Faculty of Veterinary Medicine – SGGW

Biosecurity Manual and Isolation Procedures

(based on Biosecurity SOPs applied to the Faculty of Veterinary Medicine, Liège University, Belgium, 2025)

1. Purpose and scope of the document

This Biosecurity Manual sets out the minimum requirements for biological safety at the Faculty of Veterinary Medicine and the Institute of Veterinary Medicine of SGGW. It covers the Small Animal Clinic (Building 22), the Equine Clinic in Wolica, field units (Obory, Żelazna and other experimental farms), teaching and research laboratories, and all locations where animal- or animal-material-based teaching and activities are conducted.

The provisions apply to all employees, PhD candidates, students, contract veterinarians, interns/trainees and other visitors present on Faculty premises.

In the event of suspicion of a notifiable infectious disease, immediately notify the Head of the Department/Clinic, the biosecurity expert (biosecurity-wmw@sggw.edu.pl) and if necessary the competent County Veterinary Officer (PLW).

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2. Basic definitions

Biosecurity – a set of organisational and technical measures intended to limit the transmission of infectious agents between animals, people, rooms and the environment.

Class 1 patient – a patient without signs of infectious disease, requiring standard hygiene measures.

Class 2 patient – a patient with a slightly increased risk of transmission (e.g., long-term hospitalisation, immunosuppressive therapy); enhanced precautions are applied compared to Class 1.

Class 3 patient – a patient requiring barrier nursing (e.g., infectious diarrhoea, purulent wounds, infections with multidrug-resistant bacteria); care is provided in a designated area using additional protective equipment.

Class 4 patient – a patient with suspected or confirmed highly contagious disease or a significant zoonosis; always kept in an isolation unit with restricted access.

Clean zone – an area with no contact with infectious patients (e.g., administrative corridors, offices).

Dirty zone – an area at high risk of contamination (isolation units, boxes/stalls for infectious patients, areas where infectious material is processed).

Personal protective equipment (PPE) – clothing and equipment protecting against contact with infectious material (gown, coverall, gloves, mask, goggles, shoe covers).

3. Biosecurity quality assurance

Quality assurance in biosecurity is part of the WMW biological safety management system and includes: oversight of procedures (SOPs), monitoring of events, internal audits, corrective actions and education of students and staff.

Scientific oversight is provided by **the Rector's Biosecurity Commission** in cooperation with **the Faculty Biosecurity Team** and the **Heads of Departments, Clinics and Laboratories**. Each unit reports irregularities, incidents and needs (e.g., lack of PPE, infrastructural constraints, increased hospital-acquired infections, exposure events) to the Biosecurity Team. The Team collects data (event description, risk, location, persons involved, possible causes), analyses them and issues recommendations and an action plan.

Example corrective actions (model): (1) practice audit, (2) validation of cleaning and disinfection where justified (e.g., environmental swabs), (3) implementation of improvements and re-assessment.

4. General biosecurity principles at the Faculty of Veterinary Medicine, SGGW

4.1 Work clothing and footwear

In clinics and laboratories, work clothing intended exclusively for on-duty use (scrubs, gown, etc.) and closed footwear that is easy to clean and disinfect are mandatory.

Work clothing must be changed at least once daily, or more frequently if contaminated with biological material (blood, faeces, urine, secretions).

Clinic footwear must not be used outside the clinic; it should be transported in a closed, impermeable container.

In isolation units for Class 3 and Class 4 patients, additional single-use coveralls, protective gloves, and shoe covers are used.

4.2 Hand hygiene

Hands must be washed with soap and water and disinfected with an appropriate product before and after contact with each patient, after removing gloves, after contact with biological material, and after removing protective clothing.

Nails should be short; jewellery on hands and wrists is not permitted during clinical work.

In care areas, dispensers with hand disinfectant and instructions for proper handwashing and disinfection must be available (detailed guidance at the end of this manual).

4.3 Animal handlers, movement of people and animals

Smoking and the use of other intoxicants are prohibited in clinics.

Animals on clinic premises must be kept on a lead/halter.

Physical contact is permitted only with one's own animal; touching other patients is prohibited.

Without staff assistance, animal owners/handlers may remain in the waiting room and adjacent toilets and in designated public areas (e.g., cafeteria/canteen – if applicable). They may enter other hospital areas only with staff.

Any child visiting WMW must be supervised by an adult.

Access to dirty zones is restricted to authorised persons (clinical staff, technicians, students assigned to a given duty).

Where possible, Class 1 and 2 patients should be handled first, and Class 3 and 4 patients last.

Routes for transporting infectious patients must be planned to minimise contact with other animals and people; after each transport, surfaces must be cleaned and disinfected.

Contacts between staff/students and patients may facilitate pathogen spread (including zoonotic). Such contacts must be limited to what is necessary.

Visits to isolation units are limited to the minimum required; entry and exit are recorded; student presence is strictly controlled. Where possible, prefer non-contact observation (e.g., cameras).

During teaching involving multiple patients: wash and disinfect hands between patients, and regularly wipe stethoscopes and equipment with alcohol/disinfectant.

4.4 Equipment, surfaces and biological material

Reusable equipment (e.g., stethoscopes, thermometers, probes) is dedicated to a specific patient in isolation and stored in a labelled container next to the cage/stall.

After contact with a patient, equipment must be cleaned with detergent and then disinfected with a veterinary-approved disinfectant, observing the manufacturer's recommended contact time.

Biological samples for testing (blood, swabs, faeces, urine) must be placed in tightly closed tubes and put into an additional bag or box; the request form must clearly describe the suspected disease and potential zoonotic risk.

Surfaces in contact with an infectious patient (tables, cages, floors) must be cleared of organic matter, washed with detergent, rinsed, and then disinfected.

4.5 Patient care

For basic hygiene and to reduce infection risk, patients should stay in a clean cage/stall and be kept as clean as possible.

Water and feed containers (buckets/bowls) must be replaced regularly and washed.

Faeces must be removed immediately after defecation, and the surface washed.

If a patient urinates in the building, urine must be removed and the floor washed and dried as quickly as possible.

The patient's surroundings must be kept orderly: no scattered medicines/materials, no bedding outside the cage/stall, no students' personal items; after use, equipment and materials must be returned to their place.

Additional hygiene requirements for specific sectors are described in the relevant sections of the clinic regulations.

4.6 Waste and carcass transport

Infectious waste (dressings, disposable equipment, excreta from isolation units) is collected in labelled red containers/bags and disposed of according to the contract by an external company.

Disposable sharps (needles, blades) are discarded immediately after use into rigid medical waste sharps containers. Measures to prevent needlestick and other sharps injuries must be applied.

Waste from suspected/confirmed infectious/zoonotic patients and all waste from isolation units must be treated as infectious waste and disposed of in appropriate containers/bags for this fraction, in double watertight containers/bags and specially labelled.

Clothing contaminated with biological material is placed in soluble bags and sent to the laundry according to internal procedures.

Carcasses of animals suspected of infectious diseases must be secured in double bags, labelled with information about the suspected disease, and stored in a cold room until collected by an authorised entity.

During working hours on weekdays, immediate transport is required; in the evening and at weekends, transport must be carried out the next working day in the morning; until then, the carcasses must be stored in the cold chamber.

After transport, the means of transport must be thoroughly cleaned and disinfected.

4.7 Medicines – storage and handling

Each clinical unit maintains a medicine depot and records receipts and issues/consumption in accordance with WMW procedures and national regulations.

Store according to the label: temperature, protection from light, cleanliness, and without humidity/temperature fluctuations.

Only authorised persons may access the pharmacy; students only with permission and/or under supervision.

Opioids, ketamine and euthanasia agents: store in a safe; access only for authorised persons with appropriate records.

Do not reuse needles/syringes for administration (exception: oral use after washing).

Prepare hazardous medicines while wearing PPE and without unprotected persons nearby.

Do not store non-returnable medicines – dispose of them as waste.

4.8 Food and beverages

Eating, drinking and storing food/beverages are prohibited in areas where animals are examined, treated or hospitalised.

This prohibition also applies in zones where biological samples are processed and where medicines are prepared or stored (including consulting rooms, procedure/operating rooms, laboratories, admissions area, documentation rooms, corridors).

Permitted only in designated areas: canteen/cafeteria (if applicable), staff kitchens, staff offices (if permitted), outside clinical wards, student on-call rooms.

Do not store food in refrigerators/freezers intended for medicines or biological material.

Clinical clothing and clinical equipment (scrubs, gowns, work shoes, stethoscopes, etc.) must not be taken into canteens and cafeterias.

Table I lists examples of microorganisms by risk class in humans and animals, Table II the main detergents and disinfectants used in veterinary medicine, and Table III the antimicrobial spectrum of disinfectants.

5. Training and documentation

Newly employed staff, contract veterinarians and PhD candidates must complete introductory biosecurity training before starting work with patients.

Students are familiarised with biosecurity rules during health and safety classes and during introduction to clinical work.

Refresher training for all staff is conducted after each significant update of procedures.

Participation in training is confirmed by signature on an attendance list or electronically and stored in Faculty documentation.

6. Patients

6.1 Classification of patients by infectious risk

Class 1 – patients without signs of infectious disease; routine hygiene measures.

Class 2 – patients with a slightly increased risk (e.g., long-term hospitalisation, immunosuppressive therapy).

Class 3 – patients requiring barrier nursing (e.g., infectious diarrhoea, abscesses, infections with multidrug-resistant bacteria).

Class 4 – patients with suspected or confirmed highly contagious disease or serious zoonosis (e.g., glanders, salmonellosis with leukopenia, rabies, foot-and-mouth disease, bovine tuberculosis). These patients are kept in an isolation unit with full control of entries and exits.

The final decision on the patient's classification is made by the duty veterinarian, who, in the case of a Class 4 patient, immediately informs the Faculty Biosecurity Coordinator and, if necessary, the relevant Veterinary Inspectorate.

6.2 Floor lines (access zones)

In selected areas of WMW, directional/colour lines may be used to facilitate orientation and enforcement of the sanitary regime. The line colour corresponds to movement permissions:

Yellow – restricted access (e.g., hospitalisation corridors, laboratories).

Red – no access without the veterinarian's permission (e.g., operating theatre, carcass/post-mortem material storage, isolation units).

6.3 Hospitals – basic rules and admission procedures

Cages/stalls for infectious patients and their immediate surroundings must be clearly labelled (information card/board on the door).

Labelling must include the patient's risk class.

Persons handling an infectious patient are responsible for passing information to everyone who may work with the patient or in their environment (staff, students).

Infectious events/risks must be reported to the WMW Biosecurity Coordinator / Head of the Clinic/ Laboratory.

If, during a telephone call, the client reports symptoms suggestive of an infectious disease (e.g., acute diarrhoea, fever, ataxia, abortion), the reception schedules an appointment only after the veterinarian's approval and confirmation of available capacity (room/isolation). The owner must be informed to remain with the animal in the vehicle until the attending veterinarian comes to them (detailed procedures are described in specific SOPs).

If a patient with infectious signs arrives unannounced at reception, reception immediately contacts the duty team and arranges redirection to an exam room/isolation while minimising environmental contamination.

A patient suspected of a disease subject to official control or posing a risk disproportionate to the hospital's ability to secure (risk to other patients/staff) may not be admitted. The decision to refuse admission is made only by a veterinarian (not a student and not an intern), in accordance with local on-duty competencies.

6.4 Disinfection – general principles

Disinfectants work less effectively in the presence of organic matter. Product selection must always take into account the hazard risk (basic disinfectants are provided in the tables).

Wear appropriate clothing and PPE; when splash risk exists: mask/face shield/goggles, waterproof clothing, protective footwear.

Remove visible contamination; if using a hose, minimise aerosolisation.

Wash with water and detergent plus scrubbing/mechanical removal of biofilm.

Rinse thoroughly (detergent residues may deactivate some disinfectants).

Allow surfaces to drain/dry (so as not to dilute the disinfectant).

Apply disinfectant and maintain the required contact time.

Remove excess (water/paper towels/mop/squeegee) and rinse or allow the cage/stall to dry according to the label before the next patient.

Multi-use rooms (tables, exam rooms, procedure stalls) must be cleaned and disinfected after each patient, regardless of infectious status.

After completion: remove PPE and wash hands.

Non-standard decontamination is performed only by persons trained to use enhanced PPE.

Solutions in footbaths/trays must be replaced regularly and always when contaminated with bedding/dirt.

Reusable equipment must be cleaned and disinfected before storage.

6.5 Operating theatres and pre-operative areas

Entry into clean zones (e.g., operating theatres – beyond the red line) requires clean gowns dedicated to that area.

Shoe covers or footwear dedicated to clean zones are mandatory.

Gowns are used exclusively within the unit – they must not be worn outside the building (including commuting).

The surgical team and the patient's surgical field must be prepared aseptically and asepsis maintained throughout the procedure.

Persons not involved in the procedure are prohibited from entering.

Hand hygiene between patients and after contact with a patient (to avoid contaminating door handles, countertops, equipment). Gloves do not replace hand washing and disinfection; gloves must be discarded after each patient.

Faeces and urine must be removed immediately from any operating-block area; if required, rinse and disinfect the floor with a properly diluted agent.

Equipment (belly bands, hobbles, oral syringes, endotracheal tubes, etc.) must be cleaned and disinfected between uses.

Daily cleaning and environmental disinfection must be performed rigorously.

After each procedure, all surgical equipment, trolleys and stands must be moved aside and cleaned appropriately. Blood and other contamination must be removed and disposed of in red waste containers. The room is pre-rinsed to remove all organic material from the floor, and the floor cleaned/washed with water and detergents.

Summary tables

The following tables summarise access zones, infectious risk classes, minimum barrier measures, rules for handling biological samples and a quick pathway for incidents (injury/exposure).

Table 1. Access lines/zones (floor colours)

Colour	Meaning	Example zones (indicative)
Yellow	Restricted movement – entry only for authorised persons / according to the zone instructions.	Hospitalisation corridors, laboratories, technical backrooms.
Red	No entry without the veterinarian's permission / authorised staff.	Operating theatre, post-mortem material storage, isolation units/Class 4 zones.

Table 2. Infectious risk classes and minimum requirements

Class	Characteristics	Preferred location	Minimum measures
1–2	No suspicion of infectiousness / standard cases.	General hospitalisation zones and consulting rooms.	Hand hygiene; clean after each patient; equipment cleaned and disinfected after use.
3	Moderate infectious risk (e.g., diarrhoea without severe features); MDR – at clinician's discretion.	Barrier nursing zone (separated corridor/boxes).	Footbath/tray; hand hygiene; disposable gown; gloves; restricted movement; zone-dedicated equipment.
4	High infectious/zoonotic risk or particularly contagious disease; strict isolation.	Isolation unit (isolation ward).	Footbath/tray; hand hygiene; coverall/barrier clothing; gloves; dedicated footwear; equipment dedicated to the patient; restricted entry.

Table 3. Barrier measures – comparison of Class 3 and Class 4 zones (minimum)

Element	Class 3 – barrier nursing	Class 4 – isolation
Entry to the zone	Only when necessary; limit the number of persons.	Authorised persons only; entries maximally limited.
Footbath/tray	Mandatory before/after entering the zone and (if required) the box/stall.	Mandatory at entry points and between zones/anterooms.
Hand hygiene	Wash + disinfect before/after the patient; between patients.	As in Class 3, additionally in anterooms according to instructions.
Barrier clothing	Disposable gown (preferably labelled for the patient).	Dedicated coverall/waterproof barrier clothing; change according to anteroom rules.
Gloves	Disposable; change between patients.	Disposable; change between patients; mandatory in the isolation unit zone.
Footwear	Work footwear + footbath/tray.	Footwear dedicated to isolation; cleaning/disinfection per procedure.
Equipment and materials	Zone-dedicated; disinfect before moving outside Class 3.	Dedicated to the patient; remove only after decontamination according to procedure.
Owner visits	Only exceptionally, supervised; without entering the box/stall.	Generally not allowed; exceptions only by veterinarian's decision and with staff escort.

Table 4. Biological samples from infectious/suspected patients – minimum rules

Stage	**Requirement**
Labelling	Clearly label: patient, material, date/time, suspected pathogen/risk (zoonosis).
Packaging	Tightly sealed primary container + secondary packaging (double packaging).
Clean outer surface	Avoid contamination of the outside of the package; if contaminated – wipe and repackage.
Documentation	On the request form, clearly indicate suspected disease/pathogen and biosecurity requirements.
Internal transport	Transport in a leak-proof container; deliver to the laboratory according to WMW procedure.

Note: *The content of the tables is intended as a working summary. In the event of any discrepancies, the current procedures of the Faculty of Veterinary Medicine (WMW) and the decisions of the attending/supervising veterinarian shall take precedence.*

Table 5. Quick response pathway – injury/exposure

Event	**Immediate actions**
Cut / needlestick	Stop work → inform supervisor → remove gloves → wash the wound with soap and water → disinfect → apply a dressing → follow the occupational health/exposure pathway; do not return to high-risk tasks without the supervisor's decision.
Damaged gloves/clothing	Stop the activity → remove damaged PPE → perform hand hygiene → replace PPE → report exposure if contact with skin or mucous membranes occurred.
Feeling unwell	Inform the supervisor → leave the room with an accompanying person → further steps as instructed (on-site medical unit / emergency services).
Life-threatening emergency	Call 112 (or 999) → provide first aid and secure the area → inform the Faculty coordinator and Dean via the instructor.

Algorithm 1. Entry and Exit – Class 3 vs Class 4 Zones

Abbreviated procedure (minimum requirements)

Class 3 – Barrier Nursing	Class 4 – Isolation
• Disinfection mat/footbath – entry • Hand hygiene (washing + disinfection) • Disposable gown • Disposable gloves • Perform “dirty” procedures last • Exit: disinfection mat/footbath + glove disposal • Hand hygiene + labeling samples/documentation with clean hands	• Entry through the anteroom: leave personal items • Put on isolation-dedicated clothing and footwear • Hand hygiene + gloves • Between patients: change gloves (and clothing as instructed) • Clean/disinfect equipment before leaving the zone • Exit through the anteroom: remove PPE in order “dirty → clean” • Hand hygiene; anteroom doors must remain closed at all times

Common RuleMinimize entries; assign dedicated staff; manage Class 3/4 patients last; clean and disinfect immediately after contamination.

Detailed procedures

SOP 1. Admission of a patient with suspected infectious disease to the Equine Clinic

Purpose: Purpose: ensure safe admission and handling of an equine patient with suspected infectious disease, while minimising the risk of transmission to other animals and people.

Scope: Scope: applies to all equine patients reported by phone or brought to the Equine Clinic (Wolica) with symptoms suggestive of infectious disease.

Responsible persons: Responsible persons: duty veterinarian (medical decision and classification), attending veterinarian (clinical management), technicians/stable staff (support, cleaning/disinfection), reception (triage information and communication).

I. Admission procedure for a potentially infectious patient:

- **Telephone notification:** The registration staff/on-call veterinarian collects information on clinical signs, their duration, vaccination status, contact with other horses, and the animal's place of origin.
- **Patient qualification:** Based on the history, the on-call veterinarian classifies the patient. Isolation includes, inter alia, horses with fever, acute diarrhea, leukopenia, neurological signs accompanied by fever, suspected zoonotic disease, or a notifiable disease.
- **Pre-arrival arrangements:** Prior to the patient's arrival, the on-call veterinarian informs the clinic staff and the Head of the Clinic, designates an isolation stall, and determines the route from the gate to the stall.
- **Preparation of the isolation unit:** The isolation stall is prepared with fresh bedding, a set of dedicated equipment (stethoscope, thermometer, buckets), waste containers, disinfectants, and a warning sign.
- **Arrival procedure:** Upon arrival, the owner remains in the designated area; the horse stays in the trailer until staff wearing protective clothing (coveralls, gloves, protective footwear, and, if required, mask and eye protection) arrive.
- **Transfer to isolation:** The horse is led directly to the designated stall, bypassing shared corridors and paddocks; contact with other animals is minimized.
- **Owner access:** The owner does not enter the clinic premises and remains outside; administrative formalities are completed outside the facility or via remote communication.
- **Clinical assessment:** After the horse is placed in the stall, a full clinical examination is performed and diagnostic samples are collected in accordance with current guidelines; if a notifiable disease is suspected, the competent District Veterinary Officer is notified.
- **Decontamination of the route:** The route used by the horse is immediately cleaned of visible contamination and disinfected.

- **Post-discharge procedure:** After discharge, the stall must be labeled "to be cleaned and disinfected." Only after thorough cleaning and disinfection may the stall return to "ready" status.
- **Release of the stall:** For isolation patients, the decision to release the stall is made by the attending veterinarian or the Head of the Clinic.

II. Care of patients in the isolation unit

1. **Anteroom:** Leave personal belongings, put on dedicated clothing and footwear; keep doors closed at all times.
2. **Hand hygiene:** Wash and disinfect hands before and after contact with each patient using an appropriate agent. Disposable gloves and dedicated protective clothing are mandatory.
3. **Contaminated surfaces/equipment:** Clean and disinfect immediately (feces, secretions, blood); this is the responsibility of the staff caring for the patient.
4. **Prevention of environmental contamination:** Avoid spreading contamination with soiled gloves or footwear; use disinfection mats/footbaths as provided.
5. **Cleanliness of the isolation unit:** The attending veterinarian is responsible for maintaining cleanliness in the isolation unit.
6. **Assigned personnel:** Individuals assigned to the case (students/interns) are also responsible for order in the anterooms/vestibules (worktops, door handles, replenishment of mats/footbaths, general tidiness); technical staff monitor the area and replenish supplies as needed.
7. **Food prohibition:** Bringing in or consuming food is strictly prohibited.
8. **Restricted access:** Entry is permitted only when necessary and only to authorized personnel; enter the stall only when direct contact with the patient is required.
9. **Client access:** Clients do not enter the isolation unit as a rule; exceptions require approval of the attending veterinarian and must always be accompanied by staff.
10. **Dedicated equipment:** Equipment (buckets, tools, accessories) is dedicated exclusively to the isolation area.
11. **Single-use materials:** Use for one patient only or dispose of immediately; do not transfer between patients.
12. **Items brought into infectious areas:** Bring in only essential items, after consultation with the attending veterinarian.
13. **Medications/fluids:** Medications and fluids used in isolation do not return to the ward pharmacy.
14. **Patient-dedicated instruments:** Equipment and accessories dedicated exclusively to the isolation patient (e.g., stethoscope, thermometer, brush, hoof pick) are stored at the stall and disinfected after discharge.
15. **Exit procedure:** Decontaminate equipment, dispose of waste, perform hand hygiene, and remove barrier clothing in the anteroom in the order "dirty → clean."
16. **Biological samples:** Must be clearly labeled for risk, securely packaged (double packaging recommended), with no contamination of the outer surface; information on the suspected pathogen must be included on the request form.

17. **Post-discharge actions:** Immediately notify cleaning/technical staff; provide information on the suspected pathogen and required barrier measures. Dispose of all single-use materials as medical waste in accordance with procedures. Subject reusable equipment to decontamination (on-site pre-disinfection followed by washing/disinfection/sterilization).

III. Entry into the isolation unit

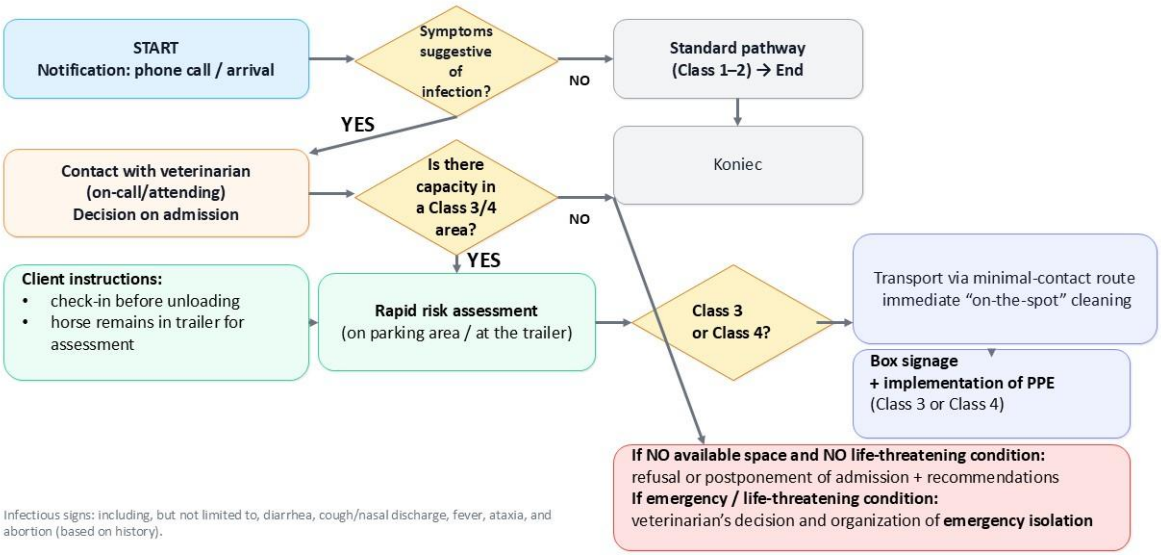
1. Verify that the patient's documentation specifies the risk class and the required level of personal protective equipment (PPE).
2. Record the planned entry in the "Isolation Unit Entry and Exit Log."
3. In the clean zone, remove outerwear and personal items; put on clinical clothing.
4. In the anteroom, don the required PPE: disposable coveralls or gown, gloves, dedicated footwear or shoe covers, and, if required, mask and eye protection.
5. Disinfect hands before putting on gloves.
6. Pass through the disinfection mat or footbath according to signage.
7. Enter the patient's stall, avoiding contact with unnecessary surfaces.

IV. Exit from the isolation unit

1. Before exiting, clean and disinfect the diagnostic and therapeutic equipment dedicated to the patient; leave the equipment in the isolation unit in the designated container.
2. Place disposable materials and waste in the appropriate infectious waste container.
3. When leaving the stall, pass through the disinfection mat or footbath.
4. In the outer anteroom, remove PPE in the following order: gloves → coveralls/gown → shoe covers → mask/eye protection, disinfecting hands after each step.
5. Place clothing and disposable items in infectious waste containers; send reusable workwear for laundering.
6. After leaving the anteroom, thoroughly wash hands with soap and water and apply a disinfectant.
7. Record the exit time in the "Isolation Unit Entry and Exit Log."

Algorithm 1. Triage and Admission of a Patient with Suspected Infection

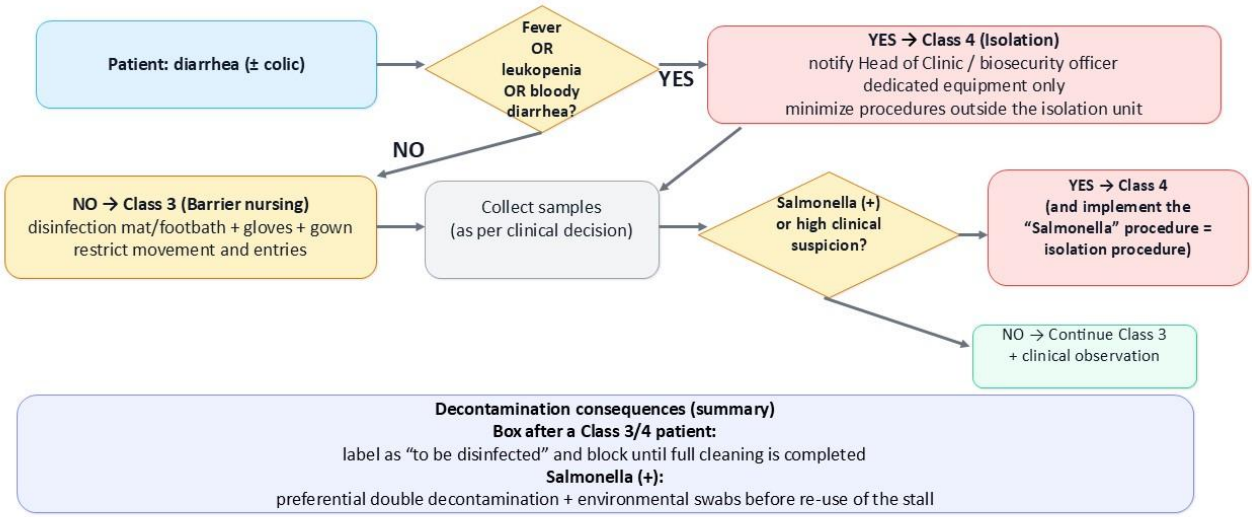
Minimal-contact pathway (from phone call/reception to risk class assignment)



Infectious signs: including, but not limited to, diarrhea, cough/nasal discharge, fever, ataxia, and abortion (based on history).

Algorithm 2. Diarrhea / Salmonella / Colic – Risk Classification

Operational decision shortcut: Class 3 vs Class 4 + decontamination consequences



Note: Risk classification is based on clinical assessment and local procedures.

Table 1. Criteria for refusal of admission/hospitalisation (Equine Clinic)

Situation/suspicion	Example signs	When refusal is possible	Notes / alternative
Notifiable disease / epizootic suspicion	Depending on the disease (per legal requirements).	If legal requirements or epidemiological risk prevent safe admission.	Immediately contact the duty veterinarian and initiate notification to the competent PLW.
Suspected viral respiratory disease	Cough, nasal discharge, fever < 14 days.	If there is no life-threatening condition and care is possible outside hospitalisation.	Consider outpatient consultation via a minimal-contact pathway or isolation if necessary.
Suspected strangles	Submandibular lymph node swelling, nasal discharge, cough, fever; suspected guttural pouch empyema.	If there is no life-threatening condition and no indication for urgent hospital procedure.	If necessary – Class 4 isolation and strict barrier nursing.
Suspected EHV-1 (neurological form)	Acute ataxia with fever or recent fever history; possible other cases in the herd.	If there is no life-threatening condition and the risk to other patients is high.	Requires strict isolation and restriction of people/equipment movement.
Abortion (mare)	Abortion without life-threatening signs in the mare.	If mare hospitalisation is not required and infectious risk is significant.	Placenta and foetus may be submitted for diagnostics/post-mortem according to procedure.

SOP 2. Admission of a small animal patient with suspected infectious disease to the Small Animal Clinic (Building 22)

Purpose: Purpose: ensure safe admission of a small animal patient with suspected infectious disease, while limiting the risk of transmission to other animals and people.

Scope: Scope: applies to all dogs/cats and other small animals reported by phone or brought to the Small Animal Clinic with symptoms suggestive of an infectious disease.

Responsible persons: Responsible persons: duty veterinarian (triage and classification), attending veterinarian (clinical management), technicians (support and cleaning), reception (communication and instructions to clients).

I. Admission procedure for a potentially infectious patient

1. **Initial triage:** The registration staff member or on-call veterinarian collects a standardized history, including clinical signs and their duration, fever, vomiting/diarrhea (bloody or non-bloody), cough/sneezing, skin lesions (pruritus, alopecia), vaccination status (including rabies), contact with other animals, stays in boarding facilities or at shows, the animal's origin, and potential human exposure (e.g. bites, contact with immunocompromised persons).
2. **Risk classification:** Based on the history, the on-call veterinarian assigns the patient to a risk category. Strict isolation (Class 4) includes, in particular: suspected parvovirosis (dogs) or panleukopenia (cats), acute bloody diarrhea and/or fever, diarrhea with leukopenia, neurological signs with fever, suspected leptospirosis (zoonosis), suspected rabies, or any notifiable disease. Barrier nursing (Class 3) may include patients with infectious respiratory signs (CIRDC/feline upper respiratory disease), dermatophytosis (ringworm), mange, non-severe diarrhea, and patients with wounds or skin infections suspected of MDR/MRSA, at the clinician's discretion.
3. **Coordination:** The on-call veterinarian informs the duty staff and designates: (1) the isolation room/cage or examination room, (2) the route from the parking area to the entrance, and (3) the staff member responsible for communication with the owner.
4. **Preparation before admission**: Prepare fresh absorbent pads/bedding, a litter tray and scoop (cats) or absorbent mats (dogs), dedicated equipment (stethoscope, thermometer, bowls/buckets), an infectious waste container, cleaning and disinfection agents, and warning signage for the door.
5. **Owner instructions:** Upon arrival, the owner must not enter the waiting room, but call reception from the vehicle and wait for staff. The animal remains in the vehicle until staff arrive wearing PPE.
6. **Patient transfer:** Staff wearing PPE (minimum: barrier gown/coveralls and gloves; mask and eye protection if aerosol risk exists) receive the patient in a designated area. Cats are transported only in closed carriers. Dogs are placed on a trolley and, in cases of vomiting/diarrhea, on absorbent pads/mats to limit environmental contamination; where possible, use an easily disinfected container.

7. **Direct routing:** The patient is taken directly to the designated examination room or isolation unit, bypassing shared corridors and waiting areas; contact with other animals is minimized.
8. **Administrative procedures:** Consents, history-taking, and payments are completed outside the clinical area or remotely. Owners must comply with hand hygiene and staff instructions.
9. **Clinical examination:** Once in the examination room/isolation unit, a clinical examination is performed and diagnostic samples are collected according to guidelines. If a notifiable disease is suspected, act in accordance with legal requirements and immediately contact the competent District Veterinary Officer (DVO).
10. **Route decontamination:** The patient's transport route (floors, door handles, trolley/transport equipment) is immediately cleaned of organic contamination and disinfected according to procedure, observing the disinfectant contact time.
11. **Post-discharge:** After discharge, the room/cage is labeled "TO BE CLEANED AND DISINFECTED." Only after thorough cleaning and disinfection may it return to "READY" status. Release of a Class 4 isolation unit is decided by the attending veterinarian in consultation with the Head of the Clinic or the biosecurity officer.

II. Emergency procedure: unregistered patient presenting at reception (immediate triage)

Applies when a dog or cat presents without prior registration and history or observation suggests infectious or zoonotic risk. The objective is immediate separation from the waiting area and other animals.

1. Reception immediately informs the on-call veterinarian (and/or technician) and instructs the owner not to enter the waiting room. The patient must not wait in a shared area.
2. The owner and patient are directed outside (preferably to the vehicle) and wait for staff; waiting outside the building is permitted until the attending veterinarian arrives.
3. Small animals must be immediately placed in a closed plastic carrier/container that is easy to decontaminate. If the owner does not have a carrier, a hospital carrier is used and disinfected after use.
4. The patient is placed on a trolley and, in cases of vomiting/diarrhea, on absorbent pads/mats, and transported via the shortest designated route directly to the infectious examination room or isolation unit, bypassing the waiting area. Where possible, use an elevator to the infectious zone.
5. During transport, limit contact with other animals and people; temporarily stop corridor/elevator traffic if necessary.
6. After patient passage, immediately clean and disinfect the transport route, particularly floors, door handles, handrails, reception counters, elevator buttons, and touch surfaces.
7. In the presence of visible contamination (feces, vomitus, secretions), cleaning and disinfection must be performed immediately, and the area labeled "DISINFECTION IN PROGRESS" until completion.

III. Care of patients in the isolation unit

1. Anteroom: Leave personal belongings; keep doors to the infectious area closed. Clean and dirty zones apply according to local signage.

2. Hand hygiene: Mandatory before and after each patient contact and after glove removal. Disposable gloves are mandatory; barrier clothing according to risk class.
3. Immediate cleanup: Remove feces, vomitus, blood, and secretions immediately; then wash and disinfect surfaces and equipment. Organic matter must always be removed prior to disinfection.
4. Avoid cross-contamination: Do not touch door handles, phones, or shared equipment with contaminated gloves. Use disinfection mats/footbaths and dedicated footwear or shoe-change zones.
5. Responsibility: Cleanliness in the infectious area is the responsibility of staff working with the patient; do not delay urgent cleaning awaiting technical staff.
6. Assigned personnel: Students/interns assigned to the case maintain order in anterooms/vestibules (worktops, handles, replenishment of supplies, replacement of mat/footbath solutions). Technical staff monitor and replenish supplies.
7. Restricted access: Enter isolation only when necessary and only authorized personnel; enter cages/rooms only when patient contact is required.
8. Owner access: Owners do not enter isolation as a rule; exceptions require approval of the attending veterinarian and must be accompanied by staff with appropriate PPE.
9. Dedicated equipment: Bowls, buckets, thermometers, stethoscopes, litter trays/scoops, and other accessories are dedicated to the isolation area, preferably to the individual patient. Equipment must not leave the area without decontamination.
10. Single-use materials: Use only for that patient or dispose of; do not transfer between patients.
11. Medications/fluids: Medications and fluids used in isolation do not return to the general store.
12. Biological samples: Clearly label with risk, package securely (double packaging recommended), and transfer according to procedure without contaminating the outer surface.
13. Post-discharge actions: Immediately notify cleaning/technical staff, providing information on the suspected pathogen and required barrier measures. Dispose of single-use materials as infectious waste. Decontaminate reusable equipment (on-site pre-disinfection followed by washing/disinfection/sterilization).

IV. Entry into the isolation unit

1. Verify that the patient record specifies the risk class and required PPE level.
2. Record the planned entry in the “Isolation Unit Entry and Exit Log.”
3. In the clean zone, remove outerwear and personal items; put on clinical clothing.
4. In the anteroom, don required PPE: disposable coveralls or gown, gloves, dedicated footwear or shoe covers, and mask/eye protection if required.
5. Disinfect hands before donning gloves.
6. Pass through the disinfection mat or footbath according to signage.

V. Exit from the isolation unit

1. Before exit, clean and disinfect patient-dedicated diagnostic and therapeutic equipment; leave it in the isolation unit in the designated container.

2. Place disposable materials and waste in appropriate infectious waste containers.
3. When leaving the isolation area, pass through the disinfection mat or footbath.
4. In the outer anteroom, remove PPE in the following order: gloves → coveralls/gown → shoe covers → mask/eye protection, disinfecting hands after each step.
5. Place disposable clothing and items in infectious waste containers; send reusable workwear for laundering.
6. After leaving the anteroom, thoroughly wash hands with soap and water and apply a disinfectant.
7. Record the exit time in the "Isolation Unit Entry and Exit Log."

Algorithm 1. Triage and Admission of a Patient with Suspected Infection – Dog/Cat

Minimal-contact pathway (from phone call/reception to risk class assignment)

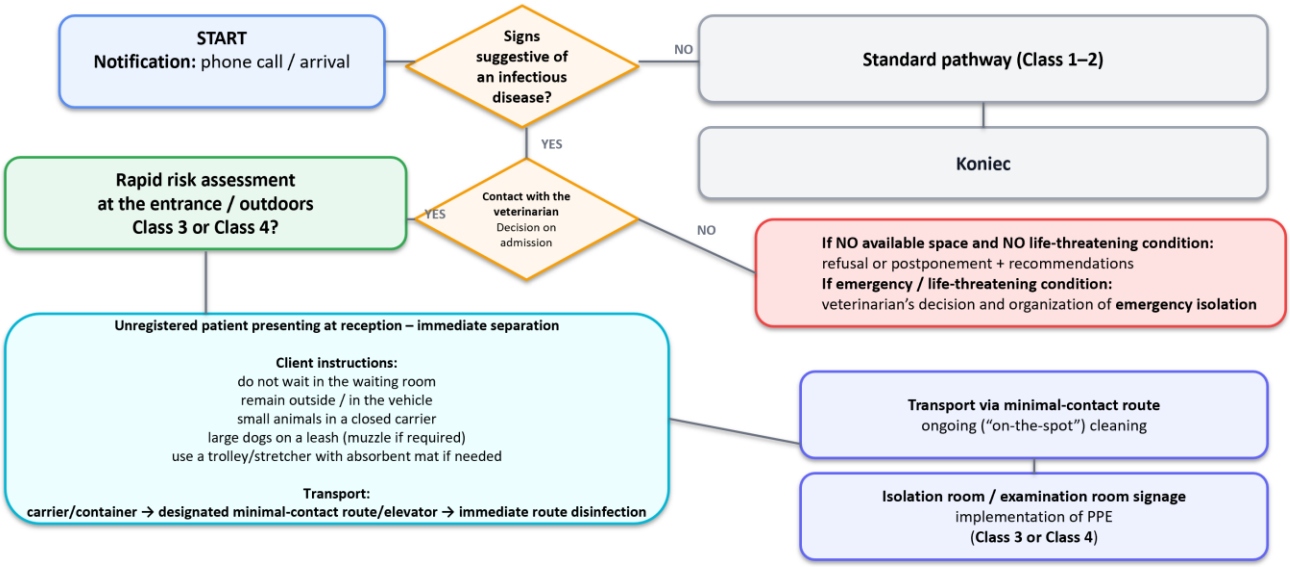


Table 1. Criteria for refusal of admission/hospitalisation (Small Animal Clinic)

Situation/suspicion	Example signs	When refusal is possible	Notes / alternative
Notifiable disease / epizootic suspicion	Depending on the disease (e.g., suspected rabies; exposure after bites).	If legal requirements or the inability to secure safely prevents admission.	Immediately contact the duty veterinarian and initiate notification to PLW; minimise human exposure.
Suspected parvovirosis/panleukopenia	Acute diarrhoea (often haemorrhagic), vomiting, apathy, fever; rapid deterioration in young animals.	If no isolation is available and the patient is not life-threatening or can be safely referred.	Prefer Class 4 isolation; consider minimal-contact admission if clinically required.
Suspected infectious respiratory disease	Cough, sneezing, nasal discharge, fever; exposure to hotel/exhibition.	If hospitalisation is not indicated and the risk to other patients is high.	Consider outpatient visit via a minimal-contact pathway or Class 3 barrier nursing.

SOP 3. Farm visits – biosecurity procedure during field work

Purpose

To ensure the safe conduct of field visits to patients with suspected infectious disease and to minimize the risk of pathogen transmission between animals, farms, and humans (including zoonoses).

Scope

All farm visits (cattle, pigs, sheep/goats, poultry, and other production animals) carried out by Faculty of Veterinary Medicine (WMW) staff/students when there is suspicion of an infectious/zoonotic disease or a notifiable disease.

Responsibilities

Attending veterinarian (field visit leader), on-call veterinarian (triage/qualification), technician/nurse (if involved), driver (if applicable), farm personnel (within agreed activities), students/trainees (under supervision only).

Definitions (summary)

- **"Farm"** – a production animal facility
- **"Suspected infectious disease"** – clinical signs or history indicating an infectious pathogen
- **"Notifiable/officially controlled disease"** – a disease requiring legally mandated procedures and notification of competent authorities (e.g. District Veterinary Officer), in accordance with current Polish/EU regulations

I. Pre-departure preparation (triage and biosecurity planning)

1. **Notification and preliminary history:** Collect data on species, age, number of sick/dead animals, clinical signs (e.g. diarrhea, cough, dyspnea, abortions, neurological signs), duration, treatment administered, vaccination status, recent animal introductions, movement of people/vehicles, presence of wildlife, and herd disease history.
2. **Biosecurity level classification:** Assign the visit to a biosecurity level (standard / increased / very high – notifiable/officially controlled disease). If there is justified suspicion of a notifiable disease, consult the WMW procedure before departure (e.g. contact the District Veterinary Officer or management).
3. **Visit sequencing:** If other farms are scheduled on the same day, apply the "lowest risk to highest risk" principle (clean → dirty). Schedule high-risk visits at the end of the day; after a high-risk visit, avoid visiting other farms on the same day.
4. **Logistics planning:** Determine the parking location ("clean" zone), meeting point, minimum number of people in contact with animals, preparation of animals for

examination (isolation, preparation of a pen/area), restriction of unauthorized persons, and access to water and an area for PPE removal.

5. **Equipment selection:** Take only essential equipment in containers that are easy to disinfect; prepare sampling kits (double packaging), waste containers, sharps containers, and disposable mats/protective foil (if used).
6. **PPE preparation:** Prepare appropriate PPE (coveralls/gowns, gloves, protective footwear/boot covers, masks/eye protection according to risk). Ensure availability of hand hygiene products.
7. **Vehicle readiness:** Before departure, ensure the vehicle is clean and equipped with waste bags, a container for contaminated clothing, cleaning and disinfection agents, and the field-visit checklist.

II. Arrival at the farm and zone organization

1. Park in the designated "clean" zone, away from manure/slurry and animal traffic routes; avoid driving through the farmyard unless necessary.
2. Restrict movement of people and equipment: only personnel essential for the examination enter animal areas.
3. Establish "clean" and "dirty" zones where possible: PPE donning/doffing area, waste bag area, and a hand disinfection point.
4. Whenever possible, examine animals in locations that limit environmental contamination (e.g. a designated pen/stall). Animals with infectious signs should be examined last within the farm.

III. Isolation of animals suspected of infectious disease on the farm

1. Do not allow the animal to access shared waterers/feeders or have nose-to-nose contact with other animals.
2. Suspend animal movement in that part of the farm until isolation is prepared; limit personnel working with the suspected animal to the minimum necessary.
3. Use appropriate protective clothing.
4. Prepare a separate pen/stall, preferably in another building section or at the end of a corridor; establish a physical barrier (gate, tape), label **"ISOLATION – RESTRICTED ACCESS"**, and provide separate water and feed (dedicated bucket/trough).
5. Plan the shortest route avoiding the herd; after movement, immediately decontaminate the route and remove feces/bedding/urine if required.
6. Milk a suspected cow last or separately, and do not commingle milk until a veterinary decision is made.

IV. Examination, sampling, and transmission control on the farm

1. Don PPE according to the risk level (Table 2). Perform hand hygiene before putting on gloves.
2. Minimize environmental contact: do not place equipment on production surfaces; use foil/disposable pads or rigid containers.
3. Perform high-contamination-risk procedures (e.g. rectal examination, swab collection) last.
4. During examination, avoid touching door handles/phones with contaminated gloves; if necessary, change gloves and disinfect hands.
5. Label samples clearly, close securely, and package using double containment. Avoid contaminating the outer surface. Clearly indicate the suspected pathogen/disease on the submission form.
6. Collect disposable materials into bags in the dirty zone; place sharps in puncture-resistant containers. Do not leave waste on the farm except under agreed procedures compliant with regulations and farm protocols.

If a notifiable/officially controlled disease is suspected: limit activities to the minimum necessary for diagnosis, avoid unnecessary animal movement, restrict personnel access, and follow notification/control procedures (contact the District Veterinary Officer/management).

V. Exit from the farm – PPE removal and decontamination

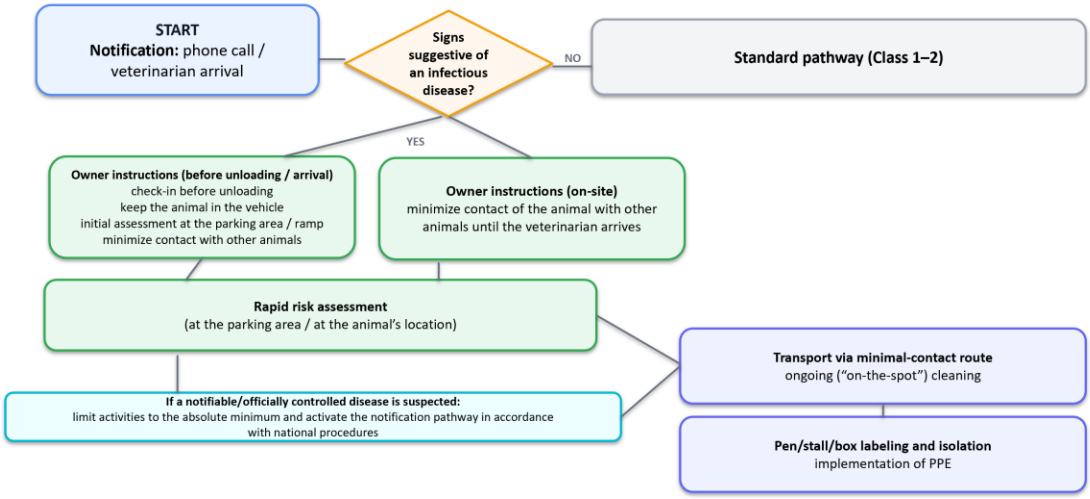
1. In the dirty zone, remove PPE following the "dirty → clean" sequence: gloves → gown/coveralls → boot covers/footwear → mask/eye protection (if used). Perform hand disinfection after each step.
2. Place disposable PPE in sealed waste bags; mechanically clean reusable items (e.g. footwear) and disinfect with an approved agent.
3. Reusable equipment (stethoscope, thermometer, tools, devices): remove visible contamination, then disinfect (contact time per label). Transport equipment in containers that are easy to clean.
4. Protect the vehicle cargo area from contamination (containers, bags); after the visit, wipe down touch points (door handles, steering wheel, grips) and any surfaces that may have contacted the "dirty" side.
5. Document the visit: date/time, location, suspicion/diagnosis, samples collected, biosecurity measures applied, recommendations for the farm, and notification decisions (if applicable).

VI. After returning from the farm (decontamination and follow-up)

1. Perform full decontamination of equipment and vehicle according to the checklist (Table 4), including washing and disinfection of surfaces, transport containers, mats, footwear, and reusable PPE elements.
2. Send work clothing for laundering under procedures for potentially contaminated garments; recommend showering after return (especially after high-risk contacts).
3. Submit samples to the laboratory in accordance with biological material transport requirements; ensure documentation clearly states the suspected pathogen.
4. Provide the owner/farm manager with recommendations on isolation, restriction of animal and human movement, and hygiene. If a notifiable disease is suspected, continue actions in accordance with regulations and authority instructions.
5. **Exposure incidents** (cuts, needlestick injuries, bites, splashes to mucous membranes): initiate first aid, report the incident to a supervisor, and follow occupational health/post-exposure prophylaxis pathways in accordance with WMW policy.

Algorithm 1. Triage and Admission of a Patient with Suspected Infection – Farm

Minimal-contact pathway (from phone notification/report to risk class assignment and isolation)



SOP 4. Biosafety procedures during pathomorphology classes

Purpose

To ensure maximum biological safety during teaching activities in the necropsy room, to minimize the risk of exposure of students and staff to infectious agents, and to comply with occupational health and safety requirements for work with potentially infectious material.

Scope

Teaching activities involving necropsy of animal carcasses (non-fixed biological material at various stages of decomposition), including preparation of workstations, use of personal protective equipment (PPE), organization of movement, waste management, and post-class decontamination.

Responsibilities

- Course instructor: supervision, decision-making, and emergency procedures
- Students: correct use of PPE, maintenance of order and work discipline
- Necropsy room technical staff: cleaning and disinfection of rooms and equipment
- Head of the unit / biosecurity officer: consultation in non-standard situations

I. Assumptions and biological risk

- During necropsy classes, students and staff are exposed to pathogens present on and within animal carcasses.
- Teaching material is non-fixed and may be at various stages of decomposition.
- All procedures in the necropsy room are conducted as if the material were potentially infectious in every case.
- Students may not have direct contact with biological material without appropriate PPE; contact is permitted only after securing protection with reusable and disposable protective clothing.

II. Preparation of workstations and room equipment

1. Before the start of classes, necropsy tables are washed and disinfected (workstation preparation).
2. The teaching room is equipped with waste containers, disposable protective items, and hand disinfection agents.

3. Students are provided with laboratory coats, shoe covers, head protection, and gloves (according to their role during classes).
4. The necropsy room is supplied with reusable PPE (gowns and rubber boots) for individuals performing necropsies, in accordance with class organization.
5. Surface disinfectants (minimum 70% alcohol) and alcohol-based hand disinfectants are available in the teaching room.
6. After completion of classes, necropsy tables and instruments are washed with water and a disinfectant detergent, then wiped with a surface disinfectant.

III. Biosecurity rules in the necropsy room during teaching activities

1. Entry to the necropsy room and participation in classes are restricted to authorized persons only (instructors, students, support staff).
2. Movement is allowed only along designated routes.
3. Upon entering the necropsy room complex, a reusable white linen gown, head covering, and shoe covers must be worn.
4. Students additionally wear a disposable gown over the reusable linen gown.
5. Students assigned to perform necropsy additionally wear a reusable rubber apron, rubber boots (available in the necropsy room), and necropsy gloves.
6. Individuals performing necropsy may touch only instruments, carcasses, and the necropsy table. Observers (not actively participating) must not touch instruments, tables, or carcasses.

IV. Completion of necropsy and exit from the area (procedures)

1. Students not performing necropsy (observers)

1. Leave the necropsy room following the designated route.
2. Dispose of the disposable gown in the designated container along the exit route.
3. Discard head coverings and shoe covers into labeled containers for contaminated waste.
4. Remove the reusable linen gown according to instructions and leave the area.

2. Students performing necropsy

1. Place necropsy remains into specially labeled containers for biological material.
2. Return instruments to the designated area for washing and sterilization.
3. Wash reusable boots and aprons with water and detergent, then disinfect according to unit procedures and place them in the boot-drying room to dry.
4. Dispose of the disposable gown in the designated container along the exit route.
5. Discard head coverings and shoe covers into labeled containers for contaminated waste.
6. Remove the reusable linen gown and leave the area.

V. Waste and biological material management, cleaning and disinfection

1. Disposable protective clothing (shoe covers, head covers, disposable gowns, disposable gloves) must be placed in labeled containers for contaminated waste.
2. Used scalpel blades are discarded without packaging into red sharps containers.
3. Biological material remaining after necropsy is placed in labeled containers and stored in a cold room until collection by an authorized biological waste disposal company.
4. Waste and containers are collected by a specialized disposal company in accordance with applicable contracts and regulations.
5. After necropsy, all instruments and necropsy room equipment (floors, walls, sinks) are washed with a disinfectant detergent by the necropsy room technical staff.
6. Reusable equipment (e.g. rubber boots) is washed with water and detergent, disinfected, and placed in a designated room for drying.

To minimize the risk of spread of infectious diseases, carcasses of animals suspected of infectious disease are not used for teaching necropsies. In such cases, necropsy is performed exclusively by (and in the presence of) staff of the Department of Animal Pathology, in accordance with internal procedures.

VI. Emergency procedure (non-standard situations / suspected infectious disease)

1. Immediately notify the Head of the Department, the biosecurity officer, and—if required—the competent District Veterinary Officer.
2. Place the carcass in a specially labeled container and store it in a designated cold room until collection.
3. Protective clothing used by personnel performing necropsy (both disposable and reusable) must be sterilized or disposed of in accordance with unit decisions and safety requirements.
4. Disposal is carried out by a company authorized to handle biological waste.
5. Thoroughly wash the necropsy room and its equipment with water and a disinfectant detergent, then disinfect with an appropriate disinfectant and, if предусмотрено by procedure, apply UV lamp irradiation.
6. Injury (cut): Immediately report to the instructor, stop work, disinfect and dress the wound (first aid kit available in the teaching room). Further activities only with the instructor's approval.
7. Sudden deterioration of a student's condition: Immediately stop work, assess the condition, provide assistance, and, if necessary, call medical services in accordance with unit procedures.

SOP 5. Biosafety procedures during laboratory classes

Purpose

To ensure the safe organization and conduct of practical classes in laboratory facilities, to reduce the risk of exposure to biological and chemical agents, and to maintain order and compliance with biosecurity principles.

Scope

All practical classes conducted in the laboratory facilities of the Faculty of Veterinary Medicine (WMW) (microbiology, diagnostics, classes involving biological material), involving students, instructors, and supporting personnel.

Responsibilities

- **Course instructors:** supervision and organizational decision-making
- **Students:** compliance with occupational health and safety (OHS) and biosecurity rules
- **Laboratory personnel:** provision of emergency equipment and waste management, according to unit organization

Overarching principle

Biological material must always be treated as potentially infectious, and chemical reagents as potentially hazardous.
Teaching laboratories primarily include microbiology laboratories: bacteriology, food hygiene, parasitology, and virology. Pathogens present in teaching laboratories are mainly microorganisms from low-risk groups. In many practical classes, non-pathogenic surrogate strains are used.

I. Organization of classes

1. **Clothing:** Long trousers (ankle-length) or other clothing covering exposed skin, and closed-toe footwear covering the front of the foot are mandatory.
2. All persons working in the laboratory must use personal protective equipment (PPE) appropriate to the type of exercise being performed.
3. **Laboratory coat:** A personal white cotton laboratory coat dedicated exclusively to a given course, cleaned and laundered by the student after each class, and disposable laboratory coats available in the laboratory.
4. The laboratory coat must remain fastened at all times during classes; sleeves must fully cover the sleeves of personal clothing.
5. Disposable gloves are available in the laboratory. Wearing gloves is mandatory for all activities involving manipulation of biological material and pathogens when there is a risk of infection through contact with intact or damaged skin.
6. Long hair must be tied back. Wearing jewelry (including rings) is prohibited, as is wearing accessories such as scarves or shawls.
7. Personal belongings must be left in the designated area before entering the laboratory.
8. Eating, drinking, and storing food or beverages in the laboratory are strictly prohibited. Chewing gum and smoking (including e-cigarettes) are also prohibited.

9. Order and professional conduct are required in the laboratory. Unnecessary movement around the room and gathering at other participants' workstations should be avoided.
10. All activities must be carried out carefully, particularly when working with chemical reagents, sharp instruments, laboratory glassware, and biological material.
11. Each student is obliged to report any unforeseen situations to the instructor (e.g. spills, broken glass, exposure incidents, cuts, equipment failure).
12. In emergency situations, use the first aid kit located in the laboratory and follow the instructor's instructions.
13. Biological material (clinical samples, cultures, swabs, blood, urine, feces, tissues) must be treated as potentially infectious, regardless of the declared status.
14. Work in a manner that minimizes aerosol generation (e.g. careful mixing, proper closing of tubes, correct use of pipettes).
15. At the end of classes, hands must be washed and disinfected, and the workstation must be left clean and orderly.

SOP 6. Biosafety procedures during animal anatomy classes

Purpose

To ensure the safe conduct of classes and work in anatomical facilities, to minimize the risk of exposure to biological material, and to ensure proper waste segregation and equipment decontamination.

Scope

Practical classes and activities conducted in dissection rooms involving students, instructors, and staff.

Responsibilities

- **Head of the unit / course instructor:** supervision
- **Students:** compliance with procedures
- **Technical staff and facility personnel:** maintenance of biosecurity regime and waste management

Animals used in anatomical teaching are clinically assessed by a veterinarian prior to euthanasia; only animals deemed clinically healthy are used for teaching. Regardless of origin, all biological material must be treated as potentially infectious—biosecurity measures and proper waste management apply at all times.

I. Clothing and PPE

- Dissections are organized during the week. Students must arrive with a protective gown, and a set of dissection instruments.
- Upon entering the dissection room, students must wear a disposable gown and disposable gloves.

I. Entry into the risk zone (dissection room)

1. Leave personal belongings in the cloakroom or designated area (clean zone).
2. Check for fresh, unprotected skin injuries on the hands; if present, report to the instructor and cover the area with a waterproof dressing.
3. Put on a disposable gown and fasten it according to design to protect clothing.
4. Put on disposable diagnostic gloves immediately before starting work with biological material.
5. Bring only essential instruments into the dissection room; leave personal items outside the risk zone.
6. Begin work only after receiving instructions from the instructor and being assigned a workstation.

II. Exit from the risk zone (dissection room)

1. Secure instruments: complete activities and place the instrument set in the designated area for washing and disinfection.
2. Remove gloves and discard them in the waste container, according to labeling.
3. Remove the gown and place them in a sealed plastic bag.
4. Dispose of used scalpel blades without packaging in the small red sharps container.
5. Thoroughly wash and disinfect hands.

List of notifiable diseases (official control)

With regard to potentially hazardous species handled at WMW SGGW, the diseases subject to compulsory control listed in Annex No. 2 to the Act of 11 March 2004 on Animal Health Protection and the Control of Infectious Animal Diseases include:

- Foot-and-mouth disease (FMD)
- Vesicular stomatitis
- Swine vesicular disease (SVD)
- Rinderpest
- Peste des petits ruminants (PPR)

- Contagious bovine pleuropneumonia (CBPP)
- Lumpy skin disease (LSD)
- Rift Valley fever
- Bluetongue
- Sheep pox and goat pox
- African horse sickness
- African swine fever (ASF)
- Classical swine fever (CSF, hog cholera)
- Avian influenza
- Newcastle disease (ND)
- Rabies
- Anthrax
- Bovine tuberculosis
- Brucellosis in cattle, goats, sheep and pigs (B. abortus, B. melitensis, B. suis)
- Enzootic bovine leukosis (EBL)
- Transmissible spongiform encephalopathies of ruminants (TSE)
- American foulbrood
- Infectious haematopoietic necrosis (IHN)
- Infectious salmon anaemia (ISA)
- Viral haemorrhagic septicaemia (VHS)
- Epizootic haemorrhagic disease of deer (EHD)
- Bonamiosis (Bonamia ostreae)
- Marteiliosis (Marteilia refringens)
- Bonamiosis (Bonamia exitiosa)
- Perkinosis (Perkinsus marinus)
- Infection with Microcytos mackini
- Taura syndrome
- Yellowhead disease
- White spot syndrome (WSS)
- Koi herpesvirus infection (KHV)
- Epizootic haematopoietic necrosis (EHN)

Covered by infectious animal disease control programmes (other than those listed above):

- Aujeszky's disease in pigs
- Avian salmonellosis – S. Enteritidis, S. Typhimurium, S. Hadar, S. Infantis, S. Virchow in breeding flocks of Gallus gallus and S. Enteritidis, S. Typhimurium in laying flocks of Gallus gallus, broiler flocks of Gallus gallus, breeding turkeys and fattening turkeys

List of diseases (Veterinary Inspectorate): https://www.wetgiw.gov.pl/nadzor-weterynaryjny/wykazy-chorob

Hand hygiene procedures

1. Hands should be washed (or at least disinfected if not visibly dirty):

- before and after contact with each patient,
- after any contact with blood, body fluids, secretions, excretions and contaminated items regardless of whether contact was with gloves or without,

- immediately after removing gloves,
- between different procedures on the same patient to prevent cross-contamination of different body sites,
- after contact with laboratory samples or laboratory cultures,
- after cleaning cages or stalls/boxes,
- before meals, breaks, smoking or leaving work,
- before and after using the toilet.

Recommended handwashing technique:

- Wet hands and forearms with warm water.
- Apply at least 3–5 ml (1–2 full pumps) of liquid soap to the hand.
- Lather and vigorously scrub each side of the hands up to the wrist for 10–30 seconds; clean between fingers and under nails and jewellery (rings).
- Rinse under warm water until all soap residue is removed.
- Dry hands with a paper towel or a warm air dryer.
- If immediate washing is not possible, alcohol wipes or hand disinfectant may be used; wash hands with warm water and soap as soon as available.

Recommended method for applying hand disinfectant:

- Apply a small amount of the product to the palm.
- Rub the disinfectant into the fingertips of the opposite hand and then over the rest of the hand.
- Repeat on the other hand.
- Rub vigorously until the product dries; do not rinse hands.

To minimise contamination and improve hand cleanliness, WMW staff and students who have direct contact with patients or handle biological samples should keep nails short and wear no hand jewellery. Any skin lesions on hands and forearms should be covered (with a plaster or waterproof bandage).

Appendices – reference tables and forms (from Biosecurity SOPs applied to the Faculty of Veterinary Medicine, Liège University, Belgium, June 2025)

Table I. Examples of microorganisms according to their risk classes in humans and animals

(based on the Belgian classification tool: https://www.biosafety.be/content/tools-belgian-classification-micro-organisms-based-their-biological-risks)

RC = risk class; T = toxin production; * = pathogens belonging to biological risk class 3 that may pose a limited risk of infection for humans and animals because they are usually not airborne infectious.

Agent	Humans (RC2)	Animals (RC2)	Humans (RC3)	Animals (RC3)	Humans (RC4)	Animals (RC4)
Bacteria and similar organisms						
Borrelia burgdorferi	X	X				
Clostridium perfringens	X (T)	X (T)				
E. coli (enterotoxin/Shiga toxin)	X (T)	X (T)				
Yersinia pestis			X	X		
Mycobacterium bovis			X	X		
Coxiella burnetii			X	X		
Brucella abortus			X	X		
Fungi						
Coccidioides immitis			X	X		
Histoplasma capsulatum var. capsulatum			X	X		
Parasites						
Sarcoptes scabiei	X	X				
Toxocara canis	X	X				
Leishmania brasiliensis			X	X		
Leishmania donovani			X	X		
Viruses						
Feline calicivirus		X				
Equine infectious anaemia virus		X				
Rabies virus			X	X		
Venezuelan equine encephalitis virus			X	X		
Foot-and-mouth disease virus					X	X
Classical and African swine fever viruses					X	X

Table II. Main detergents and disinfectants used in veterinary medicine (based on Linton et al., 1987 and Biosecurity SOPs applied to the Faculty of Veterinary Medicine, Liège University, Belgium)

Disinfectant (dilutions)	Activity in organic matter	Spectrum	Notes
Chlorhexidine (0.05% or 0.5% in alcohol)	Limited activity (may be inactivated by organic matter).	Mycoplasmas: Highly effective Mycobacteria: Variable Gram-positive bacteria: Highly effective Gram-negative bacteria: Highly effective	No activity against spores (e.g., Bacillus anthracis). Ineffective against prions. It is the most

		Pseudomonas: Highly effective Rickettsiae: Effective Enveloped viruses: Limited activity Chlamydiaceae: Limited activity Non-enveloped viruses: Limited activity Fungal spores: Effective Bacterial spores: No activity Cryptosporidia: No activity Prions: No activity	effective and widely used antiseptic in veterinary medicine.
Povidone iodine (0.1–1%)	Moderately reduced.	Mycoplasmas: Effective Mycobacteria: Effective Gram-positive bacteria: Effective Gram-negative bacteria: Highly effective Pseudomonas: Variable Rickettsiae: Effective Enveloped viruses: Effective Chlamydiaceae: Effective Non-enveloped viruses: Effective Fungal spores: Effective Bacterial spores: No activity Cryptosporidia: No activity Prions: No activity	Ineffective against prions. May cause hypersensitivity. More effective as an antiseptic compared to chlorhexidine.
Alcohol (70% ethanol)	Limited activity (inactivated by organic matter).	Mycoplasmas: Highly effective Mycobacteria: Variable Gram-positive bacteria: Highly effective Gram-negative bacteria: Highly effective Pseudomonas: Highly effective Rickettsiae: Effective Enveloped viruses: Effective Chlamydiaceae: Limited activity Non-enveloped viruses: Limited activity Fungal spores: Effective Bacterial spores: No activity Cryptosporidia: No activity Prions: No activity	Fast acting. Denatures proteins and dissolves lipids. Activity can be improved by adding isopropyl alcohol to broaden the spectrum of action.
Sodium hypochlorite (bleach)* Used to disinfect clean surfaces. Detergents can be added to broaden the spectrum of the disinfectant. Dilutions: 1:10 = 100 ml bleach per 1 L water 1:32 = 33.02 ml bleach per 1 L water (suitable for most uses in WMW) 1:64 = 15.85 ml bleach per 1 L water	Rapidly reduced.	Mycoplasmas: Highly effective Mycobacteria: Highly effective Gram-positive bacteria: Highly effective Gram-negative bacteria: Highly effective Pseudomonas: Highly effective Rickettsiae: Effective Enveloped viruses: Effective Chlamydiaceae: Effective Non-enveloped viruses: Effective Fungal spores: Effective Bacterial spores: Effective Cryptosporidia: No activity Prions: No activity	Broad spectrum. Relatively low toxicity potential at standard dilutions, but fumes and prolonged contact may cause irritation. Can be used with anionic detergents. Not sensitive to hard water. Low cost. Bactericidal activity decreases as pH increases; lower pH increases effectiveness. Rapidly reduced by organic matter, hard water, cationic soaps and detergents, sunlight and some metals. Mixing with other chemicals may produce chlorine gas. Corrosive to some metals (silver, aluminium; not stainless steel). Stored working solutions lose activity.
Quaternary ammonium compounds (QAC) Basic disinfectant for most surfaces and rooms. Dilution 1:256 (4 ml per 1 L water) Contact time: at least 15 minutes	Moderate.	Mycoplasmas: Effective Mycobacteria: Variable Gram-positive bacteria: Highly effective Gram-negative bacteria: Highly effective Pseudomonas: Highly effective Rickettsiae: Effective Enveloped viruses: Effective Chlamydiaceae: Limited activity Non-enveloped viruses: Limited activity Fungal spores: Limited activity Bacterial spores: No activity Cryptosporidia: No activity Prions: No activity	Broad spectrum. Irritation/toxicity is variable between compounds. Inactivated by anionic detergents (soap/detergents). Some residual activity after drying. Effective at alkaline pH and less effective at low temperatures. High stability of working solutions during storage. Not sensitive to hard water.

Oxidizing agents Used mainly to disinfect surfaces. Prepared solutions are stable for a maximum of one week. Dilution: 1:100 (10 g per 1 L water) Contact time: at least 15 minutes	Slightly reduced.	Mycoplasmas: Highly effective Mycobacteria: Effective Gram-positive bacteria: Highly effective Gram-negative bacteria: Highly effective Pseudomonas: Highly effective Rickettsiae: Highly effective Enveloped viruses: Highly effective Chlamydiaceae: Highly effective Non-enveloped viruses: Highly effective Fungal spores: Highly effective Bacterial spores: Highly effective Cryptosporidia: No activity Prions: No activity	Broad spectrum. Irritation/toxicity is variable between compounds. Chlorine dioxide is unstable and loses activity quickly. Not sensitive to hard water. Some residual activity after drying. Working solutions are stable for a maximum of one week during storage.
Phenols Used exclusively for disinfection of tools and post-mortem rooms that may be contaminated with prions (e.g., bovine spongiform encephalopathy, chronic wasting disease and scrapie).	Very good.	Mycoplasmas: Highly effective Mycobacteria: Variable Gram-positive bacteria: Highly effective Gram-negative bacteria: Highly effective Pseudomonas: Highly effective Rickettsiae: Effective Enveloped viruses: Effective Chlamydiaceae: Limited activity Non-enveloped viruses: Limited activity Fungal spores: Effective Bacterial spores: No activity Cryptosporidia: No activity Prions: Limited activity; varies between compounds	Broad spectrum. Irritation potential varies among compounds in this class, but phenolic disinfectants are generally considered highly irritating and should not be used on surfaces that contact skin or mucous membranes. Concentrations above 2% are highly toxic to animals, especially cats. Not affected by water hardness. Some residual activity after drying. Effective across a wide pH range. Non-corrosive. High stability of working solutions during storage.

Table III. Antimicrobial spectrum of disinfectants (based on Linton et al., 1987 and Biosecurity SOPs applied to the Faculty of Veterinary Medicine, Liège University, Belgium)

Organic matter should be removed before applying disinfectants. Soft soaps and detergents can reduce the effectiveness of disinfectants.

Most susceptible	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)	**Alkalis** (sodium or ammonium hydroxide, sodium carbonate)	**Biguanides** (chlorhexidin)	**Halogens**		**Oxidizing Agents** (hydrogen peroxide, peracetic acid)	**Phenolic compounds**	**Quaternary Ammonium compounds (QACs)**
						hypochlorite	iodine			
Mycoplasmas	+	++	++	++	++	++	++	++	++	+
Gram-positive bacteria	+	++	++	+	++	+	+	+	++	++
Gram-negative bacteria	+	++	++	+	++	+	+	+	++	+
Pseudomonas	+	++	++	+	±	+	+	+	++	-
Rickettsiae	±	+	+	+	±	+	+	+	+	±
Enveloped viruses	+	+	++	+	±	+	+	+	±[a]	±
Chlamydiaceae	±	±	+	+	±	+	+	+	±	-
Non-enveloped viruses	-	-	+	±	-	+	±	±	-	-
Fungal spores	±	±	+	+	±	+	+	±	+	±
Picornaviruses (i.e. FMD)	+	N	+	+	N	N	N	+	N	N
Parvoviruses	N	N	+	N	N	+	N	N	N	-
Acid-fast bacteria	-	+	+	+	-	+	+	±	±	-
Bacterial spores	±	-	+	±	-	+	+	+[b]	-	-
Coccidia	-	-	-	+[c]	-	-	-	-	+[d]	-
Prions	-	-	-	-	-	-	-	-	-	-

Legend: ++ highly effective, + effective, ± limited activity, - no activity, N = information not available; [a] varies with composition, [b] peracetic acid is sporicidal, [c] ammonium hydroxide, [d] some have activity against coccidia; FMD = foot-and-mouth disease virus.

Table VI. Characteristics of selected disinfectants and antiseptics (based on Linton et al., 1987 and CFSPH 2023)

miDisinfectant class	Alcohols	Aldehydes	Biguanides	Halogens-hypochlorite	Halogens-iodine compounds	Oxidizing agents	Phenols	QACs
Examples of active ingredients	Ethanol Isopropanol	Glutaraldehyde Formaldehyde	Chlorhexidin (antiseptic)	Sodium hypochlorite	Povidone iodine (antiseptic)	Hydrogen peroxide, Peracetic acid	Chloroxylenol	Benzalkonium chloride
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
Characteristics	• Fast acting • Leaves no residues • Rapid evaporation • No residue or residual action	• Broad spectrum • Noncorrosive • Pungent odour	• Broad spectrum	• Broad spectrum • Short contact time • Inexpensive • Degrades rapidly once prepared	• Stable in storage • Relatively safe	• Broad spectrum • Fast acting • Low toxicity at lower cc	• Non-corrosive • Stable in storage • Strong odour • Residual film • Can damage rubber, plastic	• Stable in storage • Effective at high temperatures and high pH (9-10)
Factors affecting effectiveness	• Inactivated by organic matter	• Affected by organic matter, hard water, soaps/detergents, pH, temperature and relative humidity	• Effective in a limited pH range (5-7)	• Inactivated by sunlight, heat • Requires frequent application • Affected by pH, temperature, etc.	• Inactivated by QACs • Requires frequent application		• Affected by temperature	• Affected by pH, best at neutral or alkaline
Health hazards	• Skin irritation	• Carcinogenic • Highly irritating to skin, mucous membranes		• Irritation to mucous membranes, skin, eyes		• Powder can irritate mucous membranes	• Irritation to skin, eyes, respiratory tract • Burns at high cc	• Can cause irritation to skin, eyes and respiratory tract
Precautions	• Flammable	• Only use in well-ventilated areas • Flammable	• Toxic to fish (environmental concern)	• Never mix with adds, toxic chlorine gas will be released • Corrodes metals	• Corrosive • Stains clothes and treated surfaces	• May damage some metals (aluminium, copper, steel, ...)	• May be toxic to animals, especially cats and pigs	• Can accumulate in environment • Damaging to some metals at high cc
Vegetative bacteria	Effective	Effective	Effective	Effective	Effective	Effective	Effective	Variable
Mycobacteria	Effective	Effective	Variable	Effective		Effective	Variable	Not effective
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	Effective	Variable
Efficacy with organic matter	Inactivated	Reduced	?	Inactivated		Variable	Effective	Inactivated
Efficacy with hard water	?	Reduced	?	Effective	?	Variable	Effective	Inactivated
Efficacy with soap/detergents	?	Reduced	Inactivated	Inactivated	Effective	?	Affected by cationic cleaners	Inactivated by anionic cleaners

Legend: ? = Information not found; QAC = Quaternary Ammonium Compounds; cc = concentration

Forms

Form 1. Patient monitoring chart

Date	Time	Body temp. (°C)	Pulse (beats/min)	Respirations (breaths/min)	Mucous membranes / CRT	Hydration	Appetite / water intake	Faeces / urine	Pain / behaviour	Treatment administered	Signature

Form 2. Isolation unit entry/exit log

Date	Entry time	Exit time	Name and surname	Role (vet / technician / student / other)	Purpose of entry	PPE used	Notes

Form 3. Isolation unit cleaning and disinfection protocol

Step	Description of task	Date and time performed	Name and surname of person performing	Notes