



NECROPSY ROOM VETERINARY HOSPITAL

Safety Manual and Good Practices





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Manual de Seguridad y buenas prácticas Sala de Necropsias. Hospital Veterinario. Universidad de León

1. INTRODUCTION

The main activity carried out in the Necropsy Room of the Veterinary Hospital of the University of León (HVULE) is the performance of animal necropsies for teaching, research, or diagnostic purposes. Additionally, for these same purposes, organs from various animal species (cattle, sheep, pigs, horses) from the slaughterhouse are examined in the Necropsy Room. These activities involve certain hazards due to the nature of the work being performed. This safety and best practices manual provides the necessary guidelines for conducting safe and efficient work in the HVULE Necropsy Room and explains the general rules for prevention and occupational safety during the necropsy and post-mortem inspection.

2. SCOPE OF APPLICATION

The recipients of this safety protocol are the teaching and research staff (PDI) of Pathological Anatomy attached to the Pathological Anatomy Diagnostic Service of the HVULE, including also the training staff (residents), research fellows, and third-cycle students, Veterinary Degree students, and technical staff (PTGAS).

3. RESPONSIBILITY

The work in the Necropsy Room, involving technical staff, students, professors, doctoral candidates, researchers, etc., must be properly hierarchized, with clearly defined chains of responsibility.

- The faculty attached to the Pathological Anatomy Diagnostic Service, the faculty collaborating in the teaching of the subjects involved in the Veterinary Degree, and the technical staff of the necropsy room must ensure that the facilities and equipment of the necropsy room are appropriate and guarantee that teaching, research, or diagnostic activities are carried out under the necessary safety conditions.
- It is the responsibility of the involved faculty, Veterinary Degree students, and technical staff to know and comply with the rules indicated in this manual.

4. TYPES OF HAZARDS

In the Necropsy Room, when we talk about 'hazard', we refer to the possibility of a pathologist, student, or technical staff member suffering a particular harm related to work. These harms are caused as a result of safety, ergonomic, physical, chemical, and biological hazards.

4.1. Safety Hazards

Safety hazards in the necropsy room are related to the use of the facilities:

- Hazard of falls and/or trips due to slipping on the floor that remains wet during activity, or when entering and exiting the refrigeration chamber.
- Hazard of injuries (cuts, scratches, punctures) or traumas caused by handling necropsy technique instruments: scalpels, knives, needles, scissors, hand saws, circular saws,

hammers, vices, etc.



4.2. Ergonomic Hazards

These are caused by improper postures at non-adjustable height necropsy tables, standing for prolonged periods, or repetitive movements of dissection instruments. Also included are the hazard of muscular and bone injuries during the use of hoists for handling large animals (horses, cows, etc.) or due to improper handling of tools, cadavers, waste containers, tables, etc.

4.3. Physical Hazards

- Hazard of exposure to low temperatures due to the use of the refrigeration chamber.
- Hazard from handling electrical devices in an area that is usually wet.



4.4. Chemical Hazards

These hazards stem from contact with chemical products. The following are used in the necropsy room:

- Formaldehyde, a non-halogenated solvent, is used to fix tissue samples. It is a flammable liquid that emits vapors which can cause toxicity by inhalation, ingestion, and contact with skin and mucous membranes, as well as burns, as indicated in the safety data sheet. The maximum allowable exposure is 0.75 ppm for an 8-hour workday and 2 ppm for exposure of no more than fifteen minutes. Formaldehyde is classified as a 1B category carcinogen.
- Ethyl alcohol (non-halogenated solvent) is also used as a fixative and to preserve tissues.
- The composition of organ preservation liquids includes anhydrous disodium hydrogen phosphate, sodium dihydrogen phosphate dihydrate, sodium chloride, ascorbic acid, sodium bicarbonate, and potassium sulfate.

- Additionally, there is a hazard associated with the use of **chemical products for cleaning and disinfecting** facilities: detergents with bioalcohol, biodegradable disinfectant cleaners (didecyldimethylammonium chloride; glutaraldehyde, tetrasodium ethylenediaminetetraacetate), insecticides (d-trans-tetramethrin, d-phenothrin).

To protect against chemical hazards during the preparation of formalin by technical staff, as well as the handling of formalin by professors and researchers during the carving process, a buconasal mask for gases with a 3M filter and protective goggles will be available.

The technical staff of the necropsy room with specific personal protective equipment (PPE) is responsible for the preparation of the fixative, its storage in appropriate carboys, and its distribution in wide-mouth plastic bottles ("duchesses") for use after sample collection.



Formaldehyde: Carcinogenicity, cat.1B, Mutagenicity, cat.2, Acute toxicity, cat. 3. Skin corrosion cat. 1B. Skin sensitization: cat.1



Mask with 3M filter for handling formalin.

4.5. Biological Hazards

Biological hazard refers to the possibility of harm to individuals as a result of exposure to or contact with biological agents. Exposure to biological agents in pathological anatomy may be due to the following situations:

- Activities in the autopsy room, involving contact with cadavers or animal-derived products. **Sources of cadavers:** include HVULE, veterinary clinics, ULE Farm, private owners, and livestock farms.
Organs for condemnation from slaughterhouses: are transported in waterproof vehicles and stored in the cold room of the Autopsy Room.
- Healthcare assistance work, including those carried out in the Diagnostic Service in Pathological Anatomy.

Article 3, RD 664/97. Classification of biological agents.

Biological agents are classified into four groups based on the hazard of infection:

- Group 1 biological agent: one that is unlikely to cause disease in humans.
- Group 2 biological agent: one that can cause disease in humans and may pose a danger to workers, being unlikely to spread to the community and generally having effective prophylaxis or treatment. In the autopsy room, the most likely route of transmission of these agents is through splashes, and percutaneous inoculations from punctures or cuts. Adequate protocols and hygiene practices will prevent their transmission.

Masks are suitable for preventing transmission by inhalation during the autopsy of animals infected with *Mycobacterium* spp. or *Francisella tularensis*.

- Group 3 biological agent: one that can cause severe disease in humans and poses a serious danger to workers, with the hazard of spreading to the community and generally having effective prophylaxis or treatment. This group includes biological agents that pose a serious danger to those performing autopsies and may present a hazard of spreading, such as *Mycobacterium tuberculosis*, *Mycobacterium bovis*, *Chlamydia psittacii*, *Burkholderia* spp., Lyssavirus, etc. Autopsies and sampling procedures shall be performed exclusively by trained personnel using masks and eye protection. Students should not have access to the autopsy room during these procedures.
- Group 4 biological agent: one that causes severe disease in humans and poses a serious danger to workers, with a high likelihood of spreading to the community and generally without effective prophylaxis or treatment.

Hazard Group	Rsk of Disease	Spread to the Community	Effective Prophylaxis	Effective Treatment
Group 1	Unlikely	None	Not necessary	Not necessary
Group 2	Probable	Limited	Availabe	Available
Group 3	Severe disease	High	Available	Availabe
Group 4	Severe disease	Very high	Not available	Not available

Activities conducted in the Autopsy Room of HVULE require a minimum of Biosafety Level 2 (BSL-2), given the real possibility of handling cadavers or organs from animals that may transmit zoonotic biological agents of group 3 such as:

- *Bacillus anthracis*
- *Bordetella bronchiseptica*
- *Brucella* spp.
- *Campylobacter jejuni*
- *Chlamydophila psittaci*
- *Coxiella burnetti*
- *Cryptosporidium* spp.
- *Dipylidium caninum*
- *Echinococcus* spp.
- *Escherichia coli*
- *Francisella tularensis*
- *Giardia* spp.
- *Leptospira* spp.
- *Listeria monocytogenes*
- *Mycobacterium bovis*
- *Leishmania* spp.
- *Microsporium* spp.
- *Trichophyton* spp.
- *Pasteurella multocida*
- Pulgas, garrapatas y ácaros
- *Rickettsia rickettsii*
- *Salmonella* spp.
- *Sporothrix* spp.
- *Staphylococcus aureus*
- *Enterococcus* spp.
- *Toxocara* spp.
- *Toxoplasma gondii*



The term biosafety level (BSL) refers to the conditions under which biological agents can be safely handled. Biosafety Level 2 is necessary for activities in the Autopsy Room of HVULE.

The equipment, design, and construction of Biosafety Level 2 facilities are applicable to educational, diagnostic, and clinical laboratories where work is conducted with various moderate-hazard agents present in the community and associated with human diseases of varying severity. Lab coats, gloves, splash-resistant masks, face protection, handwashing sinks, and proper waste disposal must be utilized to reduce the potential environmental contamination.



Containment Measures	B. Containment Levels		
	2	3	4
Workplace			
1. The workplace must be separated from all activities developed in the same building	No	Advisable	Yes
2. The workplace must be able to be sealed off for disinfection	No	Asvisable	Yes
Facilities			
3. Infected material, including animals, must be handled in a biological safety cabinet or in an isolator or other appropriate containment	As appropriate	Yes, when the infection spreads through the air	Yes
A. Containment Measures	B. Containment Levels		
	2	3	4
Equipment			
4. The air introduced and extracted from the workplace must be filtered using HEPA filters or similar	No	Yes, for air outlet	Yes, for air inlet and outlet
5. The workplace must be maintained at negative pressure relative to atmospheric pressure	No	Advisable	Yes
6. Surfaces waterproof to water and easy to clean	Yes, for the worktable and floor	Yes, worktable, floor, and other surfaces determined by a hazard assessment	Yes, the worktable, walls, floor, and ceilings
7. Surfaces resistant to acids, alkalis, solvents, disinfectants	Advisable	Yes	Yes
Guidelines on containment measures and levels (R.D. 664/1997).			



A. Containment Measures	B. Containment Levels		
	2	3	4
Normas de trabajo			
8. Access shall only be allowed to designated personnel	Advisable	Yes	Yes, through an airlock
9. Effective control of vectors (e.g., rodents and insects)	Advisable	Yes	Yes
10. Specified disinfection procedures	Yes	Yes	Yes
11. Safe storage for biological agents	Yes	Yes	Yes, secure storage
12. Personnel must shower before leaving the containment area	No	Advisable	Advisable
13. Validated inactivation process for safe disposal of animal carcasses	Advisable	Yes, inside or outside the facilities	Yes, in the facilities
Other measures			
14. Laboratory with own equipment	No	Advisable	Yes
15. An observation window, or an alternative device, will be installed to allow viewing of its occupants	Aconsejable	Advisable	Yes
5. BIOSAFETY PROCEDURES AND PROTOCOLS IN THE NECROPSY ROOM			
5.1. Access to the Necropsy Room			
<p>Access for authorized personnel (faculty, students, technical staff) is provided from HVULE through the entrance door to the Autopsy Room (No. 1, annex 1), which leads into a corridor (No. 2, annex 1) that goes to the changing rooms, equipped with: lockers for storing personal clothing separately, a hygiene area with toilets, showers, and washbasins (No. 3 and 4, annex 1).</p> <p>Students are advised to store valuables (watches, computers, etc.) in the lockers, and the use of mobile phones in the Autopsy Room is prohibited.</p>			

In addition to this access used by students and authorized personnel to the autopsy room, there is **an external entrance door** at HVULE facing north, exclusively used for receiving cadavers intended for autopsy and organs for condemnation, and for the collection of such cadavers and other organic waste for incineration. This door remains locked outside of technical staff hours and can only be opened by authorized personnel outside of these hours for the reception of cadavers (**No. 10, annex 1**).



Necropsy Room: entrance from the HVULE and changing room area.



Necropsy Room: external entrance.

5.2. Use of basic clothing and personal protective equipment (PPE)

The most commonly used are **own cotton surgical gown and scrubs**. Students also have disposable plastic gowns available. It is advised to roll up the sleeves of the gowns to prevent staining them on the autopsy table or when handling organs. Also, remove watches, rings, mobile phones, etc., before entering the room.

The **apron**, usually made **of plastic**, should be worn over the indicated garments (lab coat, work jumpsuit, scrubs, or disposable suit) and tied at the back. The autopsy room has a sufficient quantity of waterproof aprons (about 30) for groups of students in practical sessions. When attending activities other than performing an autopsy, for example, demonstration practices of lesions, students must always use **disposable plastic gowns**, in addition **to a mask and disposable gloves**.



Disposable gowns, plastic overshoes, nitrile gloves, and surgical masks.

Foot protection in the Autopsy Room is designed to prevent slips on wet floors. It is recommended to wear **waterproof rubber boots** that fully cover and protect the feet. When attending activities other than performing an autopsy, such as demonstration practices of lesions, students must always use **disposable plastic shoe covers**.

Pathologists and students, coming from the changing rooms wearing disposable plastic shoe covers, proceed through a corridor (**No. 5, annex 1**) to a room adjacent to the Autopsy Room. There, they have access to rubber boots of various sizes (about 25 pairs) properly placed on metal shelves ("boot racks") where they leave their ordinary footwear (**No. 6, annex 1**).

Protective gloves are personal protective equipment (PPE) that protect the hand, wrist, and distal part of the forearm. When choosing them, one must consider tactile sensitivity, gripping ability, and the need for protection, which should be as high as possible. They should be **the correct size** and are manufactured in different materials (PVC, PVA, nitrile, latex, neoprene, cut-resistant gloves, etc.) depending on the hazard they are intended to protect against. In the Autopsy Room, **disposable nitrile gloves** of different sizes, **rubber gloves**, and occasionally, **metal mesh cut-resistant gloves** are used.



Access from the changing rooms to the room with "boot hangers".

To protect against biological hazards of type 2 and 3, buccal-nasal **masks** and **protective glasses** are necessary. If protection of the rest of the face in addition to the eyes is needed, **face shields** will be used.

Glasses that fit the face, with a single lens, and **integral glasses**, which can be used together with prescription glasses, are used in the Autopsy Room, as well as **face shields**. Regarding their maintenance, it is important to clean them after use, **disinfect them periodically**, and **replace** them in case of deterioration.

For respiratory protection against solid particles and aerosols, self-filtering **masks** are used, which should be discarded if splashed by biological fluids. To protect against biological hazard 3, a type **FFP2** 3M buccal-nasal mask will be used. **Surgical masks** prevent the wearer from transmitting diseases through respiratory routes, although it is considered that they can protect against microorganisms that remain in the air for a short time and are transmitted by droplets.

5.3. Access to the actual enclosure of the Autopsy Room.

To access the Autopsy Room (**No. 8, annex 1**), it is mandatory for students, faculty, pathologists, and technical staff to be **protected with basic attire**: rubber boots, surgical scrubs, white cotton lab coat/disposable plastic gown, plastic apron, rubber gloves, and the necessary PPE (protective gloves, masks, and glasses/face shields when deemed appropriate by the faculty).

All **activities** carried out in the autopsy room (practical teaching, research, diagnostic activities) must be **directed and supervised** by the teacher/pathologist responsible for them. No activity should be carried out without prior authorization or proper supervision.

The preparation of the Autopsy Room and the cadavers to be autopsied are conditioned by the technical staff before the start of such activity.

The necessary **material** for performing the autopsy, clean and disinfected, is stored in metal shelf cabinets and will be placed on the dissection tables. This material will be used to perform autopsies on different animal species, always following an **autopsy protocol** explained and demonstrated to the students beforehand.



FP2 mask, anti-cut glove, glasses, and face mask.

Subsequently, samples for histopathological and complementary studies will be taken.

For the autopsy, knives, scalpel handles and blades, shears, straight and curved scissors, forceps, costotome, hammer, chisel, manual and electric saws, etc., are used.



Material used for performing autopsies.

5.4. Basic rules to be followed inside the autopsy room

- Maintain **focus on the activity** being performed to avoid potential hazards. Work should be conducted **orderly, cleanly, and without haste**.
- When moving around the Autopsy Room, proceed with caution and pay **attention to the floor**, which may be slippery (due to the presence of liquids, grease, etc.).
- **Never touch your face, eyes**, etc. (e.g., due to splashes) without removing the gloves and washing your hands, always outside of the Autopsy Room, in the anteroom equipped with pedal-operated sinks and disinfectant soap.
- **Take responsibility for the material**: knives, scalpels, scissors should never be left hidden on the dissection table by the organs, nor should syringes be scattered across the benches, to avoid cuts, punctures, etc., from potentially contaminated materials. Also, avoid their possible loss when disposing of waste.
- **Do not use** materials or other types of **equipment** (hoses, extractor fan switches, saws, etc.) without the permission and supervision of the faculty in charge or technical staff.
- **Smoking, eating, or drinking** in the Autopsy Room **is prohibited**, as well as other practices that involve the hazard of ingestion or contact with toxic substances or pathogens (**chewing gum**).
- Work in the Autopsy Room may pose a hazard to pregnant women and immunocompromised individuals, so it is always necessary to be informed of the hazards involved in such activity.
- The use of contact lenses should be avoided.



Performing a necropsy in Pathological Anatomy practice.

5.5. Activities to be carried out once the autopsy is completed.

During the autopsy, various wastes are generated that must be eliminated. Materials, equipment, etc., must also **be collected**:

- **Needles and other sharp objects, scalpel blades**, etc., must be disposed of in special containers provided by the ULE waste management service.

- **Used materials** (knives, scissors, forceps, saws, etc.) will be taken to one of the sinks for cleaning and disinfection.
- **Organic waste (cadavers, viscera)** will be placed in special containers protected by plastic bags and deposited in the **cold storage room** of the Autopsy Room (**No. 9, annex 1**). If necessary, special containers for biohazardous waste will be used. These activities are carried out by technical staff or, failing that, faculty or training personnel.

In this activity, a series of precautions must be considered:

- 1) Carefully dispose of organic waste to avoid splashes.
 - 2) Ensure that such containers are not excessively heavy, posing a hazard during their transfer to the cold storage room (ergonomic problems).
 - 3) Once deposited in the cold storage room, check that it is properly closed and the light is turned off.
- The cleaning of the **used rubber boots and plastic aprons** will proceed (an activity performed by students under the supervision of faculty/technical staff):
 - 1) First, wash the gloves with soap.
 - 2) Wash the plastic apron with soap, rinse with water, and hang it on the hooks near the exit door of the Autopsy Room.
 - 3) Washing the boots in a device near the exit door of the Autopsy Room ("boot washer") with a brush, water, and soap is mandatory before leaving the Autopsy Room.



Clean plastic aprons at the exit of the Necropsy Room and "boot wash".

When students leave the Autopsy Room, **the dissection tables, benches, and floor must be cleaned** with pressurized water and disinfectant products (soap), a task performed by the technical staff or, in their absence, faculty or training personnel.



Cleaning of instruments and the Necropsy Room. Disinfectant products.

5.5. Procedure for exiting the facilities.

Upon leaving the Autopsy Room with clean boots, one passes through a footbath (disinfectant, Virkon® S).

Students **dispose of disposable gowns and gloves** into bins located at the exit of the Autopsy Room. In the anteroom (**No. 7, annex 1**), they **wash their hands** with soap at the sinks and **dry them** with disposable paper. Contact with the mouth or eyes should be avoided before washing hands.



Sink at the exit of the Necropsy Room and footbath.

Subsequently, they put on their regular footwear protected by plastic overshoes. The rubber boots are placed on the corresponding shelves (**No. 6, annex 1**).



Through the corridor (**No. 5, annex 1**), they access the changing rooms (male and female) where they change and collect their belongings (**No. 3 and 4, annex 1**) and exit through a corridor (No. 2, annex 1) to the door of the Autopsy Room (**No. 1, annex 1**). From this point, they **access** an external corridor (parallel to the consultation corridor) through the student entrance/exit door in HVULE.

This procedure is the same for professors/pathologists and training personnel. They will wash and disinfect their hands (showers are also available) and collect their personal belongings from the lockers. From the changing room, they will exit through a corridor to the common areas of HVULE.

The clothing used by the assigned staff (cotton lab coats, surgical scrubs) is washed and disinfected in the area designated for this purpose.

5.6. Safety protocols in other areas adjacent to the Autopsy Room.

- Cold storage room.

When cadavers are sent hours after death, they are kept in the **refrigeration room**, adjacent to the Autopsy Room (**No. 9, annex 1**), until the autopsy is performed. If sent frozen, they must be kept in this refrigeration room at 4°C for a few days until completely thawed. In the refrigeration room, organs are also kept in preservation liquid, to show to students in practical demonstration classes of clinical case lesions. Likewise, cadavers and remaining organs for disposal as biological waste are kept in appropriate containers.

The Autopsy Room is equipped with a **freezer room** (adjacent to the refrigeration room) where cadavers donated for Pathological Anatomy teaching are stored. It is also mandatory to preserve those cadavers on which an autopsy has been performed but must be kept, as they are part of forensic reports requested by a Judicial Body.

Technical staff with appropriate PPE (vest, thermal gloves) are responsible for locating cadavers, preserved pieces, etc., and for the removal of stored material, such as waste, in this refrigeration room. In the absence of technical staff, faculty and researchers will be responsible for these functions.

In the freezer rooms, the possible physical hazards are cold hazard and fall hazard (slippery floor). To protect from the physical cold hazard, one must access the freezer rooms with a waterproof thermal protection vest and cold-resistant gloves.

- Storage room for products and macro photography.

This is a room with stainless steel shelving and benches (**No. 11, annex 1**).

At one end, there is a macro photography equipment, and the rest contains various materials:

- Recyclable plastic duchess-type bottles of different sizes for sample collection.
- Sterile containers for sending samples to infectious diseases, toxicology, parasitology laboratories, etc.
- Clothing: plastic gowns, plastic aprons, rubber boots, gloves, plastic overshoes, etc.
- Chemical products: for cleaning, to prepare fixative and organ preservation mixtures.
- Paper



Refrigeration and freezing chamber.

Regarding the storage of products to be used in the Autopsy Room, the following aspects should be considered:

- Limit the quantity of hazardous products in the workplace.
- Store products and materials based on criteria of availability, alteration, compatibility, and hazard.
- Ensure that the stored items can be perfectly identified.
- Seal hazardous product containers hermetically and label them properly to avoid hazards.
- Update the inventory of stored materials and products and manage stocks to prevent product expiration.

- **Trimming Room**

It has stainless steel benches for placing plastic bottles with samples fixed in formalin for subsequent trimming (**No. 12, annex 1**).

The trimming table is certified IVD CE (Directive 98/79/EC), which implies CE marking.

Some of the features of this table or trimming station are as follows:

- Construction material is non-absorbent, made of stainless steel.
- Designed with appropriate gaps for working without having to put one's head inside, whether standing or sitting. The top is completely closed, the sides are made of plastic glass (methacrylate), not reaching the edge of the table, and the front of the same material has a fixed part and a fold-down part.
- Extraction is triple, channeled from the top, front, and bottom (work surface).
- The frontal speed is about 0.7 m/s.
- The evacuation of contaminated air goes outside, previously filtered by a synthetic fiber prefilter and an extruded activated carbon filter, specific for formaldehyde.
- Lighting around 1000 lux.



Chemicals, sterile jars, and duchess-type containers for sample collection are stored in the Necropsy Room.

Recommendations for using the trimming table:

- It should not be used as a storage area for bottles with samples. The work surface must be kept clean and clear.
- The air extraction system must always be in good working condition.
- The operator should not detect strong odors from the material fixed in formalin inside.
- Before use, the work surface should be washed with 70% alcohol or another suitable disinfectant.
- Wash all utensils that are necessary before placing them on the trimming table.
- Place a tray inside for sample collection.
- After work is completed, collect all materials and wash all internal surfaces with 70% alcohol or any other suitable disinfectant.

Individual protection measures at the trimming table:

- For this task, the required PPE includes: Gloves resistant to chemicals, preferably made of nitrile, butyl, viton, neoprene/polychloroprene, or vinyl/PVC.
- Gloves should be worn over clean hands, and after use, hands should be washed and dried.
- Eye protection: Integral frame glasses with a panoramic lens and adaptable to the face. They must be airtight against gases and vapors and protect against splashes.
- Protective clothing: Gown, apron, sleeves resistant to formaldehyde permeation. Face shield for protection against droplets and splashes of liquids.
- Respiratory protection filtering equipment. These devices will be equipped with mixed filters specifically marketed for formaldehyde, always taking into account the limitations regarding concentration. BP type filters (B2P2 or BP3) are suitable.



Active carbon filter in the cutting hood and 3M filters with bayonet connection to the mask for protection against formaldehyde during sample cutting.

- Facilities with Observation Windows to the Autopsy Room.

One of the facilities (**No. 14, annex 1**) has a small window for the transfer of samples, including tissue samples in containers with formalin for subsequent processing, as well as biological samples (fluids, tissues, etc.) for freezing in freezers at -20 and -80 °C, for preservation, intended for teaching or research purposes.

From the entrance door to the Autopsy Room, through the corridor (**No. 2, annex 1**), one accesses the anteroom (**No. 7, annex 1**), where disposable clothing (plastic gowns, plastic shoe

covers, and surgical masks) are available for use by authorized personnel, visitors, etc., to access the adjacent facility, with a large observation window to the Autopsy Room (**No. 15, annex 1**).

- Office

It is equipped with a computer, and all documentation regarding the registration of entry and exit of cadavers and viscera is filed here, in addition to that required for the proper disposal of waste (**No. 13, annex 1**).

6. PROCEDURE FOR RECEIVING BODIES AND ORGAN SAMPLES (BIOPSIES)

The cadavers sent to the Autopsy Room come from various sources:

- **HVULE.** From the Veterinary Hospital, cadavers are received at the Diagnostic Service of Pathological Anatomy for:

- 1) **Diagnostic necropsy** and corresponding report at the request of the owners. These necropsies involve companion animals (dogs, cats) or livestock species (ruminants, pigs) and horses.
- 2) Necropsies of cadavers donated by their owners for **teaching purposes**.
- 3) Necropsies of **wild animals** sent by the Nature Protection Service (SEPRONA).

- Cadavers of animals used for experimental purposes in **Research Projects**.

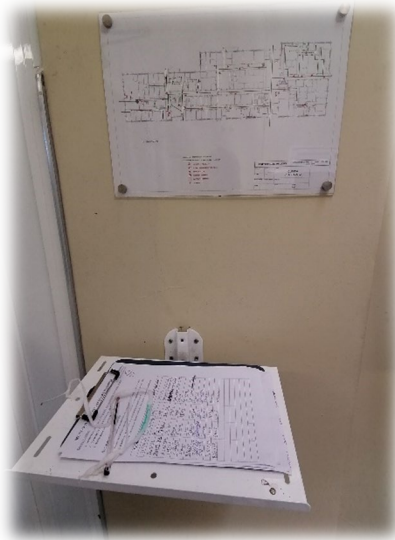
- **Other** sources of cadavers: Veterinary Clinics, private owners, livestock farms, the University of León Farm.
- Cadavers of farm animals and equines sent by the Biological Recycling Plant of Agricultural By-products S.A. (**REBISA**) of León through a collaboration agreement, intended for practical teaching of Pathological Anatomy in the Veterinary Degree courses.
- Cadavers of **birds (broilers)** from the company Huevos León, used in practical teaching of Pathological Anatomy (collaboration).

Additionally, various **organs** are received:

- 1) Sent by **HVULE**: these are **biopsies** obtained by surgical resection for diagnosis and issuance of the corresponding report.
- 2) From **slaughterhouses**: sent by the slaughterhouse inspectors requesting a diagnosis or collected by professors at the slaughterhouse, which are intended for practical teaching of Pathological Anatomy.
- 3) Sent by **clinical veterinarians** who have performed a field necropsy.

The access to these cadavers is managed directly from HVULE (for cadavers from the hospital itself, which are registered upon entering the Necropsy Room), or from the external access door of the Necropsy Room, which is equipped with a hoist to facilitate the entry of large animal cadavers (**No. 10, Annex 1**).

Both for cadavers and organs, the transportation system involves the use of sealed and waterproof containers.

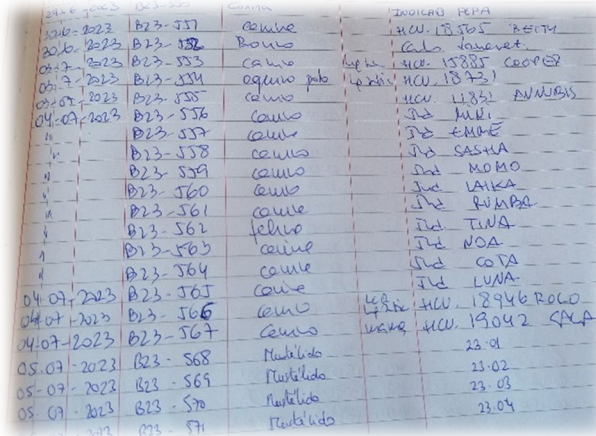


Registration of HVULE bodies at the entrance of the Necropsy Room and external door with hoist for the entry of large animal bodies.

Animal carcasses sent for necropsy and subsequent report issuance must be accompanied by a **request** that includes: animal identification, clinical history, presumptive diagnosis, and complementary tests. In addition, there must be a conservation procedure for its incineration by the owners and/or disposal of the carcass by the center, signed by the responsible veterinarian.

For the carcasses of mammals and birds intended for the teaching of Pathological Anatomy, their clinical histories are unknown.

Each carcass (necropsy) or organ sample (biopsy) is assigned a registration number in the corresponding record books, for case tracking, its report, and corresponding filing in the databases of the Diagnostic Service and in the Pathological Anatomy laboratory itself (paraffin blocks and histopathological preparations).



FECHA	REGISTRO	ORGANO	INDICACION
20.10-2023	B23-557	Reumate	HCU. 15705
20.10-2023	B23-558	Reumate	HCU. 15706
04.07-2023	B23-553	causio	HCU. 15785
04.07-2023	B23-554	causio	HCU. 15786
04.07-2023	B23-555	causio	HCU. 15787
04.07-2023	B23-556	causio	HCU. 15788
04.07-2023	B23-557	causio	HCU. 15789
04.07-2023	B23-558	causio	HCU. 15790
04.07-2023	B23-559	causio	HCU. 15791
04.07-2023	B23-560	causio	HCU. 15792
04.07-2023	B23-561	causio	HCU. 15793
04.07-2023	B23-562	causio	HCU. 15794
04.07-2023	B23-563	causio	HCU. 15795
04.07-2023	B23-564	causio	HCU. 15796
04.07-2023	B23-565	causio	HCU. 15797
04.07-2023	B23-566	causio	HCU. 15798
04.07-2023	B23-567	causio	HCU. 15799
05.07-2023	B23-568	Mastelido	23.01
05.07-2023	B23-569	Mastelido	23.02
05.07-2023	B23-570	Mastelido	23.03
05.07-2023	B23-571	Mastelido	23.04

Logbook. Biopsies

7. WASTE DISPOSAL

It is the responsibility of the University of León (ULE) to comply with current waste legislation. To this end, the [Hazardous Waste Management Manual](#) defines the management model implemented at the University.

The collection, transport, and disposal of animal carcasses or animal by-products not intended for human consumption (**SANDACH**) are carried out through a collaboration contract between **REBISA** and ULE. This collection is done weekly, or twice a week, from September to December and February to May, by the authorized company (EU Regulation No. 142/2011 of the Commission, of 25/02/2011, which establishes the health rules applicable to animal by-products and derived products not intended for human consumption). In the commercial transport document of by-products, the Necropsy Room of the HVULE is listed **as the sender of material for diagnostic, education, and research purposes** (establishment with **SANDACH code S24089001**).

Biotrán Waste Management, S.L. is responsible for the Management and Treatment of specific and hazardous healthcare waste at ULE: infectious healthcare waste contaminated by pathogens (non-returnable containers, black for specific healthcare waste), needles and sharp and cutting material (yellow containers), liquid waste, blood samples, blood derivatives, etc. (single-use drums, made of polyethylene, with screw cap).

In the Necropsy Room and the Pathological Anatomy laboratory, **chemical wastes** such as non-halogenated solvents: alcohols (ethanol) and aldehydes (formaldehyde), and their corresponding aqueous dilutions, and aromatic hydrocarbons (xylene) are also generated. As indicated in Regulation EC1272/08, waste containers will have the corresponding labels: waste identification code, producer and manager data, packaging date, place where it was generated, name of the

waste, and hazard pictogram.

Waste similar to municipal waste is that generated in the Necropsy Room which is not specific to the activity carried out there and, therefore, does not present special management requirements.

Teaching staff responsible for student practices, and principal investigators of research projects, as generators of hazardous waste, have the following functions and responsibilities:

- Inform students and collaborators under their supervision about matters affecting them in terms of waste.
- Manage hazardous waste as indicated in the Hazardous Waste Management Manual.
- Classify, package, label, and correctly store the waste generated in their students' practices and those derived from their research projects. For this, they will have the assistance of Laboratory Specialist Technicians.
- Anticipate the quantity and type of waste generated in order to request from the Laboratory Technicians the corresponding containers and labels.

Laboratory Specialist Technicians in hazardous waste management have the following functions and responsibilities:

Coordinate with the liaison from the Faculty of Veterinary Science and HVULE.

- Sign the delivery note and the control and follow-up documents related to the Collection or Replacement Requests processed through the Web (<https://servicios.unileon.es/gestion-de-residuos/introduccion/>), in those collections where they carry out the delivery of waste from the Necropsy Room.

Classify, package, and correctly label the waste generated in the Necropsy Room according to the instructions of the responsible for the Diagnostic Service of Pathological Anatomy or the teaching staff responsible for the practices/research in the Necropsy Room.

Keep labels and containers in proper conservation state.

Maintain a correct location of the waste.

Collaborate with the responsible teaching staff.

Inform themselves and anticipate the quantity and type of waste generated in the Necropsy Room and request through the Web (<https://servicios.unileon.es/gestion-de-residuos/introduccion/>) the corresponding containers and labels.



Black drum (urban-like waste) and yellow container (special sanitary waste: needles, scalpel blades, etc.).

8. USER TRAINING

8.1. New staff joining the Necropsy Room (teachers, visitors, postgraduate students, technical staff) and students of the Veterinary Science Degree will be informed about the biosafety measures in the Necropsy Room (Article 12, Royal Decree 664/1997).

8.2. To reduce the hazards in the Necropsy Room, emphasis will be placed on:

- The proper use of PPE (Personal Protective Equipment).
- The proper maintenance of such protective means and instruments.
- The proper management of hazardous waste.

8.3. The Occupational Health and Safety Service (SPRL) of the ULE will provide periodic training on safety and hygiene to teaching and technical staff.

8.4. The managers of the necropsy room will immediately inform the SPRL, the exposed personnel, and the rest of the affected staff about any accident or incident involving a serious hazard.

9. SPECIFIC GOOD PRACTICE GUIDES (informational posters)

- Hand cleaning.
- Cleaning and disinfection of equipment (gown, scrubs, and boots), instruments, and facilities.
- Action protocol in case of accidents.
- Waste Management.
- Control for the elimination of insects and rodents.



10. WHAT TO DO IN CASE OF AN ACCIDENT?

10.1. Cut during the performance of the necropsy

If a student cuts themselves during a necropsy, they must immediately stop their activity and notify the responsible teacher, dispose of the gloves, and wash with running water for a few minutes. The wound is inspected and disinfected with povidone iodine.

If the wound is deep, the student will be taken to the appropriate health center, where the wound will be evaluated by a healthcare professional and sutured, if necessary. If the wound is superficial, it will be protected with a suitable dressing.

If the student reports not being vaccinated against tetanus, they must go to the hospital or health center where they will receive the appropriate care, tetanus immunoglobulin will be administered, and they will be vaccinated against tetanus.



First-aid kit available in the Necropsy Room.

10.2. Building evacuation/confinement plan

Upon activation of the **emergency protocol** from the Faculty of Veterinary Science, an orderly evacuation from the Necropsy Room will be initiated, or exit to the outside from this facility will be prevented (Confinement).

General evacuation advice for the building should be followed, for example, in case of fire, using the alarm buttons.

The Self-Protection Plan of the HVULE establishes the available resources and the manner in which actions will be taken in case of an emergency. In the anteroom of the Necropsy Room, there are fire extinguishers available for use by those who are trained and only when such action does not pose a danger.

In the access corridors and anteroom of the Necropsy Room, emergency exits are clearly marked, as well as the location of alarm buttons, fire extinguishers, etc. (**Annex II**).



Fire extinguishers (powder and CO2) at the entrance and emergency cryptograms inside the Necropsy Room.





11. HEALTH SURVEILLANCE

The **Health Surveillance Programme** described in the Occupational Hazards Prevention Law will be followed, tailored for each individual working in the Necropsy Room and Pathological Anatomy Laboratory. The personnel of the Health Surveillance Area will be familiar with the conditions of exposure to hazards experienced during work. In any case, the Prevention Service may propose individual protection measures, also maintaining an individual medical history

12. EMERGENCY CONTACT ADDRESSES AND PHONE NUMBERS

12.1. Internal

Occupational Hazard Prevention Unit, University of León.

Avda. Facultad de Veterinaria, 25. 24001 (LEÓN)

Phone 987 29 19 44

Occupational Hazard Prevention Technician José Ámez del Pozo

Email gerjap@unileon.es

• Maintenance Services.

[Microcomputer Maintenance](#)

[Communications Network Maintenance.](#)

[Negotiated Works Services and Maintenance.](#) Ext 3333

[Secretariat of infrastructure and Maintenance](#)

Security Service

GARDA Security Company: 608 750 935. Ext. 6069.

Fire alarms

Extincar: 666 845 725.

Accident insurance

- Students: have a School Insurance. Forms for requesting reimbursement of care costs can be collected at the Prevention Service and, depending on the building, at Concierges and Student Secretaries.
- Technical, Management and Administration and Service Personnel (PTGAS) and Teaching and Research Personnel (PDI): can be treated by the Mutual Insurance Company, but they are covered by the Social Security regime or by Societies.
- Third Cycle Scholars: ULE contracts an accident insurance policy, which may vary from year to year. Information: Prevention Service or the Research Service (Scholarships Section).

12.2. Externals

- Emergencies: 112
- European single number (ambulances, firefighters, police, and civil protection): 112
- INSALUD Emergency Service: 061
- National Toxicological Center (24 h): 91 562 04 20



- León City Council: 987 895 500
- León Emergencies: 112
- National Police of León: 091 / 987 218 900
- Civil Guard of León: 062 / 987 253 211
- Municipal Police León: 987 255 500 / 092
- Civil Protection of León: 987 222 252
- Red Cross of León: 987 222 222
- Social Security of León: 061
- Ambulances of León: 061
- Firefighters of León: 987 216 080 / 080

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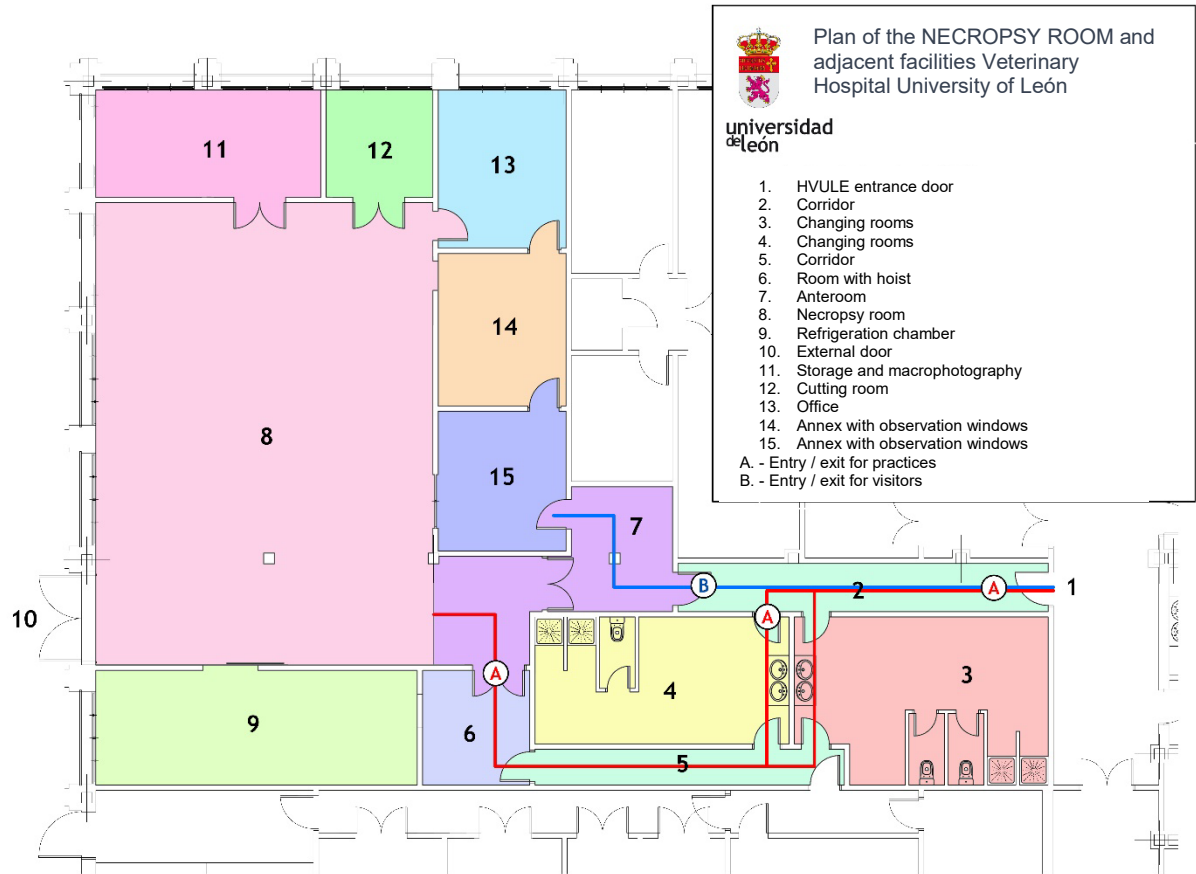
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- Reglamento (UE) nº 142/2011 de la Comisión, de 25 de febrero de 2011, por el que se establecen las disposiciones de aplicación del Reglamento (CE) nº 1069/2009 del Parlamento Europeo y del Consejo por el que se establecen las normas sanitarias aplicables a los subproductos animales y los productos derivados no destinados al consumo humano, y la Directiva 97/78/CE del Consejo en cuanto a determinadas muestras y unidades exentas de los controles veterinarios en la frontera en virtud de la misma. DOUE-L-2011-80346.



14. REVISIONS – SOP. Necropsy Room. HVULE.		
pdf Versión.	Date	Modifications
Ver. 01	06/30/2023	Initial version. Annual review or when significant changes occur in the content.

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APPENDIX I: Plan of the Necropsy Room and Adjacent Facilities.





ANEXO II: Evacuation Plan of the Necropsy Room and adjacent facilities.

