrubbing or mechanical disruption is always needed to break down films and residual debris that prevents or inhibits the disinfection process.
- Thoroughly rinse the cleaned area to remove any detergent residue. Note: Disinfectants may be inactivated by detergents or soap; therefore, it is very important to rinse well after washing the area.
- Allow the area to drain or dry as much as possible to prevent dilution of disinfectant solutions.
- Wet the affected areas thoroughly with disinfectants appropriately diluted. This disinfectant should remain in contact with surfaces for 15 minutes, particularly if an infectious agent is suspected.
- Remove excess disinfectant with water. The disinfectant should be rinsed off all surfaces.

7.2.2.3. FOOTBATHS AND FOOTMATS

- Footbaths and foot mats solutions are changed every morning by staff or interns.
- Footbaths and foot mats should be changed whenever they are judged to contain excessive amounts of bedding or dirt.
- Footbaths and foot mats should be refilled by anyone who notices they are dry or low on volume; this is the responsibility of ALL people working in this area (students, technicians, interns and clinicians).

- Personnel and students are required to use footbaths or foot mats appropriately whenever they are encountered. Footbaths require full immersion of feet.

7.2.2.4. DISINFECTION PROTOCOL FOR INSTRUMENTS AND EQUIPMENT

- All instruments, equipment or other objects for medical service must be cleaned and sterilized or disinfected between uses on different animal patients.
- Materials that are sterilized between uses (Instruments and equipment such as surgical instruments) must be cleaned with detergent and water and disinfected with a 0.5% chlorhexidine solution after use on animal patients. The equipment should then be returned for sterilization.
- **Stethoscopes:**
  - Stethoscopes owned by personnel may be used on animals in the non-contagious areas but must be regularly disinfected with alcohol or hand sanitizer solutions (at the beginning and at the end of the day are recommended).
  - Immediate cleaning and disinfection are required when stethoscopes are visibly soiled or after examination of an animal patient with a suspected infectious disease (class 3 or 4).
- **Thermometers:**
  - Glass thermometers are not to be used in the FVM to decrease risks associated with broken thermometers and mercury exposures.
  - Electronic thermometers are used instead. Electronic thermometers should be thoroughly disinfected daily using alcohol and/or chlorhexidine wipes.
  - Multi-use thermometers should never be used on animal patients who have a high risk of enteric disease caused by contagious pathogens (e.g., BVD or salmonellosis).
  - Immediate cleaning and disinfection are required when thermometers are visibly soiled or after examination of an animal patient with a suspected high-risk contagious disease (class 3 and 4).
- Other instruments and equipment owned by personnel (e.g., hemostats, scissors, etc.) may be carried and used on multiple animal patients, but they must be cleaned and disinfected between animal patients using 70% isopropyl alcohol or 0.5% chlorhexidine available in various areas.
- Personnel or student walking animals are responsible for cleaning any fecal material from the ground.
- The treatment room, hall, records rooms, and the different offices must be always kept clean and neat, including tabletops, countertops, and floors. Backpacks, etc. should be stored in lockers. Do not store extra clothing, backpacks, etc. in the breezeway or other areas.

7.2.2.5. FOOD AND BEVERAGES

- No food or beverage is permitted in the Large Animal Veterinary Clinical Training Center.
- Do Not Leave Food Out at Any Time.

7.2.3. GUIDELINES FOR RECEIVING AND MANAGING FARM ANIMAL PATIENTS

7.2.3.1. OUT-ANIMAL PATIENTS

Out-animal patient receiving:

- Farm animals without signs of notifiable diseases should be unloaded in the parking space on the south side of the Large Animal Veterinary Clinical Training Center.
- Trailers should not block access between the building and the road.
- Trailers can be parked temporarily on the road along the Large Animal Veterinary Clinical Training Center.
- Out-animal patients should never be fed but may be watered using a bucket owned by the FVM. If a bucket owned by the FVM is used, then personnel responsible for the case should clean and disinfect it using appropriately diluted chlorhexidine before and after each use.

7.2.3.2. CLEANING PROTOCOLS: Farm Animal Diagnosis and Examination Facilities

- **Trailer and Parking Area:**
  - The trailer of the FVM is cleaned and disinfected after each transport.
  - The unloading area is cleaned after each loading/unloading, and every time feces, urine or straw strews the soil.
  - The area is cleaned and disinfected weekly by personnel in charge of cleaning.
- **Farm Animal Entrance/Diagnosis Space:**
  - The areas soiled by feces, discharges, urine or blood must be cleaned and disinfected by attending personnel and students immediately.
  - Cleanliness is ultimately the responsibility of the clinicians on the service.
- **X-Ray Room and Surgery Room for Calves:**
  - The areas soiled by feces, discharges, urine or blood must be cleaned and disinfected by attending personnel and students immediately.
  - Cleanliness is ultimately the responsibility of the clinicians on the service.
- **CT Room and CT Preparation Room:**
  - The areas soiled by feces, discharges, urine or blood must be cleaned and disinfected by attending personnel and students immediately.
  - Cleanliness is ultimately the responsibility of the clinicians on the service.
- **Storage A, Storage B, Medication Storage B:**

  The storage rooms should be cleaned weekly by the personnel in charge (i.e. sweep, rinse, scrub/mop using detergent, then rinse again). In addition, at other times the rooms are noted to be visibly soiled, cleaning and disinfection should be carried out.

Monthly Routines:

- Areas that are not used daily (i.e. stalls not used for more than one month, tops of walls, areas not often-scale, wash rack, etc.) should be held monthly to prevent accumulation of dust.
- The sweeper should be cleaned and maintained.

Semi-annual Routines:

- All floors should be cleaned and disinfected with disinfectants.
- The entire facilities are thoroughly cleaned, scrubbed and disinfected from top to bottom, including all equipment (bug-out).

Other cleaning:

- The tires of any tractor or forklift that enters the Large Animal Veterinary Clinical Training Center must be scrubbed and disinfected with disinfectants before entering and leaving the facility.
- When the forklift is used to take animals to necropsy, it must be thoroughly cleaned and disinfected at the necropsy dock with a professional cleaner with high pressure, etc.

7.2.4. FARM ANIMAL SURGERY AND ANESTHESIA

7.2.4.1. ATTIRE FOR THE "CLEAN" AREAS OF THE FARM ANIMAL SURGICAL FACILITY

- Clean surgical scrubs are required for entry into designated "clean" areas of the surgical facility, including scrub rooms and surgical theatres.
- Shoe covers or footwear dedicated for use in designated "clean" surgical areas are also required for all personnel and students.
- Surgical scrubs are to be worn ONLY in the FVM and are not to be worn out of the FVM building even when traveling to and from the FVM.
- Outside of designated "clean" areas of the surgical facility, all personnel and students should wear classical attire for the main hospital facilities or a protective gown over the scrubs. Shoe covers must be removed when exiting "clean" surgical areas.
- All students and personnel, including cleaning and maintenance personnel, are required to adhere to all relevant policies regarding attire in the surgical facility.

7.2.4.2. HYGIENE FOR PERIOPERATIVE MANAGEMENT OF FARM ANIMAL PATIENTS

- High standards of cleanliness and hygiene must be maintained throughout the surgical facility.
- The Surgical team and animal patient's surgery site must be aseptically prepared. An aseptic technique must be maintained while in surgery.
- Nonessential personnel or students are always prohibited.
- The movement of anesthesia students and personnel between the anesthesia preparation area and the clean surgical areas will be kept to a minimum.

7.2.4.3. GUIDELINES FOR PERIOPERATIVE MANAGEMENT OF FARM ANIMAL PATIENTS

- Standards for personal, animal patient, and environmental hygiene in the surgical area and perioperative areas (stalls) should be among the highest in the FVM.
- Hands must be washed or hand sanitizer used between all animal-patient contacts. Hands should also be washed after animal-patient contact to prevent contamination of hand-contact surfaces (e.g., doors, countertops, equipment, etc.).

An alternative is to use exam gloves as a barrier nursing precaution and to discard gloves after each animal-patient contact.

- Fecal material should be removed immediately from the surgical facility. If needed the floor should be hosed between animal patients and disinfected with appropriately diluted disinfectants.
- Equipment such as endotracheal tubes will be cleaned and disinfected using appropriately diluted chlorhexidine or sterilized between uses.
- Routine environmental cleaning and disinfection should be carried out rigorously following prescribed protocols.

7.2.4.4. ANESTHESIA INDUCTION AREA

- **Activities conducted before entering the anesthesia induction area:**
  - Do not clip the surgery site of animal patients before the day that procedures are scheduled. This predisposes to colonization of incisional sites with potentially pathogenic bacteria.
  - Animal patients should be thoroughly brushed or bathed before entering the anesthesia induction area.
  - Students assigned to the case should take primary responsibility for ensuring that this is completed.
- **Activities conducted in the anesthesia induction area:**
  - Surgical animal patients will be delivered to the anesthesia preparation area half an hour before scheduled procedures and placed in the anesthesia preparation area until the time of induction.
  - Place the IV catheter using an aseptic technique and maintain the infusion route.

7.2.4.5. POSTOPERATIVE ACTIVITIES

- After emergence from anesthesia, the animal patient should be moved back to the same stall used before surgery as soon as possible. Before moving back, the stall should be thoroughly cleaned and disinfected.
- The animal patient will move back to the stall by walking if possible.
- If the animal patient cannot walk by himself, transport the animal patient using a transport table. The table must be cleaned and disinfected (allowing 15 min contact time), then thoroughly rinsed with water between uses.
- Anesthesia machines must be cleaned and disinfected between cases:
  - Valves and domes will be cleaned with water and dried.
  - Pieces and reservoir bags will be rinsed thoroughly, soaked in chlorhexidine solution for a minimum of 15 minutes after each use, then thoroughly rinsed and dried before the next use.
  - Piece adapters will be cleaned with detergent and water, soaked in chlorhexidine solution (allowing 15 min contact time) and rinsed after each use.

7.2.4.6. OTHER ROUTINE CLEANING AND DISINFECTION PROCEDURES

- All induction, surgery, and recovery areas are thoroughly cleaned and disinfected at night by personnel in charge of cleaning.
- Endotracheal tubes (ET):
  - Clean inside and outside of ET tubes with detergent and water, using a scrub brush.

- Soak ET tubes in a large barrel of chlorhexidine solution for at least 15 minutes.
- Thoroughly rinse ET tubes with warm water being careful not to set them down in the sink.
- Hang ET tubes to dry in a designated cabinet in the anesthesia induction area.
- Gas sterilization must be carried out after drying.

- The mouth gag must be soaked in chlorhexidine solution for 15 minutes after each use, then rinsed and then placed on the rack to dry and prevent corrosion.
- Lead ropes and halters used by anesthesia service will be thoroughly rinsed in clean water before use and scrubbed with detergent and water and soaked in chlorhexidine solution as needed.
- All large animal anesthetic machines and ventilators will be broken down and thoroughly cleaned and disinfected regularly.
- Environmental samples will be obtained from the surgical room regularly and cultured for the presence and of pathogenic bacteria and to quantify bacterial counts.

7.2.4.7. MANAGEMENT OF SURGICAL ANIMAL PATIENTS WITH CONTAGIOUS DISEASES

- Clinicians and students assigned to surgical cases are responsible for identifying and communicating when animal patients are known or suspected of having contagious diseases.
- Procedures on these cases should be scheduled for the end of the day whenever possible.
- Clinicians and students assigned to these cases are responsible for ensuring that the surgical facility has been appropriately identified as being potentially contaminated with contagious pathogens, as well as ensuring that it has been appropriately decontaminated before use with other animal patients.

7.2.5. ROUTINE ENVIRONMENTAL SURVEILLANCE

- Routine environmental surveillance on smooth floors and hand-contact surfaces throughout the hospital will be conducted every 6 months.
- Personnel responsible for the positive area reports any positive culture results back to biosecurity personnel as soon as results become available.
- These data are routinely summarized and reported by biosecurity personnel.

7.2.6. DECEASED ANIMAL PATIENTS

7.2.6.1. BREAKDOWN OF ANIMAL PATIENT ENVIRONMENT

- When an animal patient dies, it must be transported in the shortest possible time to the necropsy room with a forklift. The cadaver should be transported in a watertight closed container as needed.
- If the cadaver is too heavy, the transport will be postponed until the presence of the staff driving the forklift. During this delay, the cadaver will stay in its stall.

7.2.6.2. STORAGE OF ANIMAL PATIENT CORPS

- The animal patient corps will be stored in the refrigerated rooms of the necropsy room as soon as possible.

7.2.6.3. REFERRAL FOR

- Unless otherwise specified, all deceased animal patients of the Large Animal Veterinary Clinical Training Center must be necropsied in the shortest possible time.
- When the Pathology department is closed (holidays), necropsies must be completed by the staff of the Farm Animal department as soon as possible.

7.2.7. BREAKING TRANSMISSION CYCLES

7.2.7.1. VISITORS/CLIENTS IN THE LARGE ANIMAL VETERINARY CLINICAL TRAINING CENTER

- Visiting hours for the Large Animal Veterinary Clinical Training Center are 9:00 am to 4:30 pm daily.
- All visitors must check in at reception before entering the Large Animal Veterinary Clinical Training Center.
- All visitors must strictly adhere to Biosecurity Precautions for managing animal patients.
- Clients must adhere to requirements for appropriate clothing. Specifically, for safety, shorts and open-toed shoes are not allowed to be worn in the facility. Coveralls are available for clients to wear if requested.
- A student, clinician, or technician should escort clients to their animal stall.
- Clients must adhere to all barrier nursing requirements that apply to their animals.
- All visitors should be instructed to thoroughly wash their hands after leaving in-animal patient areas.
- Clients may visit their animals but are not allowed to wander in the facility and specifically are not allowed to touch other animal patients or to read stall cards or treatment orders. Information about other animal patients is confidential, including diagnoses, and should not be divulged.
- The public is not allowed to tour in-animal patient areas of the Large Animal Veterinary Clinical Training Center. Special arrangements can be made to provide tours for visiting scientists by contacting biosecurity personnel.
- Owners or their designated agents may visit hospitalized in-animal patients; other interested parties are not allowed to visit in-animal patients without express permission of the owners.

7.2.7.2. CHILDREN

- Children are strictly forbidden in the Large Animal Veterinary Clinical Training Center if they are not accompanied by their parents or a staff member.

7.2.7.3. PETS

- Under all circumstances, pets are strictly forbidden in the Large Animal Veterinary Clinical Training Center.

C: FARM ANIMAL EXTERNAL CLINICAL TRAINING BIOSECURITY SOP

7.3.1. EXTERNAL FACILITIES AND VEHICLE

- In the external practice, observe the biosecurity manual defined by each facility strictly.

- Personnel and all students who participate in ~~a~~ practice are responsible for clean-up and decontaminating (as appropriate) the vehicle for the external practice using a vacuum cleaner and apparatus for generating ozone gas after the practice.

CHAPTER 8. LARGE ANIMAL ISOLATION FACILITY BIOSECURITY SOP

**Animal patients that should be managed in the Large Animal Isolation Facility are equine, cattle, and small ruminants (sheep and goats) that are classified as class 3 or 4 according to the risk categories in Chapter 1.

8.1 GENERAL ATTIRE FOR THE LARGE ANIMAL ISOLATION FACILITY

The use of isolation facility-dedicated attire is applied to decrease the risk of carrying infectious agents home where people or animals may be exposed.

- Footwear: All personnel and students must wear dedicated boots and be willing to disinfect footwear while working in the Large Animal Isolation Facility.
- Clothes: All personnel and students must wear disposable coveralls or specific clinical clothes.

8.2. FOOD AND BEVERAGES

- Food and beverages are strictly prohibited in the Large Animal Isolation Facility.

8.3. MANAGING ANIMAL PATIENTS WITH SUSPECTED CONTAGIOUS DISEASE

- Special precautions are required when managing animal patients known or suspected of being infected with contagious disease agents. Conditions of special concern because of the potential for nosocomial transmission include animal patients with acute gastrointestinal disorders (e.g. diarrhea), acute respiratory tract infections, acute neurologic diseases, abortions or infections with bacteria that are resistant to multiple antimicrobial drugs.
- Animal patients with elevated contagious disease risk will be managed and isolated from the general hospitalization stalls or discharged as soon as possible.
- Clinicians, interns or students are encouraged to conduct initial physical examinations on these animal patients inside or outside the trailer to evaluate the contagious disease risk.
- Personnel should consider implementing barrier nursing precautions when handling these animal patients until evaluations suggest that the risk of contagious disease transmission is negligible.
- Biosecurity personnel should be notified as soon as possible when animal patients with elevated contagious disease risk (class 3 and 4) are admitted or develop these problems while hospitalized.

8.3.1. CLASSIFICATION OF SUSPECTED/CONFIRMED CONTAGIOUS ANIMALS

- Infectious diseases encountered in hospitalized animals are assigned by the clinician to the following classification levels, based on the transmissibility of the agent to other animals and/or zoonotic potential.

CLASS 1: NORMAL HOUSING -green

- Non-infectious diseases or infectious diseases are caused by agents that have no likelihood of transmission to other animals and no potential for human infection.
- In farm animal and equine medical services, the following conditions/animal patients are included:
  - No fever, no respiratory problem, no history of fever or respiratory problems during the last 6 months
  - Trauma, wounds
  - Pre-et postoperative animal patients, excluding colic animal patients (without contagious complications)
  - Ophthalmologic animal patients
  - Non-contagious neonates
  - And other animals in similar condition

CLASS 2: NORMAL HOUSING -green

- Infectious diseases are caused by agents that have a low level of transmission and may include non-resistant bacterial infections.
- In farm animal and equine medical services, the following conditions/animal patients are included:
  - Wounds infected with non-resistant bacterial infections
  - Bacterial pneumonia, pleuropneumonia without suspicion of contagious bacteria
  - Bacterial corneal ulcers with non-resistant bacterial infections
  - And other animals have similar conditions

CLASS 3: BARRIER NURSING -orange

Subclass A: Resistant bacteria. Infections caused by bacteria with highly resistant antimicrobic susceptibility patterns, as determined by the external Bacteriology laboratory.

Subclass B: Infectious diseases caused by agents with a moderate level of transmission and/or potential human pathogens.

- In farm animal and equine medical services, the following conditions/animal patients are included:
  - Fever and/or leucopenia of unknown origin
  - Viral respiratory diseases: cough, nasal discharge (<2 weeks), possibly accompanied by fever.
  - Diarrhea without fever and/or leucopenia
  - MRSA or other multi-resistant bacterial infections
  - Contagious dermatologic infections: dermatophytosis, dermatophilus congolensis, chorioptes, lice and other parasites

CLASS 4: ISOLATION -red

- Infectious diseases are caused by agents that are considered to have a high level of transmission and/or are extremely serious human pathogens.
- Animal patients with class 4 infectious diseases are housed in the isolation facility. Exceptionally, when the isolation facility is occupied, they can be housed in the general facility; however, the barrier precautions will remain the same as in the isolation facility.
- In farm animal and equine medical services, the following conditions/animal patients are included:
  - Acute diarrhea with leucopenia and/or fever
  - Acute, rapidly deteriorating neurological disease or acute neurological disease accompanied by fever

- Abortion suspected contagious disease
- Diseases with a zoonotic risk (for example): rabies, malleus (*Burkholderia mallei*), brucellosis, anthrax, etc.

- Animals that have been in contact with an animal suffering from a suspected or confirmed contagious disease are considered contagious until proven otherwise or until the incubation time has passed without the animal developing clinical signs. Attention to diseases where the clinical signs of the disease can be subclinical and where the animal still can transmit the disease.

8.3.2. EXCLUSION CRITERIA FOR ENTRY AND/OR HOSPITALIZATION

- In case of animal diseases notifiable in Japan.
- If the risks for other hospitalized animal patients, FVM personnel or students to become infected with the disease are too important compared to the health risk for the animal itself, the animal can be refused to enter the hospital or to be hospitalized.
- Only clinicians (not interns) are allowed to take the decision to refuse an animal.

8.3.3. COMMUNICATION REQUIREMENTS FOR THE ISOLATION FACILITY

- Biosecurity personnel must be notified ASAP whenever animal patients of class 3 or 4 are admitted at the Large Animal Isolation Facility and when they are discharged. This notification can be made in person or by e-mail and should be performed by the veterinarian with primary responsibility for the animal patient.
- Relevant personnel and students must be notified when animal patients with contagious diseases are placed in the isolation facility and when they are discharged or moved.
- Isolation rooms must be visibly labeled with the according class (class 3 or class 4) and the infectious agents of concern, along with the required biosecurity precautions. It is very important to communicate the agent(s) of concern for these animal patients so that all personnel and students can take appropriate precautions to protect against human exposure and to ensure that appropriate cleaning and disinfection procedures are used.
- To optimize identification, animals allocated to class 3 will have orange tape around their halves.

8.3.4. GUIDELINES FOR MANAGING AND CARING FOR ANIMAL PATIENTS WITH SUSPECTED OR CONFIRMED CONTAGIOUS DISEASES

General:

- Strict attention to hygiene and the use of barriers is critical for the appropriate containment of contagious disease agents.
- Before and after examining each animal patient, hands must be washed with soap and water or cleaned with alcohol-based hand sanitizer.
- Surfaces or equipment contaminated by feces, other secretions or blood must be cleaned and disinfected immediately by personnel or students in charge of the animal patient.
- Special care must be taken to prevent contamination of the environment by dirty hands, gloves, or boots.

- Use all footbaths or foot mats encountered.
- Environmental hygiene is the responsibility of personnel and students working in the isolation facility. Do not wait for a technician or other personnel to clean. Avoid contaminating anterooms with straw or manure and assist with general cleanup and maintenance whenever possible.
- Students and interns assigned to the contagious case are responsible for routine cleaning and organization of anterooms. This includes cleaning and disinfecting counters, door handles, and doorknobs, changing footbaths when needed, and emptying trash into the dumpster

Class 3, 4 - Isolation:

- Clean exam gloves must be always worn when working in the isolation facility, preparation rooms, and animal patient rooms. Gloves must be changed between working in different preparation rooms or isolation rooms.

8.3.5. MINIMIZING ENTRY INTO THE LARGE ANIMAL ISOLATION FACILITY

General:

- Entry into the isolation facility should only occur when necessary.
- Personnel should not enter isolation rooms unless contact with animal patients is required. Clinicians may at their discretion take students into isolation rooms for teaching purposes, but this should be minimized as much as possible, and all personnel and students entering isolation rooms must use appropriate precautions.
- Only the clinicians, students, technicians and cleaning personnel responsible for animal patient care should enter isolation.
- When possible, it is optimal to have different people provide care for animal patients in these facilities (i.e., it is best if the same person is not caring for animal patients in the main hospital as well as in isolation). If it is necessary to work on animal patients in multiple housing areas, the personnel or student should take optimal precautions when moving between areas and handling animal patients with different infectious disease risks. When possible, students assigned to class 3 or 4 animal patients should not have contact with immune-suppressed animal patients (leukopenic animal patients, young or very old animals, animals receiving immunosuppressive drugs, etc.) elsewhere in the FVM. When caseload demands contact with infectious disease suspects, treat other animal patients before handling infectious class 3 or 4 cases.
- The appropriate barrier precautions must be worn by anybody entering class 3 and 4 units. The required barrier precautions will be posted on the board outside.
- The clinician is always responsible for ensuring that animal patients are receiving appropriate care.

Class 3, 4 - Isolation:

- Barrier precautions:
  - Footbath
  - Hand washing
  - Disposable coveralls or designated medical clothes

- Gloves
- Boots

- Clients are not permitted to enter the isolation facility unless in the exceptional circumstance of euthanasia and with permission from the primary clinician.

8.3.6. EQUIPMENT AND MATERIALS

General:

- If possible, materials taken into the isolation facility (class 3, 4) should not be taken back to the main hospital.
- If equipment or material that cannot be used or discarded (for example perfusion bidons, slings, etc.) has entered the isolation facility, it should be thoroughly disinfected before being taken back to the main hospital.
- Any supplies taken into the isolation facility (class 3, 4) should be used for that animal patient or discarded.
- No equipment or supplies (bandages, syringes, disinfectants, etc.) should be taken to the isolation facility (class 3, 4) without first checking its need with the responsible clinician.
- Medications used on class 3 or 4 animal patients should be billed to the client and sent home at discharge or else discarded. Do not return their medications or intravenous fluids to the medication room. All medications sent home with clients must be dispensed in appropriate containers with a complete prescription label.
- Additional cleaning supplies and disinfectants are stored in the isolation facility.
- Additional scrubs, isolation gowns, supplies, etc., are stored in the preparation room.

Class 3, 4 - Isolation:

- An individual stethoscope, thermometer and disposable overalls are assigned for use with each high-risk contagious animal patient (class 3, 4). A box containing these FVM-owned instruments is stored in front of the animal patients' rooms during hospitalization and cleaned and disinfected after discharge.

8.3.7. PROCEDURES FOR PERSONNEL AND STUDENT ENTERING AND EXITING THE ISOLATION FACILITY

General:

- The following policies also apply to all ancillary services.
- All personnel including cleaning personnel and students, are required to adhere to all relevant policies regarding attire in the isolation facility.
- Regularly, doorknobs should be cleaned with disinfectants.
- While entering the isolation rooms
  - Take all necessary supplies at once into these rooms when entering to minimize traffic in and out of the rooms.
  - Procedures involving highly contaminated sites should be performed last (e.g. manipulation of mucous membranes, manipulation of MRSA-infected wounds, rectal temperature, rectal palpation, manipulation of strangled abscesses, etc.).
- While exiting the isolation rooms

- Avoid dragging bedding or fecal material into the hallway (of major importance for personnel in charge of cleaning).
- Appropriately dispose of sharps or garbage in designated trash bins.

Class 3, 4 - Isolation:

- To enter the isolation facility (entering the preparation room):
  - Open the door of the preparation room with a card key.
  - Change: put on disposable coveralls or designated medical clothes in the preparation room.
  - Change to designated boots available in the preparation room.
  - Wash hands or use hand sanitizer.
- To enter the area around the isolation rooms (isolated treatment room, equipment storage, feed storage):
  - Use the outgoing footbath or foot mat in the preparation room of the isolation area.
  - All personnel and students are required to wear clean boots and disposable coveralls/designated medical clothes.
- To enter isolation rooms:
  - Put on gloves that are available in each room.
  - All personnel and students are required to wear clean boots, clean clothes and clean exam gloves.
  - Put on the specific overall clothes for the isolation area in the aisle in ~~a~~t the isolation room.
  - Use the footbath in front of the room when entering the room.
  - Personnel and students handling, examining or feeding different equine isolation animal patients should change gloves and disposable overall clothes between animal patients.
- Exiting occupied isolation rooms:
  - Footbaths in front of the stall must be used when exiting the room.
  - Clean and disinfect thermometer, stethoscope, and other used material/equipment by wiping with alcohol.
  - Take off the individual disposable overall clothes and put them in a trash bag placed between the outside door and the inside door.
  - Remove gloves and put them in a trash bag placed between the outside door and inside door.
- Exiting the area around the isolation rooms (entering the preparation room):
  - Use a footbath in the preparation room.
  - Clean boots in the footbath before entering the preparation room.
  - In the preparation room: Remove boots and disposable coveralls.
  - Use hand sanitizer or wash hands in the preparation room.
  - Put on normal clothes and shoes.
  - Exit the preparation room and close the door with the key.

8.3.8. PROCEDURES FOR MOVING LARGE ANIMAL PATIENTS INTO THE ISOLATION FACILITY

General:

- Isolation rooms should be prepared for animal patients before moving them into the isolation facility.

- Set up footbaths and/or foot mats with disinfectants.
- Set up other barrier supplies depending on their classification.
- Animal patients stabled in the in-animal patient areas of the general facility that are to be moved to the isolation facility should be walked on a path that exposes them to the least number of other animals. It is best to have two people assist with this effort:
  - One person dresses in appropriate isolation facility attire, sets up the isolation room, and receives the animal patient at the entrance for the animal patients only.
  - The other person moves the animal patient from the main hospital to the isolation facility.
- It is critical to clean and disinfect surfaces from fecal material or bodily fluids that contaminate surfaces during the process of moving animals.
- Personnel will place a "DO NOT USE, Disinfection required" sign on the hospitalization room in the main hospital.
- Personnel and students responsible for the case will ensure that the room has been "broken down", empty fluid bags have been discarded, and all equipment can be properly disinfected.

Class 3, 4 - Isolation:

- A bag with supplies for the isolation facility (disposable coveralls, gloves, masks and caps) is available in the preparation room.
- When possible, animal patients to be housed in the isolation room at the time of admission should be transported directly to the Large Animal Isolation Facility in the owners' trailer/transport vehicle and unloaded in the driveway of the isolation area.

8.3.9. CLEANING AND FEEDING IN THE ISOLATION FACILITY

- All personnel and students are responsible for assisting with the cleaning and maintenance of the isolation facility. Everyone should help clean when it is noticed that something needs to be done.
- Personnel in charge of the cleaning will clean and re-bed isolation rooms once daily, in the morning, and they will clean the walls if contaminated with diarrhea, blood or other excretions/secretions.
- Disinfection liquid for the footbaths is changed daily, in the morning, by the personnel in charge.
- Additional cleaning should be done throughout the day by all personnel and students.
- Students and interns assigned to cases are responsible for routine cleaning in front of the rooms, and changing disinfection liquid for the footbaths and foot mats as needed during the day.
- Students and interns are responsible for feeding animal patients in classes 3 and 4. Do not enter the feed room with contaminated gloves, clothing or hands.
- Technicians and clinicians are responsible for overseeing cleaning disinfection, and stocking of the preparation room.

8.3.10. PROCEDURES FOR ANIMAL PATIENTS LEAVING THE LARGE ANIMAL ISOLATION FACILITY *(FOR DISCHARGE OR DIAGNOSTIC PROCEDURES, BUT WHILE THE ANIMAL PATIENT IS STILL CONTAGIOUS)*

General:

- Personnel and students moving the animal patient are required to wear all appropriate attire and barrier precautions.
- Personnel and students handling the animal patient should avoid contaminating doors, gates, etc. with contaminated gloves or hands in the process of moving animal patients.
- FVM personnel must ensure that instructions given to clients adequately address the infectious disease hazards associated with the animal patient (to other animals and ~~to~~ humans) and appropriately provide suggestions for mitigating risks to people and animals.
- Animals housed in the isolation facility may not be walked or exercised. Only if prior authorization is given by biosecurity personnel, animals ~~may~~ be walked or exercised (for animal welfare purposes but only inside the surface limited by surrounding walls).

Class 3, 4 - Isolation: (for discharge or highly exceptional surgical procedure)

- All diagnostic and therapeutic procedures are performed in the isolation facility.
- In the case of the necessity of ~~a~~ surgical intervention, the surgical intervention will be performed in the isolation facility if it concerns an intervention of low risk and short duration, or exceptionally in the surgical theater.
- Exiting the animal patient:
  - Personnel or students must brush the animal patient, clean the animal patient from feces, body secretions/excretions and pick hooves in the room before exiting the isolation facility.
  - Just before exiting the room, wipe the animal patient's coat from head to tail with a cloth drenched in 0.5 percent of chlorhexidine solution and scrub hooves using 0.5% chlorhexidine solution which should be prepared in isolation buckets using 100 ml of chlorhexidine to 1L of water.
  - Personnel and students moving the animal patient are required to wear all appropriate attire and barrier precautions.
  - Personnel and students handling the animal patient should avoid contaminating doors, gates, etc. with contaminated gloves or hands in the process of moving animal patients.
  - It is critical to clean and disinfect surfaces from fecal material or bodily fluids that contaminate surfaces during the process of moving animals.
- The intervention:
  - Interventions will be planned at the end of the day, if possible.
  - During the whole intervention, all personnel and students in the surgical theater must wear appropriate attire and barrier precautions.
- Return to the isolation facility:
  - Just before exiting the recovery room, scrub hooves using 0.5% chlorhexidine solution which should be prepared in isolation buckets using 100 ml of chlorhexidine to 1L of water.
  - Personnel and students moving the animal patient are required to wear all appropriate attire and barrier precautions.

- Personnel and students handling the animal patient should avoid contaminating doors, gates, etc. with contaminated gloves or hands in the process of moving animal patients.
- It is critical to clean and disinfect surfaces from fecal material or bodily fluids that contaminate surfaces during the process of moving animals.
- After use, the recovery room and surgical theater are considered contaminated areas and should be thoroughly cleaned and disinfected. Under no circumstances will another animal undergo a surgical intervention before thorough cleaning and disinfection.

8.3.11. REQUIRED DIAGNOSTIC TESTING AND SURGICAL PROCEDURES IN ANIMAL PATIENTS WITH SUSPECTED INFECTIONS

- Diagnostic testing to detect certain infectious and/or zoonotic agents provides essential information for the appropriate clinical management of infected animal patients. This testing provides direct benefit to the animal patient in addition to benefiting clients by allowing them to appropriately manage their other animals and protect their families. It also benefits the FVM as this information is essential for the appropriate management of disease risk for all animal patients, personnel and students.
- It is therefore highly suggested that hospitalized animal patients ~~to~~ undergo diagnostic testing if an infection with specific contagious or zoonotic agents is a reasonable probability. This diagnostic testing is considered essential to case management in the FVM and therefore is carried out and billed to the client.
- It is the responsibility of the clinician responsible for an animal patient's care to ensure that appropriate samples are submitted for this testing and that appropriate biosecurity precautions are taken with these animal patients.
- Biosecurity personnel should be notified as soon as reasonably possible that there is a reasonable index of suspicion that a hospitalized animal patient may be infected with a class 3 or class 4 disease.
- Whenever possible, diagnostic, surgical, or other procedures should be performed in the isolation facility, rather than moving the animal patient to common exam and treatment areas.
- Appropriate barrier nursing precautions must always be followed by all personnel and students during diagnostic or other procedures.
- If the animal patient requires diagnostics or other procedures (e.g., radiology, surgery) that can only be performed in the main hospital facility, these procedures should be performed at the end of the day whenever possible.
- Biosecurity personnel must be consulted before moving to any class 4 animal patient for diagnostic or surgical procedures.
- The attending clinician is responsible for notifying appropriate personnel and students of the suspected infectious agent and methods that are prudent for containment (this includes cleaning and disinfection after procedures).
- This information should be written on all request forms.
- In general, all barrier nursing precautions that are required in the animal patient housing area will be required whenever handling that animal patient.
- Instruments, equipment, and the environment should be thoroughly cleaned and disinfected after the procedure, regardless of where the procedure is conducted.

- The clinician must ensure that all services assisting with procedures are informed of the known/suspected agent and appropriate barrier clothing precautions.
- If the animal patient has diarrhea, one person is required to lead the animal, and another person must follow with a trash bag to catch any fecal matter, and immediately clean/disinfect contaminated areas.
- The clinician is also responsible for ensuring that the environment and equipment are appropriately cleaned and disinfected after the procedure. This includes induction areas, surgical areas, recovery rooms, and any other applicable area of the hospital.

8.3.12. USE OF ULTRASONOGRAPHY, RADIOGRAPHY, ENDOSCOPY OR ECG IN THE LARGE ANIMAL ISOLATION FACILITY

- Personnel from relevant services must wear appropriate clothing and barrier precautions when handling animal patients from class 3 and/or 4.
- Personnel from the relevant service along with the necessary equipment should remain in front of the room and not enter the room unless essential to completion of the procedure.
- After performing an ECG, personnel must clean and disinfect the leads with a gauze sponge soaked in disinfectant (0.5 % chlorhexidine or alcohol) before leaving the facility, paying particular attention to cleaning and disinfecting the clips and wires that have touched the animal patient.
- After performing endoscopy, personnel will clean and disinfect the endoscope, light source, etc. with alcohol wipes before leaving the facility. Once back in the endoscopy room, the material will be cleaned and disinfected again according to the recommended procedure.
- For radiology exams, the cassette should be placed in a plastic bag which should be retrieved by a person with clean hands before processing.
- For ultrasound examinations, the probe should be placed in a disposable glove to be protected. The probe and the cable should be carefully disinfected after the exam. The ultrasound machine should be kept in the corridor and not entered into the room, and the wheel should be carefully disinfected after the exam. While exiting the unit, the ultrasound machine should roll over the foot mat.
- Only the necessary material should be brought into the isolation facility. Alcohol and gel for ultrasound exams should be kept in the isolation facility.
- All radiography and ultrasonography equipment and supplies must be cleaned and disinfected with 0.5 % chlorhexidine or alcohol solution after the examination is performed.

8.3.13. BIOLOGICAL SPECIMENS FROM SUSPECTED OR CONFIRMED CONTAGIOUS PATIENTS

- Specimens obtained from high-risk animal patients should be correctly labeled with appropriate identification and then placed in a bag.
- Care should be taken when placing specimens in bags to prevent contamination of the outside of the bag.
- Suspected conditions or disease agents should be clearly identified on all submission forms.
- Zoonotic conditions or disease agents should be double-packed and clearly identified on all submission forms.

8.3.14. BREAKDOWN OF THE LARGE ANIMAL ISOLATION FACILITY BEFORE DISINFECTION

- Contact personnel in charge of cleaning immediately upon discharge so that they can clean and disinfect the room or facility before another animal patient is admitted.
- The clinician, intern and student on the case are responsible for the following breakdown procedures of the facility so that the room fully can be cleaned and disinfected. The room will not be disinfected unless the personnel in charge of cleaning is notified of the specific agent that was confirmed or suspected to be associated with the case.
- Throw away all disposables, using designated trash bins.
- Seal all dustbins and leave them in the isolation facility to be removed by responsible personnel.
- Disinfect all the medical equipment and put them on a cart at the entry of the unit. A technician can then collect the cart with the equipment for thorough cleaning and disinfection and finally stocking.
- If another animal patient is admitted before the personnel in charge of cleaning can disinfect the isolation facility, it must be disinfected by a student, intern, clinician, or technician.

8.3.15. REDUCING BIOSECURITY PRECAUTIONS FOR AN ANIMAL PATIENT HOUSED IN THE LARGE ANIMAL ISOLATION FACILITY

- In general, biosecurity precautions will not be reduced for animal patients with class 4 diseases. Biosecurity precautions of class 3 diseases can be reduced depending on the disease.
- Only biosecurity personnel can permit to amend precautionary requirements or reduce the rigor of biosecurity precautions for animal patients that have an increased risk of contagious disease.

8.4. MANAGEMENT OF ANIMAL PATIENTS INFECTED OR COLONIZED WITH RESISTANT BACTERIA

- Animal patients infected with bacteria resistant to important antimicrobial drugs or to multiple drug classes represent a potential health hazard to personnel, students, clients, and to other animal patients. As such, they are managed as class 3 contagious diseases with increased biosecurity precautions intended to discourage dissemination in the FVM. Bandaging of wounds known to be infected with infectious agents of concern (e.g., MRSA or other highly resistant bacteria) should be conducted in low-traffic areas that can be easily cleaned and disinfected.

8.5. EMERGENCY RESPONSE WHEN NATURAL DISASTERS OCCUR

- Moor the animals, close the inside door and keep the outside door when handling the animals of class 1 or 2. Open the entrance/exit for the animal patients of an isolation treatment room, take off clinical clothes (or disposable overall clothes) and rubber boots and then leave.
- Moor the animals, close the inside door and keep the outside door when handling animals of class 3 or 4. Take off clinical clothes (or disposable overall clothes) and rubber boots and then leave.

CHAPTER 9. EQUINE MEDICAL CENTER BIOSECURITY SOP

9.1 GENERAL ATTIRE FOR THE EQUINE MEDICAL CENTER

The FVM promotes the use of hospital-dedicated attire to decrease the risk of carrying infectious agents at home where people or animals may be exposed.

- All personnel and students are required to wear clean professional attire, clean protective outer garments, and clean, appropriate footwear always when working in out-animal patient areas of the Equine Medical Center.
- This attire should be appropriate to the job at hand (e.g. coveralls or working clothes and heavy boots or shoes are probably the most appropriate footwear and protective outer garments when working with large animal patients performing tasks which are accompanied by a high risk of being soiled with infectious materials).
- Footwear: It is recommended that all personnel and students always wear sturdy boots or shoes while working in the Equine Medical Center. This type of footwear is easier to clean and disinfect compared to footwear constructed of porous materials (e.g. running shoes) and helps to protect against injury when working around horses.
- Personnel and students must be willing to disinfect footwear while working, which provides a good check regarding suitability (are you willing to fully immerse them in a footbath!?) Water-impervious footwear is strongly recommended to limit damage to footwear that will eventually occur after exposure to footbath solutions.

9.2. FOOD AND BEVERAGES

- Food and beverages may only be stored and consumed in the kitchen or staff offices of the Equine Medical Center.
- Personnel and students can eat in the conference room.
- In the kitchen of the Equine Medical Center, a refrigerator and a microwave are present to store and heat food or beverage intended for human use. This refrigerator and microwave are not used for storage of medication, samples or other medical equipment, or medical use. No other form of storage of medication, samples or other medical equipment is allowed in the kitchen.

9.3. GENERAL CLEANLINESS AND HYGIENE

- Maintaining hospital cleanliness and appropriate personal hygiene are responsibilities of ALL personnel and students working in the Equine Medical Center.
- It is recommended that hands are washed with soap or cleaned with an alcohol-based hand sanitizer before, and after examining each animal patient (See Chapter 1. For the hand-washing protocol).
- Hand washing is mandatory before and after the following acts: treating wounds and changing bandages, ophthalmologic care, placing a catheter, performing endoscopy, and contact of class 3 and 4 cases. It is also mandatory when hands are visibly soiled.

- Clean exam gloves should be worn when handling high-risk animal patients (i.e. suspected infectious disease or neonatal foals) or when handling excretions, secretions, or wounds.
- Surfaces or equipment contaminated by feces, secretions, or blood must be cleaned and disinfected by personnel and students in charge of the animal patient. This is especially important regarding animal patients known or suspected of shedding important infectious disease agents.
- All members of staff and students are expected to arrange material once used and to leave the location in its original condition.

9.3.1. ANIMAL PATIENT HYGIENE

- It is of major importance for basic hygiene and for reducing the infection pressure that the animal patients of the Equine Medical Center are housed in a proper stall. Before a new horse enters the stall, feces or dirty bedding should be removed. The staff of the Equine Medical Center, students, interns, clinicians and technical staff should clean the stalls and the hallways every day.
- Water buckets or automatic drinkers need to be properly and regularly cleaned and disinfected, and cleaned in between use by different horses. When a horse enters into a stall, the automatic drinker should be checked to work correctly, and the owner should be asked if the horse knows how to drink from automatic drinkers. If the horse drinks from a bucket, the presence of water in the bucket should regularly be checked and regularly be filled with fresh water.
- Feeding bowls need to be properly and regularly cleaned and disinfected, and cleaned in between use by different horses. If a horse has not eaten its feed, this should be reported to the clinician and the feed should be removed from the feeding bowl.
- Horses should be kept as clean as possible, regularly be brushed and have their hoofs picked, and excretions or secretions on the horse should be removed.
- The environment around the stalls should be clean, tidy and neat. This means without medications or materials lying around, and no bedding outside stalls. All members of staff and students are expected to arrange material once used and to leave the location in its original condition.
- If horses defecate outside their stall (whether inside or outside a building), their feces need to be removed immediately after defecation. Shovels are available in storage. If this concerns diarrhea, the feces need to be removed and the floor cleaned, disinfected and dried. If animal patients urinate inside (but not outside a building), the urine needs to be removed, and the floor cleaned and dried.

9.3.2. GENERAL CLEANING AND DISINFECTION PROTOCOL

- Gloves and appropriate attire should be worn whenever using disinfectants. Additional personal protective equipment (mask, face shields, goggles, impervious clothing, boots) should be worn when there is a probability of splashes from the disinfection process resulting in contact that is not merely incidental.
- Remove all bedding and feces before disinfection. The presence of gross contamination and mine will inactivate most disinfectants. If a hose is used to de-bulk material care must be taken to minimize aerosolization and further spread of potentially infectious agents.

- Wash the affected stall, including walls, doors, automatic water drinker and feeding bowl, with water and detergent or soap； scrubbing or mechanical disruption is always needed to break down films and residual debris that prevents or inhibits the disinfection process.
- Thoroughly rinse the cleaned area to remove any detergent residue. Bleach may be inactivated by detergents or soap; therefore, it is very important to rinse well after washing the area.
- Allow the area to drain or dry as much as possible to prevent dilution of disinfectant solutions.
- Wet the affected stall, including walls, doors, automatic water drinker and feeding bowl, thoroughly with disinfectant. This disinfectant should remain in contact with surfaces for 15 minutes, particularly if an infectious agent is suspected.
- Remove excess disinfectant with water.
- The bleach should be rinsed off all surfaces before housing an animal patient in a cage or stall.
- After disinfecting, remove the protective attire and wash your hands.
- For non-routine disinfection measures (e.g. disinfectant misting), only personnel trained and approved to wear and use the required personal protective equipment will be allowed access to areas being disinfected.
- All multiple-use areas (stock room, examination rooms, etc.) where animals are examined or treated, should be ranged, cleaned and disinfected following use by personnel and students responsible for the animal patient, irrespective of infectious disease status of the individual animal. Cleaning tools must be cleaned and disinfected after use (including handles).

9.3.3. FOOTBATHS AND FOOTMATS

- Footbaths solutions are changed every morning by responsible personnel.
- Footbaths should be changed whenever they are judged to contain excessive amounts of bedding or dirt and they should be refilled when noticed that they are dry or low on volume； this is the responsibility of ALL people working in this area (students, technicians, interns and clinicians).
- Personnel and students are required to use footbaths appropriately whenever they are encountered. Footbaths require full immersion of feet, and therefore water impervious footwear must be worn wherever footbaths are employed.

9.3.4. DISINFECTION PROTOCOL FOR INSTRUMENTS AND EQUIPMENT

- All instruments, equipment or other objects used, or medical care must be cleaned and sterilized or disinfected between uses on different animal patients.
- Materials that are sterilized between uses (instruments and equipment such as surgical instruments) must be cleaned with detergent and water and disinfected with a 0.5% chlorhexidine solution or benzalkonium chloride after use on animal patients. The equipment should then be returned to the sterilization room.

Stethoscopes:

- Cleaning: wiping or washing with detergent to remove gross material
- Disinfection: wipes of alcohol, chlorhexidine or hand sanitizer solution available throughout the hospital.

- Stethoscopes owned by personnel may be used on animals in the non-contagious areas, but must be regularly cleaned and disinfected (at the beginning and at the end of the day is recommended). Immediate cleaning and disinfection is required when stethoscopes are visibly soiled.
- Individual, FVM-owned stethoscopes are assigned for use with each high-risk contagious animal patient (class 4). These are stored at animal patients' stalls during hospitalization and cleaned and disinfected after discharge.
- At the clinicians' discretion, higher quality stethoscopes owned by personnel may be used for special exams for class 4 animal patients, but this should not be routine for all exams, and stethoscopes must be thoroughly cleaned and disinfected after each use.

Thermometers:

- Cleaning: wiping or washing with detergent to remove gross fecal material
- Disinfection: wipes of alcohol, chlorhexidine or hand sanitizer solution available throughout the hospital or soaking in alcohol or chlorhexidine.
- Glass thermometers are not to be used in the FVM to decrease risks associated with broken thermometers and mercury exposures. Electronic thermometers are used instead.
- Electronic thermometers owned by personnel may be used on animals in non-contagious areas but should regularly be cleaned and disinfected (at the beginning and ~~at~~ the end of the day is recommended).
- Probes from thermometers used in continuous temperature monitoring (for example during anesthesia or intensive care) should be thoroughly cleaned and disinfected between animal patients.
- Immediate cleaning and disinfection are required when thermometers are visibly soiled.
- Individual thermometers are assigned for use with each high-risk contagious animal patient (class 3 and 4). These are stored at animal patients' stalls during hospitalization and cleaned and disinfected after discharge.

Hoof picks:

- Cleaning: washing with detergent to remove gross material
- Disinfection: soaking in alcohol or chlorhexidine
- Personnel and students should use hoof picks to clean feet before the horse leaves its stall.
- The hoof picks should be cleaned and disinfected once a week by personnel in charge.
- After use on a horse with bacterial or mycotic hoof problems, the hoof picks should be immediately cleaned and disinfected.
- Individual hoof picks are assigned for use with each high-risk contagious animal patient (class 3 and 4). These are stored at animal patients' stalls during hospitalization and cleaned and disinfected after discharge.

Brushes:

- Cleaning: washing with detergent to remove gross material. In the case of use for a horse with parasitic skin disease, the brush should be treated with an antiparasitic before disinfection, and in the case of use for a horse with mycotic infections with an anti-mycotic before disinfection.

- Disinfection: soaking in alcohol or chlorhexidine
- Personnel and students should regularly brush horses.
- The brushes should be cleaned and disinfected once a week by personnel in charge.
- Individual brushes are assigned for use with each high-risk contagious animal patient (class 3 and 4). These are stored at animal patients' stalls during hospitalization and cleaned and disinfected after discharge.

Twitches:

- Cleaning: washing with detergent to remove gross material
- Disinfection: soaking in alcohol or chlorhexidine
- Twitches must be cleaned and disinfected every two weeks by personnel in charge.
- After use on a horse with a class 3 or 4 disease the twitch should be immediately cleaned and disinfected.
- Other instruments and equipment owned by personnel (e.g., hemostats, scissors, etc.) may be carried and used on multiple animal patients, but they must be regularly cleaned and disinfected using alcohol or 0.5% chlorhexidine available in the medication storage and in the Equine Medical Center. After use on a horse with a class 3 or 4 disease, the instruments or equipment should be immediately cleaned and disinfected.

9.3.5. CLEANING AND DISINFECTION PROTOCOLS FOR EQUINE FACILITIES

9.3.5.1. PARKING AREA

- The technician or personnel in charge of cleaning will clean the area daily on regular workdays (Monday- Saturday).

9.3.5.2. EQUINE OUT-ANIMAL PATIENT EXAMINATION AREAS AND BREEZEWAY

- For the moment, the Equine Medical Center has no out-animal patient stalls.
- The examination rooms are thoroughly cleaned and disinfected after each use by the technician.
- The breezeway is cleaned (e.g. swept and hosed) daily and disinfected weekly by personnel in charge of cleaning.

9.3.5.3. ROUTINE STALL CLEANING AT THE EQUINE MEDICAL CENTER

- Use care when working in high-risk areas; avoid contamination of equipment or other areas (e.g. when cleaning stalls into dumpsters, take care not to drop feces outside of the dumpster).

Cleaning procedures for occupied stalls in the main hospital:

- The stalls should be cleaned, and fresh bedding should be added every day.
- Use appropriate clothing (coveralls or work clothes; barrier clothing where required).
- Use the appropriate dumpster for the area (separate dumpsters and cleaning material for class 3 and 4 cases are available) – care should be taken to avoid dropping manure/straw outside the dumpster.
- Try to avoid animal patients having contact with the dumpsters.
- Cleaning tools used for class 1 and 2 stalls should be cleaned and disinfected once a week.

- Dumpsters used in the Large Animal Veterinary Clinical Training Center should not be moved into the Equine Medical Center or vice versa.

General procedures for cleaning a vacated equine stall:

- If a horse is discharged, the stall should be cleaned as soon as possible.
- If it concerns a horse with a contagious disease, the stall should be marked by the intern or clinician as "disinfection required". If the infectious agent is known or suspected, the effectiveness of the disinfectant should be checked. See the general cleaning and disinfection protocol (Chapter 1.). Personnel in charge of cleaning should empty, clean and disinfect this stall as soon as possible, but after cleaning non-contagious stalls. The stall is considered a contagious area until disinfected and thus no horse should enter before it has been cleaned and disinfected.
- Stalls used by horses with non-contagious diseases are regularly emptied, cleaned and disinfected. The stall should be cleaned in between use by different horses, but the frequency of disinfection is dependent on the case turnover; this is not necessary after each horse, but as frequent as possible.

Weekly Routines:

- The floor of the feed room should be cleaned and disinfected before each new delivery of food (see general cleaning and disinfection protocol)
- Sinks in aisleways, in the general treatment area, and the examination rooms should be cleaned and disinfected.

Monthly Routines:

- Areas that are not used daily (i.e. tops of walls, areas not used often, etc.) should be hosed monthly to prevent accumulation of dust.

Annual Routines:

- The entire facilities for equine should be thoroughly cleaned, scrubbed and disinfected from top to bottom, including all equipment (bug-out).

9.4. GUIDELINES FOR RECEIVING AND MANAGING EQUINE PATIENTS

9.4.1. OUT-ANIMAL PATIENTS (COMING FOR A CONSULTATION BUT NOT HOSPITALIZED)

- The client will be asked to check in before unloading the horse. Following the check-in, a quick clinical impression will be obtained by an intern or clinician to allocate the animal to a certain risk category (see paragraph 9.5.1 and 9.5.2 for classification and ~~for~~ exclusion criteria for entry and/or hospitalization). According to the risk category and circumstances, the animal may then be unloaded in the equine trailer parking area and be directed to one of the exam rooms or be sent home.
- At the check-in, the client will be asked for the official papers of the horse.
- Out-animal patients should be taken into equine in-animal patient areas as little as possible.

9.4.2. IN-ANIMAL PATIENTS

- The client will be asked to check in before unloading the horse. Following the checking, a quick clinical impression will be obtained by an intern or clinician to allocate the animal to a certain risk category (see paragraph 9.5.1 and 9.5.2 for classification and for exclusion criteria for entry and/or hospitalization). According to the risk category and circumstances, the animal may then be unloaded in the equine trailer parking area and be directed to one of the exam rooms or be sent home.
- At the check-in, the client will be asked for the official papers of the horse. These papers will stay with the horse during the whole period of hospitalization.

9.4.2.1. STALL ASSIGNMENTS

- Stalls for housing equine in-animal patients are assigned by the responsible veterinarian. Other personnel and students should check with the veterinarian to find out where to put newly admitted in-animal patients before placing the horse into a stall in the hospital.

9.4.2.2. ANIMAL PATIENT RECORDS AND MEDICATIONS

- Records of the cases (the front sheet, the directives and the recent clinical exams) should be stored in the specimen storage room next to the stalls, and records of complementary exams and old clinical exams should be stored at reception. These records may be consulted by students, interns and clinicians, but may not leave the area of the stall or the secretary, respectively.
- Medications and other materials used in cases should be stored in the medication room (medication, flush, other material), in a little box clipped to the door of the stall (ophthalmological treatments, creams/pastes) or at a caddie (alcohol, iso-betadine, syringes and needles).

9.4.2.3. STALL CARDS, TREATMENT ORDERS AND ANIMAL PATIENT CENSUS BOARD

- A stall card must be posted at the time that animal patients are admitted or as soon as possible.
- The stall card must list animal patient identification, the type and frequency of forage (none, grass, hay, silage, other) and concentrate (mash, normal mix, others) to feed, and drinking from a bucket if the horse is not familiar with an automatic drinker should also be listed.
- A card with the class of infectious disease status will be placed on the stall and the unit. This allows all personnel and students to better understand the infectious disease hazard and the associated precautions that should be associated with animal patients.
- The infectious disease status must be updated as animal patients' status changes during hospitalization.
- Animal patient diagnosis and infectious disease status must also be recorded on the animal patient census board located at the reception. Anticipated discharge date and time should also be noted on the board when this becomes available.
- Treatment orders are posted at the directives in the stall doors.

- Stall cards and treatment orders contain confidential animal patient information. As such, visitors should never be allowed to read this information about animals that they do not own.

9.4.2.4. FEED AND WATER

- All grain or other supplements (including those provided by clients) must be stored in containers with tight-fitting covers.
- Only minimal amounts of bedding, forage, and concentrating feeds are to be stored in the facilities of faculty to decrease the likelihood of contamination and to decrease the availability of food and hiding places for wildlife.
- The floors of the feed room in the facilities faculty should be cleaned and disinfected before each new delivery of food (see the general procedure for cleaning and disinfection protocol: section 9.3.2)
- Information about what forage and/or concentrates to be fed and the frequency should be written clearly on the stall card.
- See section Animal Patient Hygiene (section 9.3.1) for cleaning of the automatic drinkers, buckets and feeding bowls.

9.4.2.5. BEDDING

- The staff of the Equine Medical Center are responsible for bedding stalls and feeding ~~for~~ animal patients as they arrive.
- Occupied stalls are cleaned and re-bedded, with clean straw or shavings every morning. In addition, at other times the stalls are noted to be excessively soiled or wet, the stalls should be cleaned and re-bedded.

9.4.2.6. DISCHARGE

- Before discharge, clients or their agents must be instructed about infectious disease hazards associated with animal patients and recommendations about control of these hazards on the home premises. The anticipated time and date of discharge should be noted on the animal patient census board at the reception.
- Personnel in charge of cleaning should be notified if animal patients will be discharged so that unnecessary effort is not expended cleaning these stalls.
- When the animal patient is discharged, the stall card should be cleaned to indicate that the animal is no longer hospitalized, and all records should be collected at the reception.
- Stalls used to house animal patients of class 1 and 2 should be cleaned (remove manure and wet bedding) before a new horse enters the stall.
- The staff of the Equine Medical Center and students are responsible for breaking down items around the stall and ensuring that they are discarded, filed, or cleaned and disinfected (brushes, barrier gowns, etc.).

9.4.2.7. TACK (e.g. halters, leads, blankets, leg wraps, etc.)

- Tack or other items owned by clients are not to be left with animal patients at the FVM, except for halters and blankets.
- The FVM supplies lead to animal patients depending on the situation (muzzles and blankets are also available if required).
- FVM-owned tack is stored at the animal patients' stall when not in use.

- All tack supplied by the FVM is cleaned and disinfected between animal patients by soaking in chlorhexidine solution.

9.4.2.8. WALKING AREA

- Horses may be walked when their disease or problem allows the horse to walk, and the clinician has permitted for the horse to be walked.
- The horse must be accompanied by a person used to handling horses.
- The walking area is restricted to the path around the Equine Medical Center and the place for horseback riding. Any dropped feces in these walking areas should be removed as soon as possible.

9.4.3. ROUTINE ENVIRONMENTAL SURVEILLANCE

- Routine environmental surveillance on smooth floors and hand-contact surfaces throughout the hospital will be conducted every 6 months for most areas, and more frequently for areas that are more commonly contaminated with *Salmonella* (Isolation facility every 3 months).
- FVM staff responsible for the positive area reports any positive culture results back to biosecurity personnel as soon as results become available.
- These data are routinely summarized and reported by biosecurity personnel.

9.5. MANAGING ANIMAL PATIENTS WITH SUSPECTED CONTAGIOUS DISEASE

- Special precautions are required when managing animal patients known or suspected of being infected with contagious disease agents. Conditions of special concern because of the potential for nosocomial transmission include animal patients with acute gastrointestinal disorders (e.g. diarrhea), acute respiratory tract infections, acute neurologic diseases, abortions or infections with bacteria that are resistant to multiple antimicrobial drugs.
- Animal patients with elevated contagious disease risk will be isolated from the general hospitalization stalls and discharged as soon as possible.
- Clinicians, interns or students are encouraged to conduct initial physical examinations on these animal patients outside ~~at~~ the trailer to evaluate the contagious disease risk.
- Personnel should consider implementing barrier nursing precautions when handling these animal patients until evaluations suggest risk of contagious disease transmission is negligible.
- Biosecurity personnel should be notified as soon as possible when animal patients with elevated contagious disease risk (class 3 and 4) are admitted or develop these problems while hospitalized.

9.5.1. CLASSIFICATION OF SUSPECTED/CONFIRMED CONTAGIOUS ANIMALS

- Infectious diseases encountered in hospitalized animals are assigned by the clinician to the following classification levels, based on the transmissibility of the agent to other animals and/or zoonotic potential.

CLASS 1: NORMAL HOUSING -green

- Non-infectious diseases or infectious diseases caused by agents that have no likelihood of transmission to other animals and no potential for human infection.
- In the equine medical service, the following conditions/animal patients are included:
  - No fever, no respiratory problem, no history of fever or respiratory problems during the last 6 months
  - Trauma, wounds
  - Pre-et postoperative animal patients, excluding colic animal patients (without contagious complications)
  - Ophthalmologic animal patients
  - Non-contagious neonates
  - And other animals in similar condition

CLASS 2: NORMAL HOUSING -green

- Infectious diseases caused by agents that have a low level of transmission and may include non-resistant bacterial infections.
- In the equine medical service, the following conditions/animal patients are included:
  - Wounds infected with non-resistant bacterial infections
  - Bacterial pneumonia, pleuropneumonia without suspicion of contagious bacteria
  - Bacterial corneal ulcers with non-resistant bacterial infections
  - And other animals in similar conditions

CLASS 3: BARRIER NURSING -orange

Subclass A: Resistant bacteria. Infections caused by bacteria with highly resistant antimicrobic susceptibility patterns, as determined by the external Bacteriology laboratory.

Subclass B: Infectious diseases caused by agents with a moderate level of transmission and/or potential human pathogens.

- In the equine medical service, the following conditions/animal patients are included:
  - Fever and/or leucopenia of unknown origin
  - Viral respiratory diseases: cough, nasal discharge (<2 weeks), possibly accompanied by fever.
  - *Rhodococcus equi*: foals under the age of 10 months with respiratory problems and fever
  - Diarrhea without fever and/or leucopenia
  - Non-surgical digestive problem with hemorrhagic reflux OR non-hemorrhagic reflux with fever and/or leucopenia.
  - MRSA or other multi-resistant bacterial infections
  - Contagious dermatologic infections: dermatophytosis, dermatophilus congolensis, chorioptes, lice and other parasites

CLASS 4: ISOLATION -red

- Infectious diseases caused by agents that are considered to have a high level of transmission and/or are extremely serious human pathogens.
- Animal patients with class 4 infectious diseases are housed in the isolation facility. Exceptionally, when the isolation facility is occupied, they can be housed in the general facility; however, the barrier precautions will remain the same as in the isolation facility.
- In the equine medical service, the following conditions/animal patients are included:

- Strangles: swollen submandibular lymph nodes, nasal discharge, cough, fever OR suspicion of guttural pouch empyema and/or chondroids in the guttural pouches.
- Acute diarrhea with leucopenia and/or fever
- Acute, rapidly deteriorating neurological disease or acute neurological disease accompanied by fever (e.g., suspicion of the neurologic form of EHV1)
- Abortion (150-300days of gestation)
- Perinatal death (>300 days of gestation) without the presence of dystocia, premature placental separation, a congenital abnormality or twins explaining the perinatal death.
- Diseases with a zoonotic risk (for example): rabies, malleus (*Burkholderia mallei*), brucellosis, anthrax, *Mycobacterium bovis & tuberculosis*, etc.

- Horses that have been in contact with a horse suffering from a suspected or confirmed contagious disease are considered contagious until proven otherwise or until the incubation time has passed without the horse developing clinical signs. Attention to diseases where the clinical signs of the disease can be subclinical and where the horse still can transmit the disease.

9.5.2. EXCLUSION CRITERIA FOR ENTRY AND/OR HOSPITALIZATION

- In the case of notifiable animal diseases in Japan.
- If the risks for other hospitalized animal patients, FVM personnel or students to become infected with the disease are too important compared to the health risk for the animal itself, the animal can be refused to enter the hospital or to be hospitalized.
- Only clinicians (not interns) are allowed to make the decision to refuse an animal.
- The refusal criteria for horses are the following:
  - Suspicion of viral respiratory diseases (cough, nasal discharge, fever for <2 weeks) without the horse's life being in danger.
  - Suspicion of strangles (swollen submandibular lymph nodes, nasal discharge, cough, fever or suspicion of guttural pouch empyema and/or chondroid in the guttural pouches) without the horse's life being in danger or without surgical necessity.
  - Suspicion of the neurological form of EHV1 (acute ataxia with presence or history of fever, possibly other cases) without the horse's life being in danger.
  - Abortion without the horse's life being in danger.

9.5.3. COMMUNICATION REQUIREMENTS FOR THE ISOLATION FACILITY

- Biosecurity personnel must be notified ASAP whenever animal patients of class 3 or 4 are confirmed at the Equine Medical Center. This notification can be made in person, by phone, or by e-mail and should be performed by the veterinarian with primary responsibility for the animal patient.

- Relevant staff and students must be notified when animal patients with contagious diseases are placed in the isolation facility (class 3, 4） and when they are discharged or moved.
- Stalls must be visibly labeled with the according class (class 1&2, class 3 or class 4) and the infectious agents of concern, along with the required biosecurity precautions. It is very important to communicate the agent(s) of concern for these animal patients so that all personnel and students can take appropriate precautions to protect human exposure and to ensure that appropriate cleaning and disinfection procedures are used.
- To optimize identification, horses allocated to class 3 will have orange tape around their halves.

9.5.4. GUIDELINES FOR MANAGING AND CARING FOR ANIMAL PATIENTS WITH SUSPECTED OR CONFIRMED CONTAGIOUS DISEASES

General:

- Strict attention to hygiene and the use of barriers are critical for the appropriate containment of contagious disease agents.
- Before and after examining each animal patient, hands must be washed with soap and water or cleaned with alcohol-based hand sanitizer.
- Surfaces or equipment contaminated by feces, other secretions or blood must be cleaned and disinfected immediately by personnel or students in charge of the animal patient.
- Special care must be taken to prevent contamination of the environment by dirty hands, gloves, or boots.
- Use all footbaths or footmats encountered.
- Environmental hygiene is the responsibility of all personnel and students working in the isolation facility. Do not wait for a technician or other personnel to clean. Avoid contaminating anterooms with straw or manure and assist with general cleanup and maintenance whenever possible.
- Students and interns assigned to the contagious case are responsible for routine cleaning and organization of anterooms. This includes cleaning and disinfecting counters, door handles, and doorknobs, changing footbaths when needed, and emptying trash into the dumpster
- Food is not allowed in the Equine Medical Center and the Large Animal Isolation Facility, because of the risk of exposure to zoonotic agents.

Class 3, 4 - Isolation:

- Clean exam gloves must be always worn when working in the isolation facility, anterooms, and animal patient stalls. Gloves must be changed between working in different anterooms or stalls.

9.5.5. PROCEDURES FOR MOVING EQUINE PATIENTS INTO THE ISOLATION FACILITY

General:

- Stalls should be prepared for animal patients before moving them into the isolation facility.
- Set up footbaths and/or foot mats with disinfectants.
- Set up other barrier supplies depending on their classification.

- Animal patients stabled in the general in-animal patient areas that are to be moved to the isolation facility should be walked on a path that exposes them to the least number of other horses. It is best to have 2 people assist with this effort:
  - One person dresses in appropriate isolation facility attire, sets up the isolation stall and receives the animal patient at the gate.
  - The other person moves the animal patient from the main hospital to the isolation perimeter.
- It is critical to clean and disinfect surfaces from fecal material or bodily fluids that contaminate surfaces during the process of moving animals.
- Personnel will place a "DO NOT USE, Disinfection required" sign on the stall in the main hospital.
- Personnel and students responsible for the case will ensure that the stall has been "broken down", empty fluid bags have been discarded, and all equipment can be properly disinfected.

Class 3, 4 - Isolation:

- A bag with supplies for the isolation preparation room (disposable aprons, gloves) is available in the preparation room.
- When possible, animal patients to be housed in isolation at the time of admission should be transported directly to the Large Animal Isolation Facility in the owners' trailer/transport vehicle and unloaded in the driveway of the isolation area.

9.5.6. REQUIRED DIAGNOSTIC TESTING AND SURGICAL PROCEDURES IN ANIMAL PATIENTS WITH SUSPECTED INFECTIONS

- Diagnostic testing to detect certain infectious and/or zoonotic agents provides essential information for the appropriate clinical management of infected animal patients. This testing provides direct benefit to the animal patient in addition to benefiting clients by allowing them to appropriately manage their other animals and protect their families. It also benefits the FVM as this information is essential for the appropriate management of disease risk for all FVM animal patients, personnel and students.
- It is therefore highly suggested that hospitalized animal patients ~~to~~ undergo diagnostic testing if an infection with specific contagious or zoonotic agents is a reasonable probability. This diagnostic testing is considered essential to case management in the FVM, and therefore the testing is carried out and ~~it is~~ billed to the client.
- It is the responsibility of the clinician responsible for an animal patient's care to ensure that appropriate samples are submitted for this testing and that appropriate biosecurity precautions are taken with these animal patients.
- Biosecurity personnel should be notified as soon as reasonably possible that there is a reasonable index of suspicion that a hospitalized animal patient may be infected with a class 3 or class 4 disease.
- Whenever possible, diagnostic, surgical, or other procedures should be performed wherever high-risk animal patients are housed, rather than moving the animal patient to common exam and treatment areas.
- Appropriate barrier nursing precautions must always be followed by all personnel and students during diagnostic or other procedures.

- If the animal patient requires diagnostics or other procedures (e.g., radiology, surgery) that can only be performed in the main hospital facility, these procedures should be performed at the end of the day whenever possible.
- Biosecurity personnel must be consulted before moving to any class 4 animal patient for diagnostic or surgical procedures.
- The attending clinician is responsible for notifying appropriate personnel of the suspected infectious agent and methods that are prudent for containment (this includes cleaning and disinfection after procedures).
- This information should be written on all request forms.
- In general, all barrier nursing precautions that are required in the animal patient housing area will be required whenever handling that animal patient.
- Instruments, equipment, and the environment should be thoroughly cleaned and disinfected after the procedure, regardless of where the procedure is conducted.
- The clinician must ensure that all services assisting with procedures are informed of the known/suspected agent and appropriate barrier clothing precautions.
- If the animal patient has diarrhea, one person needs to lead the animal, and another person must follow with a trash bag to catch any fecal matter, and immediately clean/disinfect contaminated areas.
- The clinician is also responsible for ensuring that the environment and equipment are appropriately cleaned and disinfected after the procedure. This includes induction areas, surgical areas, recovery stalls, and any other applicable area of the hospital.

9.6. MANAGEMENT OF ANIMAL PATIENTS INFECTED OR COLONIZED WITH RESISTANT BACTERIA

- Animal patients infected with bacteria resistant to important antimicrobial drugs or to multiple drug classes represent a potential health hazard to FVM personnel, students, clients, and to other animal patients. As such, they are managed as class 3 contagious diseases with increased biosecurity precautions intended to discourage dissemination in the FVM. Bandaging of wounds known to be infected with infectious agents of concern (e.g., MRSA or other highly resistant bacteria) should be conducted in low-traffic areas that can be easily cleaned and disinfected.

9.7. EQUINE SURGERY AND ANESTHESIA

9.7.1. ATTIRE FOR THE "CLEAN" AREAS OF THE EQUINE SURGICAL FACILITY

(Refer to the FVM Dress Code)

- Clean surgical scrubs are required for entry into designated "clean" areas of the surgical facility. These are the surgery preparation room and the surgical theater.
- Shoe covers or footwear dedicated for use in designated "clean" surgical areas are also required for all personnel and students.
- Wear surgical scrubs.
- Outside of designated "clean" areas of the surgical facility, all personnel and students should wear some type of clean outer garment over scrubs (e.g. White coat or coveralls). Shoe covers must be removed when exiting "clean" surgical areas.

- All students and personnel, including cleaning and maintenance personnel, are required to adhere to all relevant policies regarding attire in equine surgical facilities.

9.7.2. HYGIENE FOR PERIOPERATIVE MANAGEMENT OF EQUINE PATIENTS

- High standards of cleanliness and hygiene must be maintained throughout the equine surgical facility.
- The Surgical team and animal patient's surgery site must be aseptically prepared. An aseptic technique must be maintained while in surgery.
- Nonessential personnel or students are always prohibited.
- Movement of anesthesia students and staff between the anesthesia preparation area and the equine medical service will be kept to a minimum.
- Personnel must wear clean exam gloves before placing IV catheters.

9.7.3. GUIDELINES FOR PERIOPERATIVE MANAGEMENT OF EQUINE PATIENTS

- Perioperative management of animal patients can greatly influence the likelihood of incisional or other nosocomial infections. As such, basic management procedures should always emphasize the use of barrier nursing precautions and maximizing separation between animal patients. Standards for personal, animal patients, and environmental hygiene in the surgical and perioperative areas should be among the highest in the FVM.
- Hands must be washed or hand sanitizer used between all animal-patient contacts. Hands should also be washed after animal-patient contact to prevent contamination of hand-contact surfaces (e.g., doors, countertops, equipment, etc.). An alternative is to use exam gloves as a barrier nursing precaution and to discard gloves after each animal-patient contact.
- Clean exam gloves must be worn whenever catheters or endotracheal tubes are placed.
- Fecal material should be removed immediately from the anesthesia prep area or other areas of the surgical facility.
- If needed the floor should be hosed between animal patients and disinfected with appropriately diluted disinfectants.
- Equipment such as belly bands, hobbles, mouth syringes, endotracheal tubes, etc., will be cleaned and disinfected between uses using appropriately diluted chlorhexidine.
- Routine (e.g., daily) environmental cleaning and disinfection should be carried out rigorously following prescribed protocols.

9.7.4. ANESTHESIA INDUCTION AREA

Activities conducted before entering the anesthesia induction area:

- Pre-anesthetic examination forms should be completed the day prior to procedures when possible. All known or suspected contagious diseases should be clearly noted on the form.
- Do not clip the surgery site of animal patients before the day that procedures are scheduled. This predisposes to colonization of incisional sites with potentially pathogenic bacteria.
- Animal patients should be thoroughly brushed or bathed before entering the anesthesia induction area. The animal patient's mouth should be rinsed outside of the induction area. For extreme emergency surgeries, the animal patient

should be cleaned as much as possible. Personnel assigned to the case should take primary responsibility for ensuring that this is completed if required.

- Whenever possible, horses' shoes should be removed before entering the anesthesia induction or surgery areas. Disposable gloves should be worn when handling animal patients' feet or thoroughly wash hands after completion. Personnel assigned to the case should take primary responsibility for ensuring that this is completed.
- All horses' feet should be retained and scrubbed with chlorhexidine solution before entering the anesthesia induction or surgery areas. Personnel and students should wear disposable gloves when handling animal patients' feet or thoroughly wash their hands after completion. Personnel assigned to the case should take primary responsibility for ensuring that this is completed.

Activities conducted in the anesthesia induction area:

- Equine surgical animal patients will be delivered to the anesthesia prep area one hour before scheduled procedures (i.e., scheduled table time), and placed in the anesthesia prep area until the time of induction.
- Rinse the animal patient's mouth with water.
- Prepare the IV catheter site aseptically and place the catheter using an aseptic technique. Clean exam gloves must be worn for this procedure.

9.7.5. POSTOPERATIVE ACTIVITIES

- Equine animal patients must be returned to their stabling area as soon as it is safe after recovery to reduce the amount of fecal contamination in the recovery stalls, and to provide sufficient time for recovery stall cleaning.
- Recovery stalls must be swept and mopped with disinfectants between cases.
- The oxygen insufflation hose used in recovery must be cleaned and sprayed with chlorhexidine solution (allowing 15 min contact time). The distal end of the tubing (the end used in the horse) must be cleaned of debris with detergent and water, soaked in chlorhexidine solution (allowing 15 min contact time), and rinsed between cases.
- Anesthesia machines must be cleaned and disinfected between cases:
  - Valves and domes will be cleaned with water and dried.
  - Y-pieces and reservoir bags will be rinsed thoroughly, soaked in chlorhexidine solution for a minimum of 15 minutes after each use, then thoroughly rinsed and dried before the next use.
  - Y-piece adapters will be cleaned with detergent and water, soaked in chlorhexidine solution (allowing 15 min contact time) and rinsed after each use.

9.7.6. OTHER ROUTINE CLEANING AND DISINFECTION PROCEDURES

- All induction, surgery, and recovery areas are thoroughly cleaned and disinfected by technicians.
- Endotracheal tubes (ET):
  - Clean inside and outside of ET tubes with mild detergent and water, using a scrub brush.
  - Soak ET tubes in a large barrel of chlorhexidine solution for at least 15 minutes.
  - Thoroughly rinse ET tubes with warm water being careful not to set them down in the sink.

- Hang ET tubes to dry in the designated cabinet in the anesthesia induction area.
- ET tubes are stored in this cabinet until needed.
- Any ET tubes laid on the ground require disinfection before use.

- The mouth gag must be soaked in chlorhexidine solution for 15 minutes after each use, then rinsed and then placed on the rack to dry and prevent corrosion.
- The hobbles are scrubbed with detergent and water and soaked in chlorhexidine solution as needed.
- Lead ropes and halters used by anesthesia service will be thoroughly rinsed in clean water before use and scrubbed with detergent and water and soaked in chlorhexidine solution as needed.
- All large animal anesthetic machines and ventilators will be broken down and thoroughly cleaned/disinfected regularly. A log file will be kept on the days and times performed.
- Environmental samples will be obtained from the recovery rooms and surgical theatres regularly and cultured for the presence and of pathogenic bacteria and to quantify bacterial counts.

9.7.7. CLEANING OF THE SURGICAL THEATRE AND SURGICAL FACILITIES

- **After each procedure:**
  - All surgical equipment and carts and stands are put aside and cleaned properly.
  - Blood and other dirt are removed and discarded in designated bins.
  - The theatre is pre-rinsed to remove all organic material from the floor.
  - The floor is cleaned/mopped with disinfectants.
- **End of the day or after invasive contaminated procedure (enterotomy, sinus drainage, abscess drainage):**
  - All carts, stands and materials in the surgical room should be emptied before cleaning.
  - All blood or dirt on the floor should be removed and discarded in designated bins.
  - The floor and walls are rinsed with hose.
  - Scrub floor with disinfectant.
  - Rinse solution and let it dry.
  - Clean the wheels of carts and stand before entry into the surgical theatre.
  - All bins should be removed from the theatre (~~no~~ Used bins should not be left in the theatre overnight).
  - Doors should be kept always closed.
- **Once a week:**
  - In empty.
  - Scrub the walls till body level.
  - Clean and disinfect drains in the theatre and hall.
  - Clean table piston.
  - Remove dust from tablets and lights.

9.7.8. MANAGEMENT OF SURGICAL ANIMAL PATIENTS WITH CONTAGIOUS DISEASES

- Clinicians and interns assigned to surgical cases are responsible for identifying and communicating when animal patients are known or suspected of having contagious diseases (e.g., strangles, etc.).
- Procedures on these cases should be scheduled for the end of the day or performed in the isolation facility whenever possible.
- Clinicians and students assigned to these cases are responsible for ensuring that induction and recovery areas have been appropriately identified as being potentially contaminated with contagious pathogens, as well as ensuring that they have been appropriately decontaminated before use with other animal patients.

9.8. CONSULTATION AT EXTERNAL FACILITIES

The staff of the Equine Medical Center performs consultations at external facilities on a non-regular basis. It is of major importance considering biosecurity that activities at the external facilities are separated from those at the Equine Medical Center, preventing the exchange of contagious agents between those two sites and among horses at the external facility. The following biosecurity precautions should be applied before during and after these consultations:

Preparation for consultation at external facilities:

- Clinicians, technicians and students wear clean and specific clinical scrubs and should not wear attire already worn at the FVM. They all wear clean boots that should be disinfected or waterproofed stout shoes at departure from the FVM.
- Only the equipment and materials necessary for the consultations will be taken to the equine breeding facilities. If possible, material and equipment used for the consultations at the equine breeding facilities and used for the Equine Medical Center should be completely separated (for example a separate box for needles, and syringes for use at the equine breeding facilities and at the Equine Medical Center). All equipment and material used for the consultations at the equine breeding facilities and in the Equine Medical Center as well (double-use) should be cleaned and disinfected before departure and before returning.

During consultation:

- Any horse arriving at the equine breeding facilities and at primary examination suspected of suffering from any class 3 or class 4 contagious diseases should be isolated immediately to prevent any contact with other horses.
- In between animal patients' examinations, hands should be washed (with water and soap or with hand sanitizer available on site).
- In between animal patients the endoscope, nasogastric tubes, and heart rate meters should be cleaned and disinfected.

After consultation:

- Equipment and materials assigned for use at the external facilities will be arranged and marked for use at the external facilities only.
- All double-use equipment and materials should be cleaned and disinfected.

- Clothing should be discarded, cleaned and not worn in the FVM. Boots should be disinfected at departure from the equine breeding facilities.

The same precautions will be implicated for all other activities outside the Equine Medical Center.

9.9. DECEASED ANIMAL PATIENTS

9.9.1. BREAKDOWN OF ANIMAL PATIENT ENVIRONMENT

- Personnel in charge of cleaning should be notified if an animal patient is deceased.
- When the animal patient is deceased, the stall card should be cleaned, and all records should be collected.
- Stalls used to house animal patients of class 1 and 2 should be cleaned (remove manure and wet bedding) before a new horse enters the stall.
- Stalls used to house animal patients with known or suspected contagious agents (class 3 and 4) should be marked with a sign: “to be disinfected”. No other horse is allowed to enter these stalls before cleaning and disinfection. See paragraph 9.3.5.3 for the disinfection protocols of stalls.
- Students, technicians, and clinicians are responsible for breaking down items around the stall and ensuring that they are discarded, filed, or cleaned and disinfected (brushes, barrier gowns, etc.)

9.9.2. STORAGE OF ANIMAL PATIENT BODY

- The cadaver of animal patients should be stored in the refrigerator in the necropsy room as soon as possible.

9.9.3. REFERRAL FOR

9.9.3.1. PATHOLOGY

- Unless otherwise specified, all deceased animal patients of the Equine Medical Center must be necropsied in the shortest possible time.
- When the Pathology department is closed (holidays), necropsies must be achieved by the staff of the Equine Medical Center as soon as possible.

9.10. BREAKING TRANSMISSION CYCLES

9.10.1. VISITORS IN THE EQUINE MEDICAL CENTER

- See the general part of the Biosecurity Protocol for more information concerning clients, visitors, children and pets in the FVM.
- Visiting hours for the Equine Medical Center are 2:00 pm to 5:30 pm on Mondays to Fridays and 9:00 am to 12:00 pm and 2:00 pm to 4:00 pm on Saturdays, Sundays and public Holidays. Under no circumstances are owners allowed to stay the night with their horses at the Equine Medical Center.
- All visitors must check in at the reception desk before entering the Equine Medical Center. After that, a responsible person, student, clinician, or equine nurse should escort clients to their animal’s stall.

- Clients must adhere to all barrier nursing requirements that apply to their animals in order to touch the animals or enter stalls.
- All visitors should be instructed to wash their hands after leaving in-animal patient areas.
- Clients may visit their animals but are not allowed to wander in the facility and specifically are not allowed to touch other animal patients or read stall cards or treatment orders. Information about other animal patients is confidential, including diagnoses, and should not be divulged.
- The public is not allowed to tour in-animal patient areas of the Equine Medical Center. Special arrangements can be made to provide tours.
- Owners or their designated agents may visit hospitalized in-animal patients; other interested parties are not allowed to visit in-animal patients without express permission from the owners.
- Owners (except the neighbors, people concerned with equine industries and referring vets) can visit their horses only from the perimeter of the class 3 stall; they are not permitted to enter the stall. They should be informed about the contagious risks of their horse's disease for horses outside the Equine Medical Center (at the owner's home or in a manager). As for owners of all horses, they are not allowed to visit other parts of the Equine Medical Center.
- Clients are never allowed to visit animals housed in the Large Animal Isolation Facility. Exceptions to this visitation rule may be granted under extraordinary circumstances, such as when animal patients are to be euthanized. In this case, the same biosecurity SOP is applied to owners.
- Dogs or other pets are not allowed in the Equine Medical Center.

9.11. RISK COMMUNICATION

- See the general part of the Biosecurity Protocol for information concerning risk communication at the FVM.

CHAPTER 10. DIAGNOSTIC IMAGING BIOSECURITY SOP

10.1. GENERAL GUIDELINES

- Radiological procedures or examinations should not be carried out on animals with suspected infectious diseases unless required, and when possible, should be scheduled at the end of the day.
- It is the primary clinician's responsibility to notify the personnel performing diagnostic imaging and to state procedures to be used to prevent the spread of infectious disease for animals with potentially infectious diseases (particularly respiratory, gastrointestinal, and multiple-antibiotic resistant bacterial infections).
- If required before the end of the day, the examination room and equipment in diagnostic imaging must be cleaned and disinfected directly after the examination, or the examination must be done in the animal patient housing area with precaution.
- Ensuring that personnel and students involved in diagnostic imaging of animal patients with increased contagious disease risks is ultimately the responsibility of the clinicians responsible for animal patient care. Hazards should be clearly marked on the medical record of the patient subject to radiographic, ultrasound, CT, or MRI scanning (place a yellow sticker on if necessary).
- It is the responsibility of the primary clinician to coordinate the transport of the animal to the location where diagnostic imaging is performed or to organize the visit of personnel performing diagnostic imaging in the isolation facility for an ultrasound examination in case the animal patient cannot or should not be moved; at least one student or nurse responsible of the animal patient has to follow the case in the Imaging Section.
- It is the responsibility of the primary clinician to indicate barrier clothing (gowns, gloves) and procedures to be followed (including efficient disinfectants).
- The facilities and equipment must be cleaned and disinfected as soon as possible. The personnel who perform diagnostic imaging will supervise or perform cleaning and disinfection of radiological equipment.
- For ultrasound examinations, the probe should be placed in a disposable glove to be protected. The probe and the cable should be carefully disinfected after the exam. When examining companion animal patients, the ultrasound pillow should be placed in a plastic bag and then covered by an under sheet, and after use, the used under sheet and the plastic bag should be thrown in a designated waste container.
- Paper towels used to dry animals and to clean the equipment, gloves, disposable outerwear, urine and feces should be thrown in a designated waste container. This container is sealed just after the cleaning.
- The ultrasound machine should be manipulated by the person conducting the ultrasound exam with her/his clean left hand or by a different operator who does not handle the animal patient. For ultrasound exams undertaken in the Large Animal Isolation Facility, the ultrasound machine should be kept in the corridor and not entered in the box and the

wheel should be carefully disinfected after the exam. Only the necessary material should be brought into the isolation facility. Alcohol and gel for ultrasound exams should be kept in the isolation facility.

- For radiology exams for large animals, the cassette should be placed in a plastic bag which should be retrieved by a person with clean hands before processing before the exam.
- Wash hands between cases regardless of the infectious status of the animal patient.
- Personnel and students should wear disposable outerwear and gloves to handle the animal patient.
- All individuals contacting the animal must wash their hands carefully when the procedure is complete.
- Following imaging evaluation of cases with known or suspected infectious disease, the radiograph examination room should be closed and disinfected as soon as possible by the personnel who performed diagnostic imaging scanning. Paper towels used to dry animals and to clean the equipment, gloves, disposable outerwear, urine and feces should be thrown in a designated waste container. This container is sealed just after the cleaning.
- The number of people involved in imaging examinations should be limited as much as possible.
- All personnel and students working with radiation must wear protection and badges.

10.2. LARGE ANIMAL PATIENTS

- The portable radiograph machine should be used on large animals with known or suspected infectious diseases whenever possible.
- Transport small ruminants to the Imaging Section on gurneys or in carts whenever possible.
- The personnel performing diagnostic imaging and students entering the large animal facilities should follow the clothing protocol appropriate for the area.

10.3. COMPANION ANIMAL CASES

- If a contagious disease is known or suspected, the animal patient should remain in its housing area until ready to image.
- A gurney or transport cage should be used to minimize hospital contamination.

10.4. IMAGING ROOMS AND EQUIPMENT

- Spray or mop the floor with disinfectant after a known or suspected infectious disease case.
- Lead aprons/gloves should be sprayed with disinfectants after use on a known or suspected infectious disease case.
- Lead ropes/head ropes for patients with infectious diseases should be always available to use and cleaned and disinfected immediately after use. In the case where the equipment is assumed to be severely infectious, that equipment should be disposed of.

CHAPTER 11. OSUMI LARGE ANIMAL CLINICAL CENTER BIOSECURITY SOP

A: OSUMI LARGE ANIMAL CLINICAL CENTER

11.1. ENTIRE FACILITY

11.1.1. GENERAL ATTIRE

11.1.1.1. FOOTWEAR

- Use dedicated shoes for the facility to minimize the risk of inadvertent transmission of infectious agents to people.

11.1.2. GENERAL CLEANLINESS AND HYGIENE

- People entering the Facility should use the entrance of the northeast side, not ~~use~~ the main entrance in the south.
- People are prohibited from entering areas not under the control of the faculty.

11.1.2.1. CLEANING OF FACILITIES

- Students should clean areas under the control of the faculty once a week.
- Personnel need to check after students' cleaning and need to sterilize as required.

11.1.2.2. FOOTBATHS AND DISINFECTION TUBS

- Footbaths and disinfection tubs solutions are changed every morning by responsible personnel or interns.
- Footbaths and disinfection tubs should be changed whenever they are judged to contain excessive amounts of dirt.
- Personnel and students are required to wash and sterilize boots after returning from external activities, and to return them to the proper position.

11.1.2.3. FOOD AND BEVERAGES

- It is permissible for food and beverages to be consumed and stored in private areas including resting rooms, bedrooms and kitchens.
- Even if in private areas, it is allowed to eat and drink only after washing hands and body, and changing clothes when students return from external activities, because of minimizing the risk of inadvertent transmission of infectious agents to people.

11.2. EXAMINATION AND MEDICAL DEVICES STORAGE ROOM

11.2.1. GENERAL ATTIRE

11.2.1.1. OUTWEAR

- Clean coveralls or medical clothes are compulsory to be worn by all personnel and students to minimize the risk of inadvertent transmission of infectious agents to people or animals outside of the FVM.
- Outerwear should be changed daily and changed or cleaned more frequently if they become noticeably contaminated.
- Personnel and students should wash their outerwear responsibly. A higher temperature as possible is recommended.

11.2.2. GENERAL CLEANLINESS AND HYGIENE

11.2.2.1. CLEANING ROOMS

- All areas are cleaned by personnel in charge of cleaning after use.

11.2.2.2. DISINFECTION PROTOCOL FOR INSTRUMENTS AND EQUIPMENT

- All instruments, equipment or other objects for medical service must be cleaned and sterilized or disinfected between uses on different animal patients.
- **Stethoscopes:**
  - Stethoscopes owned by personnel and students may be used on animals in the non-contagious areas but must be regularly disinfected with alcohol or hand sanitizer solutions (at the beginning and ~~at~~ the end of the day is recommended).
  - Immediate cleaning and disinfection is required when stethoscopes are visibly soiled or after examination of an animal patient with a suspected infectious disease (class 3 or 4).
- **Thermometers:**
  - Glass thermometers are not to be used in the FVM to decrease risks associated with broken thermometers and mercury exposures. Electronic thermometers are used instead. Electronic thermometers should be thoroughly disinfected daily using alcohol and/or chlorhexidine wipes.
  - Multi-use thermometers should never be used on animal patients who have a high risk of enteric disease caused by contagious pathogens (e.g., BVD or salmonellosis).
  - Immediate cleaning and disinfection are required when thermometers are visibly soiled or after examination of an animal patient with a suspected high-risk contagious disease (class 3 and 4).
- Other instruments and equipment owned by personnel (e.g., hemostats, scissors, etc.) may be carried and used on multiple animal patients, but they must be cleaned and disinfected between animal patients using 70% isopropyl alcohol or 0.5% chlorhexidine available in various areas.
- The treatment room, hall, records rooms, and the different offices must always be kept clean and neat, including tabletops, countertops, and floors. Backpacks, etc. should be stored in lockers. Do not store extra clothing, backpacks, etc. in the breezeway or other areas.

11.2.2.3. FOOD AND BEVERAGES

- Food and beverages are forbidden in the examination and medical devices storage room.

B: LARGE ANIMAL EXTRAMURAL CLINICAL TRAINING BIOSECURITY SOP

- Clinical training in the Osumi Large Animal Clinical Training Center is implemented at the external farms.
- In external practice, observe the biosecurity manual defined by each facility strictly.
- All students who participate in practice are responsible for cleaning up and washing the vehicle for external activities, and decontaminating using a sprayer with a 0.5% chlorhexidine solution.
- Medical devices used in external activities should be cleaned and sterilized with 70% isopropyl alcohol.
- Personnel and students are required to wash and sterilize boots with a 0.02% dodecyl dimethyl ammonium chloride solution after returning from external activities and to return them to the proper position.
- Wastes should be thrown away according to the guidelines (infectious, noninfectious, bottles, etc.).
- After completing the procedures described above, personnel and students must wash their hands at a washstand in the examination room. Students should change their clothes before entering the private areas.

CHAPTER 12. IRIKI FARM BIOSECURITY SOP

It is conducted to raise cattle breeding, to breed cattle, to produce beef and compost on Iriki farm. Kuchinoshima feral cows and Tokara horses are raised for the preservation of genetic resources. All healthy animals are kept and controlled on the farm. If illness and injury are detected, treatment is provided at the same stall under the supervision of a veterinarian, or a patient is moved to an in-patient stall and receives individual treatments. Though animals are not accepted from the outside in a basic way, only those that are BLV test negative should be accepted under the supervision of a veterinarian for a certain period of quarantine and observation. Sanitation management rules are determined depending on the area that is Outside the sanitation management area (the road from the disinfection gate to the management building, the parking lot, and the management building) and inside the sanitation management area (the grazing area or animal houses which are determined by the animal's rearing condition) described below. People are required to apply before visiting Inside or Outside of the sanitation management area. They cannot visit without permission.

12.1. GUIDELINES FOR OUTSIDE THE SANITATION MANAGEMENT AREA (THE ROAD FROM THE DISINFECTION GATE TO THE MANAGEMENT BUILDING, THE PARKING LOT, AND THE MANAGEMENT BUILDING)

- Entering Iriki Farm, visitors must stay in their vehicles and pass through the disinfection gate. They cannot go directly to Inside of the sanitation management area. They must use only the front entrance of the management building which is Outside of the sanitation management area for comings and goings (excluding vehicles that transport animals and materials into and out of Inside and Outside the sanitation management area).
- Generally, visitors who have traveled abroad need to have a week past after coming back to Japan.
- Visitors must not bring clothes and shoes into Iriki Farm which were contacted with animals and excretions abroad.
- Do not bring clothes and shoes that have come in contact with animals and/or excretions outside of the farm until they have been cleaned.

12.2 GUIDELINES FOR OUTSIDE THE SANITATION MANAGEMENT AREA (THE MANAGEMENT BUILDING)

- Visiting hours at Iriki Farm are from 9:00 to 17:00 daily.
- All visitors must fill out an entry record at the office of the management building before entering the sanitation management area.
- Always keep the management building clean and tidy, including tabletops and floors. Bags and other items should be stored in a locker room or a room with a lock. Do not keep extra clothing or bags in aisles or other areas.
- All visitors must strictly follow the biosecurity measures on animal control.
- The faculty and staff should guide visitors.
- Change workwear daily. If they get dirty, change or wash them. Everyone is responsible for their washing.
- Visitors must follow the appropriate dress code before entering the sanitation management area. For safety reasons, they should not wear shorts or open-toed footwear in this area. If they do not bring their workwear, they may wear

protective clothing. They must wear boots or boots covered for the exclusive use of Iriki Farm. After following the dress code above at the management building, they may enter the sanitation management area.

- In case there is difficulty doing the work on the farm (electrical work or work at heights, etc.), people may be exempt from using protective clothing and special boots in Inside the sanitation management area. But it is only after they disinfect their footwear soles and prove there is no contact with animals.
- Visitors who use boots are responsible for scrubbing them with detergent and returning them.
- Take off the clothes worn in the area and change to clean ones on leaving.

12.3 GUIDELINES FOR INSIDE THE SANITATION MANAGEMENT AREA (THE GRAZING AREA)

12.3.1. FOOTWEAR

- Staff, students, and visitors who do not wear boots are not allowed to move around Inside the sanitation management area (the grazing area) until they wear them.
- Cleanse boots if they are visibly dirty.

12.3.2. OUTERWEAR

- Wear clean workwear or epidemic-prevention clothing to minimize the risk of accidental transmission of pathogens.

12.3.3 SANITATION MANAGEMENT IN GENERAL WORK

- Move into Inside the sanitation management area (grazing area) via the management building.
- Staff and students must wash their hands clean before and after contact with animals.
- Use cotton work gloves as necessary for safety when handling animals.
- Wear clean examination gloves when handling secretions and wounds.
- Disinfect equipment and tools with alcohol before and after using them to another individual for medical treatment.
- Staff and students should use all disinfected footbaths placed in the area.
- Clean wheels and sides of equipment after use which excrement adhered to.
- Eating and drinking are prohibited in breeding areas on Iriki Farm as a rule.

12.3.4. CLEANING OF THE FACILITY

- Always keep the feeding area tidy and clean.
- Staff should keep automatic water dispensers in proper condition and clean them regularly.
- Staff should clean the feeding areas and bedding immediately after they determine that cleaning is needed.

12.3.5. FOOTBATHS AND FOOT MATS

- The footbath solution should be replaced at least once a week. If it is determined to contain excessive mud, it should be replaced by staff at any time. If the foot mats are dry, they should be replenished by anyone who notices. This is the responsibility of everyone working in this area.

- Staff should use all footbaths or foot mats properly placed in the area. People should soak their feet into footbaths completely.

12.3.6. DISINFECTION PROCEDURE FOR INSTRUMENTS AND EQUIPMENT

- The supervising veterinarian is responsible for all equipment, supplies and instruments used in the treatment of animals. They are to be cleaned and sterilized or disinfected each time after use on a different individual during the treatment.
- All instruments, equipment and cleaning tools (brushes, brooms, shovels and baskets) used in the management of animals should be cleaned after use as needed and stored in a neat and orderly manner.

12.4. GUIDELINES FOR INSIDE THE SANITATION MANAGEMENT AREA (INSIDE THE AREA OF ANIMAL HOUSES)

12.4.1. FOOTWEAR

- Staff, students and visitors who do not wear boots are not allowed to move around Inside the sanitation management area (the grazing area) until they wear them.
- Clean and disinfect boots not only regularly but also when they are visibly dirty. Brushes and disinfection tanks for cleaning boots should be placed at each animal's house.

12.4.2. OUTERWEAR

- Wear clean workwear or epidemic-prevention clothing to minimize the risk of accidental transmission of pathogens.

12.4.3. SANITATION MANAGEMENT IN GENERAL WORK

- Move into Inside the sanitation management area (animal house area) via the management building.
- Staff must wash their hands clean before and after contact with animals.
- Use cotton work gloves as necessary for safety when handling animals.
- Wear clean examination gloves when handling animals suspected of having infectious diseases, secretions, and wounds.
- Staff and students who have treated animals suspected of having an infectious disease should immediately clean and disinfect equipment soiled with excrement, secretions and blood.
- Disinfect equipment and tools with alcohol before and after using them to another individual for medical treatment.
- Staff and students should use all disinfected footbaths placed in the area.
- Clean wheels and sides of equipment after use which excrement adhered to.
- Eating and drinking is prohibited in breeding areas on Iriki Farm as a rule.

12.4.4. CLEANING FACILITIES

- It is important to house animals in appropriate stalls depending on their production use or the presence of infectious diseases for maintaining basic hygiene and reducing the risk of infection.

- Always keep stables tidy and clean including aisles and floors. Put things back where they belong. Do not leave them for others to use.
- Staff should keep water buckets or automatic water dispensers in proper condition and clean them regularly.
- Staff should clean the feeding areas and bedding immediately after checking the condition there and determine the cleaning is needed.
- When new animals such as neonatal calves are housed, staff should clean the stables and lay down new bedding to maintain animal hygiene.
- Always keep clean and tidy around the stalls. Maintain outside of the stalls and cages free of medicines, objects and enormous amounts of bedding material. All staff and students should put tools back where they belong in the same condition.
- Remove feces if animals defecate outside of their stalls in a stable. If they urinate, remove the urine first, and then, clean and dry the floor.

12.4.5. FOOTBATHS AND FOOT MATS

- Staff should change the footbath solution every morning.
- If it is determined that footbaths and foot mats contain excessive mud and bedding, staff should replace them at any time.
- If the footbath solution is low in volume and foot mats are dry, anyone who notices should replenish them. This is the responsibility of everyone working in this area.
- Staff and students should use all footbaths or foot mats properly placed in the area. They should soak their feet into footbaths completely.

12.4.6. DISINFECTION PROCEDURE FOR INSTRUMENTS AND EQUIPMENT

- The supervising veterinarian is responsible for all equipment, supplies and instruments used in the treatment of animals, and they are to be cleaned and sterilized or disinfected each time after use on a different individual during the treatment.
- All instruments, equipment and cleaning tools (brushes, brooms, shovels and baskets) used in the management of animals should be cleaned after use as needed and stored in a neat and orderly manner.

12.5. GUIDELINES FOR MANAGEMENT OF ANIMAL

12.5.1. MANAGEMENT OF ANIMAL

- Staff manage cattle by individual identification number, pedigree and other information.
- Cattle must have ear tags. Staff manage cattle by their individual identification numbers and management numbers of Iriki Fam on their ear tags.
- Put a ring or a halter as needed.
- The staff in charge of the day checks the condition of cattle at a designated time in the morning and evening. They consult the supervising veterinarian for a checkup if necessary.

- Keep cattle clean and brush them regularly.
- Horses should be managed in fenced grazing areas and regularly checked the numbers.

12.5.2. STALL ASSIGNMENTS

- Staff sort cattle into stalls or gazing areas depending on the production use or health conditions. They also manage to sort cattle into respective stalls.
- If the supervising veterinarian determines an animal needs individual management, it must be admitted to an inpatient room.

12.5.3. ANIMAL MANAGEMENT BULLETIN BOARD

- Managing information on the animals (individual numbers and breeding areas) should be on the bulletin board in the office of the management building.

12.5.4. FEEDING AND WATERING

- Staff should feed roughage, concentrations and milk in the morning and evening unless there is special instruction.
- All grains and concentrates except roughage are stored in sealed containers with lids.
- Store only the requisite amount of roughage and concentrate on Iriki Farm. It is to reduce the probability of contamination and to avoid providing food and a den for wild animals.
- Store hay to the minimum necessary. Keep storage tidy and clean. Lock up to prevent wild animals from entering.
- Staff in the respective breeding areas should check the water station, replenish water, and clean it as needed.

12.5.5. BEDDING

- A person in charge of the day should check the stalls in use every morning and evening. Clean or change the bedding when staff determines that bedding has enough excrement for compost fermentation or cleaning is necessary.
- Staff are responsible for cleaning the stalls and replenishing bedding if they are excessively dirty or wet at other times of the day.
- Transport all collected bedding to the composting facility. If it is determined to be necessary among the bedding which is used for sick animals, add lime and mix with it.
- Store only the needed amount of bedding on Iriki Farm. It is to reduce the probability of contamination and to avoid providing food and a den for wild animals.

12.5.6. LIVESTOCK CARRIER

- Livestock carriers are used for loading and unloading livestock.
- Clean the loading platform of the carriers before and after loading and unloading livestock.

12.6. GUIDELINES FOR THE MANAGEMENT OF MEDICINES

12.6.1. MANAGEMENT OF MEDICINES

- Store medicines for animals in a medicine cabinet. Drastic medicines should be stored in a lockable medicine cabinet. The supervising veterinarian is responsible for controlling all the medicines.

12.7. GUIDELINES FOR FOOD AND BEVERAGE

12.7.1. FOOD AND BEVERAGE

- As a rule, Eating and drinking are allowed only in the management building.
- Food and beverages should be sealed in non-spill containers and be stored in a locker or a shared refrigerator.
- Wash hands thoroughly before drinking water inside or outside the sanitation management area.
- Do not store food and beverages in the refrigerator where medicines and biological samples are stored.

12.8. DAED PATIENTS' ANIMALS

12.8.1. CLEAN UP AROUND ANIMALS

- In case of finding a dead animal (cattle or horses), staff should ensure that other surrounding animals are intact and promptly cover them with tarps to prevent contact with wild animals. After the veterinarian's examination, staff contact a chemical disposal company for disposing of a carcass.

12.8.2 STORAGE OF ANIMAL CARCASS

- Store animal carcasses in a freezer as soon as possible if it is necessary to store it. If the carcass cannot be stored in a freezer, cover it with a tarp as soon as possible to prevent contact with wild animals.

12.9. BREAKING THE INFECTION CYCLE

12.9.1. CHILD

- Children are forbidden to enter Iriki Farm if they are not accompanied by their parents or staff.

12.9.2. PET

- Pets are prohibited from entering Iriki Farm under any circumstances. Pets must not be kept on the property.

CHAPTER 13. FUTURE TASKS REGARDING THE SURVEILLANCE OF THE PROGRAMME

The editing of this biosecurity SOP applied to the FVM is led by the Biosecurity Committee and Office of Quality Improvement in Veterinary Education, Joint Faculty of Veterinary Medicine, Kagoshima University, and it is revised by each head of facility and responsible person. It will be updated every year.

The future tasks will be the following:

- The implementation of a teaching program on biosecurity at the FVM
- The implementation of the biosecurity SOP applied to the FVM
- The updating of the biosecurity SOP applied to the FVM
- The organization of scheduled controls of hygiene in the clinics and isolation facilities
- The consideration and application of new governmental laws
- The consideration of new emerging infectious diseases outside of the country related to the biosecurity SOP applied to the FVM