

## Basic veterinary infection prevention and control procedures

Many infectious agents are spread through direct contact between animals or through indirect contact via for example humans (e.g., contaminated hands) or contaminated tools. Transmission can be avoided by employing good infection prevention and control procedures.

### BASIC INFECTION PREVENTION AND CONTROL PROCEDURES IN CONNECTION WITH FARM VISITS

#### Order of farm visits

If you are not aware whether there is suspected or confirmed disease or whether there are restrictions in place for any of the herds you are intending to visit, the order of visits should be planned from an infectious disease control perspective. This may vary between animal species. For example, with respect to pigs, the general rule is that herds with sows are visited first using freshly laundered work clothes and farms with only fattening pigs are visited last. With respect to Specific Pathogen Free herds, no other farms may have been visited in the last 48 hours before the visit.

Herds where infectious diseases are suspected or confirmed shall always be visited last during the day. Within a herd, the visit should be planned in the order of age category where the youngest animals are visited first. Sections with diseased animals should be visited last. In herds where production is not age-segregated, the epidemiological units with diseased animals are visited last.

#### Information to farmers

It is important to promote increased awareness among farmers and employees on the importance of good hygienic procedures to prevent the spread of infections.

The minimum that all farms must be able to provide is:

- running hot water,
- liquid soap,
- paper towels,
- hand disinfectants,
- a clean working surface to store any equipment on, as well as
- clean protective clothing/footwear

Note that farmers should protect their personnel from occupational hazards and injuries. Zoonotic infectious agents, such as salmonella, EHEC, and resistant bacteria, are potential occupational risks. The farmer must ensure that all personnel have the correct protective equipment and are given the opportunity to practice good hygiene and know the importance of protecting themselves from zoonotic infections.

### Hand hygiene procedures

Microorganisms on the hands may either belong to the normal flora, be pathogenic or originate from other humans, animals, or the environment. Cross-transmission via the hands is common and good hygiene is thus very important. The basis for maintaining good hand hygiene is intact skin, no jewellery or watches on hands or forearms, and short, unpainted nails. Wounds on the hands must be covered by waterproof dressings and disposable gloves (see below).

### Hand washing

Hands shall be washed and disinfected before and after farm visits. If hand washing and disinfection, and change of shoes and clothes, is possible and considered important, this shall be done when passing between sections and epidemiological units (this may be a group of animals within a building or in a different building/premises or separate sections).

Hands shall always be washed when they are visibly and noticeably dirty and after contact with bodily secretions (blood, milk, faeces etc.). If necessary, a nailbrush should be used. Hands are dried using paper. Soap and water may dehydrate the skin and damage its natural protective barrier and cause wounds and cracks. Therefore, it is important to use skin care products whenever possible.

Correct hand washing:

1. Use liquid soap. Mechanical processing until the soap lathers in your hands.
2. Wash hands and forearms thoroughly for 20 seconds.
3. Rinse hands under running water.
4. Dry off properly with a paper towel.
5. Disinfect hands as instructed below.

### Hand disinfection

Example of when to use hand disinfectant in the field:

- before and after every farm visit/patient/epidemiologic unit

- before collecting clean material
- before and after the use of gloves
- after handling dirty or contaminated material (dirty laundry, waste, hazardous waste)
- after changing shoes

If hands are visibly and noticeably clean, it is sufficient to disinfect the hands using an alcohol-based and hydrating product that does not dry out the skin. If the hands are washed before disinfection, it is important that the skin is dry before applying the disinfectant. The disinfectant is rubbed on as it dries.

The right kind of hand disinfectant:

- is alcohol-based with at least 70% ethanol or 60% isopropanol
- is approved according to the EN 1500 standard and is CE marked
- includes skin care products (to not dry out the skin)
- is easy and practical to use.

Hand disinfection is always done before and after farm visits and after coming into contact with bodily fluids, faeces, or alike. It shall also be used when considered necessary or when it is a part of the farm's own hygiene procedures.

Correct hand disinfection:

1. Cup your hand and fill it with hand disinfectant. Follow the manufacturer's recommendation for the correct amount.
2. Rub the product all over your hands. Start with the palms, the backs of the hands, the fingertips, around all fingers and in the thumb grips and the lower part of the forearms. The forearms shall also be disinfected.
3. Keep rubbing until the skin feels dry again.

### Procedures for the use of disposable gloves in the line of work

Gloves are used to reduce the number of infectious agents that come into contact with the skin. Gloves shall always be used when there is a risk of contact with infectious agents and when hand disinfection does not work, such as cryptosporidium, certain viruses, and certain bacterial spores.

- Medical examination gloves shall be CE marked for the purpose of use. They shall be used:

- for contact with bodily secretions; milk, urine, faeces, blood, and other biological material (with the exception of normal delivery),
- for abortion or delivery of foetus where putrefaction has begun,
- upon suspicion of infectious disease,
- for all wound care,
- when handling animals with skin infections such as ring worm and scabies.
- As gloves are never completely impermeable and occasionally break, hand disinfection should always be done before and after wearing gloves. The skin must be dry before putting on the gloves.
- Gloves may not be disinfected and reused as alcohol makes them more permeable.
- Gloves shall also be used in case of eczema or wounds on the hands.
- Used gloves must be discarded immediately after use.
- The use of gloves does not replace good hand hygiene!
- Gloves shall be stored in their original packaging. The durability of the gloves is affected by various factors. For example, gloves exposed to sunlight or radiators have a shorter shelf life.

#### Work clothes (ordinary clothes)

- Special work clothes and shoes must be worn.
- Work clothes must withstand a washing temperature of at least 60 degrees.
- Work clothes (ordinary clothes) are changed daily and during the day if they are dirty.
- A set of clean change of clothes should be kept in the car. It is advisable to use easily cleaned walking shoes. In some cases, you should consider using shoe covers over the walking shoes.
- Remember hand hygiene when removing shoe or boot covers.

#### Procedures for use of protective clothing and footwear (coveralls, coats, boots) during herd visits:

- Protective clothing must cover the work clothes.
- The farm's own protective clothing and footwear shall be used at first-hand, provided they are sufficiently clean.
- At second-hand, use your own non-absorbent coats or clean cloth coveralls and shoes or boots in combination with shoe or boot covers and clean headgear for each farm.

- For farm visits, changing to clean socks or putting on another layer of clean socks may prevent dust, dirt, or faeces from being brought along to the next farm via personal shoes or socks.
- If it for practical reasons, such as slippery conditions, is not appropriate to use shoe or boot covers, the footwear used in the herd shall be cleaned and disinfected before departure and then be stored in a plastic container or similar intended for this purpose. It is appropriate to use footwear that is easy to clean and can withstand disinfection.
- Long hair (and beard) shall be put up or gathered. Headgear shall be used and changed between each herd.
- After use, any disposable coveralls and shoe or boot covers shall be discarded and, if possible, left at the farm premises.
- Used protective clothing shall not come into contact with clean clothing.
- A special laundry bag shall be kept in the car for dirty protective clothing. Machine-washable special laundry bags for repeated use are recommended.
- Remember hand hygiene when removing shoe or boot covers.

### Equipment and instruments

Before entering the farm, you should consider what type of equipment that may be required during the visit. The principle is that all equipment brought into the herd should be disinfected before being brought back into the car. When using your own equipment and tools it is important to have a clean working surface; the surface may be covered by, for example, newspapers or paper. This is a minimum to be able to maintain basic hygiene standards at work. Equipment should not be placed on the floor.

Disposable material (including gloves) should be discarded between each animal. There may be some exceptions, such as scalpel blades when dehorning animals of the same group. Thermometer covers should always be used and changed between each individual.

### Dogs and other pets

Bringing dogs or other pets along to herd visits should be avoided as much as possible. If dogs or other pets accompany you to herd visits, they must be kept where they do not come into contact with equipment/clothing. The animals must not be walked at the farms visited.

## PROCEDURES FOR LAUNDRING WORK AND PROTECTIVE CLOTHING

- The floor and furnishing of the laundry room should be cleaned regularly. To the extent possible, avoid using swabs that are too wet; slightly moist or dry mops are preferable.
- Clean and dirty laundry must be handled and stored separately.
- Laundry must not be placed directly on the floor.
- Plastic aprons, gloves and facilities for washing hands should be available.
- If clean laundry is stored in the laundry room, it should be kept in closed cabinets/drawers.
- Hands should be disinfected before handling clean laundry.
- Work clothes and protective clothing should primarily be washed at the workplace.
- If work clothes/protective clothing for practical reasons must be washed in the home, this should be done in a way so that clean laundry does not come into contact with dirty laundry. Private clothes and work clothes shall also be kept separate.
- When handling dirty laundry, a plastic apron and gloves should be worn, and hands shall be disinfected afterwards.
- Clothes shall be washed at 60°C at least and preferably be tumble-dried to further kill off microorganisms.
- If there is a suspicion of infectious disease in a herd, clothing and shoes should be changed 'in the field' before going to another farm, why a set of clean ordinary clothes and shoes should be kept in the car. Used ordinary and protective clothing and not entirely disinfected footwear and other equipment used for the visit are kept in a sealed container or equivalent during transport until they can be disinfected at the workplace. A machine-washable laundry bag for protective clothing to be washed can be used for this purpose.
- If you have used your own boots during the day, these must be carefully cleaned and disinfected. Work shoes shall also be cleaned and disinfected daily.
- In case of suspected epizootic disease, follow instructions issued by authorities.

## CLEANING PROCEDURES

### Office spaces

- The workplace should be furnished to facilitate cleaning. The floor should not be used for storage.
- The principle for cleaning is that the least clean premises are cleaned last. These include areas for cleaning and disinfection of shoes and boots, laundry areas, areas for handling undisinfected equipment, and bathroom/toilets.
- The cleaning products include detergents with surfactant and a combination product with surfactant and alcohol for surface disinfection. If large surfaces need to be disinfected, products with for example peracetic acid may be used.
- Floors should be dry mopped. If necessary, they should be wet mopped and only after dry mopping. In this case, cleaning products with surfactant should be used. If possible, avoid vacuuming as this stirs up particles.
- Surfaces and furnishings should primarily be wiped down with a dry cloth. Use a moistened cloth for severe dirt. Surfaces that have come into contact with potential infectious agents as well as door handles, light switches and similar shall be cleaned with a composite product containing surfactant and alcohol.
- The bathroom/toilet is cleaned last. Gloves shall be used. The fittings and fixtures shall be cleaned from top to bottom. Use a moistened mop, not a wet swab.
- In the bathrooms there must be liquid soap, paper towels, and hand disinfectants.

### Area for handling biological material

- This space should include refrigerator/freezer for the storage of sample material. Disposal of discarded biological material shall be done in a manner approved by the authority.
- Biological material such as blood samples, necropsy material etc. shall primarily be handled and packaged before departing from the farm. In case it is not possible to do so, this shall be done in an area intended for this purpose in the workplace.

- Disposable gloves and products for hand and surface disinfection shall be easily accessible.

## Car

- The car's storage space shall be arranged so that not fully disinfected equipment and used protective clothing and footwear can be stored out of contact with clean equipment and clean clothing.
- Used protective clothing and not fully disinfected equipment are placed in an easily cleaned container such as a plastic crate after the herd visit.
- The inside of the car shall be cleaned on a regular basis and when necessary. Preferably, hard-surface disinfectants (surfactant and alcohol) shall be used for cleaning, together with vacuuming.
- In some cases, for example to avoid contamination of the car (or the yard), it may be appropriate to use shoe covers on the walking shoes when leaving the car and walking across the yard. These shoe covers are removed and discarded in connection with leaving the herd. However, this procedure may be inappropriate during the winter, in which case the extra footwear brought along can be used during the journey home. The walking shoes used in the yard are then transported to the workplace in a plastic crate, where they are disinfected. Remember to disinfect hands after handling shoes or shoe covers.

## Equipment in the car

As the conditions for good hygiene procedures during herd visits are not always optimal, the following hygiene equipment should always be kept at hand in the car or is recommended to be kept in the car:

- Hand disinfectant (alcohol-based)
- Shoe and boot covers
- Disposable coverall
- Disposable gloves
- Hard-surface disinfectant for wiping down equipment (composite products, e.g. moist towels).
- Plastic bags
- Wet wipes (in case soap and water is not available)
- Laundry bag (e.g. water-soluble) for use upon suspicion of infectious disease

- Face masks
- Hair covers
- Plastic crates or equivalent for storage (and for cleaning boots)
- Liquid soap/detergent and brush for cleaning boots
- Paper towels
- Plastic bags for mobile phone
- Visiting socks

#### Computers, mobile phones, instruments, and other equipment

- Sensitive equipment such as computers, mobile phones etc. that are brought into the herd are cleaned/disinfected with a cloth moistened with a composite-type surface disinfectant. Mobile phones should be kept in a plastic bag. Always consider whether this equipment needs to be brought along at all.
- Cases for equipment shall be externally cleaned and disinfected daily.
- Non-disposable equipment is cleaned and disinfected using an alcohol-based disinfectant such as ethanol between each herd and when appropriate, within a herd, between each epidemiological unit or between each animal in case of suspected or known disease. Care should be taken depending on the equipment used. For example, ultrasonic probes cannot withstand all types of disinfectants.

#### Example of equipment and cleaning/disinfection:

- Stethoscopes shall be cleaned and wiped with an alcohol-based disinfectant.
- Castration equipment shall be rinsed in water as soon as possible after use, then washed manually and disinfected.
- Dehorning tools shall be carefully cleaned with a wire-brush and the cord is wiped with a disinfectant.

#### The following procedures apply to artificial insemination equipment in cows:

- The pistolet shall be cleaned and disinfected between each animal and scissors between each herd visit. These shall be sterilized at least once per month in boiling water for 10 - 15 minutes or in a heating cabinet at 160°C for three hours.

- The water thermos shall be emptied and rinsed daily and then allowed to dry (for example by standing upside down overnight) and be washed and disinfected at least once a week.
- The lid on the water thermos and the thermometer shall be easy to clean and disinfect (i.e. the lid shall not be made of cork); these shall be cleaned and disinfected daily.
- The exterior of the insemination kit box shall be wiped off and disinfected daily.
- The liquid nitrogen thermos shall be cleaned at least once every six months.
- All equipment and the insemination kit box (first emptied completely) shall be thoroughly cleaned and, if the material allows, disinfected at least once a month.

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