



SCHOOL OF VETERINARY SCIENCE

STANDARD OPERATING PROCEDURES

CLINICAL - OHS - OPERATIONS

DEPARTMENT OF POST-MORTEM

Governing Protocols

www.legislation.qld.gov.au/LEGISLTN/CURRENT/W/WorkHSA11.pdf

www.legislation.qld.gov.au/LEGISLTN/CURRENT/A/AnimalCaPrA01.pdf

Australian Veterinary Association (AVA) policy 3.3 - Code for Infection Control

The (AVA) supports practices that:

- *Ensure the safety and welfare of all animals under veterinary care.*
- *Provide a safe and healthy working environment for owners, veterinarians and staff.*

Animal hospitals and practitioners have a duty of care and must take reasonable action to safeguard animals, staff and the public from infection. Employers must establish procedures and provide information, training and supervision, especially for infection control.

Veterinarians must be conscious of the potential for zoonosis to present as in apparent infections in animals and of their responsibilities regarding cross infection among animal patients. They must recognise the potential for pathogens to be introduced through inadequate infection control during administration of medication.

Background

The guidelines set a minimum standard for infection control in animal hospitals and in the field. They provide broad principles and a framework for developing infection control procedures to prevent spread of diseases between animals and from animals to staff. Appropriate procedures will vary according to the size and nature of the practice and the facilities.

The attention of practitioners to infection control may be an issue in any proceedings, civil or public, relating to questions of liability.

This standard operating procedure (SOP) is a guide only; it does not replace or override the legislation that applies in the relevant State or Territory jurisdiction. The SOP should only be used subject to the applicable legal requirements (including OH&S) operating in the relevant jurisdiction.



STANDARD OPERATING PROCEDURES

CLINICAL

DEPARTMENT OF POST-MORTEM

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Drive: G: (SOP 2016 Post-Mortem)

Standard operating procedures involving clinical practice

TITLE: SOP-PM001: Post Mortem & clinical practices

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for Animal Necropsy

The University of Queensland Gatton, Post-Mortem Department, is keen to encourage submission of cadavers for post mortem examination, and to allow efficient running of the post mortem room, we have developed this Code of Practice, the overall aim of which is to make the service work well for everyone and maintain safety standards.

Definitions:

Teaching PM's

Teaching post-mortems are free to the client / owner but **must** be referred by a veterinarian the student's report will be sent to the referring veterinarian, NOT the owner.

Teaching post-mortems are performed by 5th year vet students under the supervision of a qualified pathologist supported by a trainee pathologist.

The student will write a report that describes all the gross findings. Any samples for histopathology will be examined by the pathology interns and added to the student's report (after approval by the supervising pathologist).

Histopathology on teaching specimens is limited to 1-2 slides for diagnosis confirmation only. **If cases require more extensive histopathology they must be submitted as paid post-mortems.** We do NOT usually take samples for culture / bacteriology, virology, toxin testing or other ancillary tests since this would potentially incur considerable cost.

Owners can nominate to have the body of the donated animal sent for private cremation but it is up to the owner to arrange this with a cremation company and payment for this must be arranged by the owner of the animal. If there is private cremation requested this **MUST BE CLEARLY STATED** on the request form. We will arrange for the nominated cremation company to come and pick up the body from the PM room once the autopsy has been performed.

Please note that for biosecurity reasons we DO NOT return bodies to the owners after a PM has been performed.

On rare occasions donated bodies may not be used for PM classes and the body will be disposed of i.e. we reserve the right not to use a donated body for teaching purposes

If "communal cremation" of the body is selected on the request form please note that this actually involves deep burial, not cremation (UQ no longer has an operating incinerator).

Turn-around time for final results is 6-8 weeks but results / answers are not guaranteed.

Paid PM's

These are performed by the pathology intern / resident pathologist under supervision of the supervising pathologist outside class times.

A written report will be issued including gross findings, histopathology and other test results including bacteriology. Note that additional tests like immunohistochemistry, toxicological testing, and virological assessments may incur additional costs. In cases where these tests are applicable the referring veterinarian will be consulted before the tests are ordered.

Histopathology on paid cases includes a minimum core tissue list + additional abnormalities.

All animals submitted for paid post mortem must be referred by a submitting veterinarian and come with documentation including a necropsy submission form and additional medical history if applicable. The examination of the animal will not commence until the paperwork is received by the autopsy service.

A paid diagnostic autopsy may involve insurance claims or legal claims, potential legal or liability issues, research animals with unexpected mortality or adverse events, reportable/notifiable or suspected zoonotic diseases, herd health issues or disease entities where other animals or people are at risk. Veterinarians are strongly encouraged to submit cases under the paid stream when rapid and highly detailed reports need to be guaranteed. These cases are handled by a trainee and supervising pathologist. Reports are only issued to the referring veterinarian.

Turn-around time for final results is 3-6 weeks.

General

1. All routine diagnostic post mortem examinations will be carried out by, or under the supervision of, the Duty Pathologist. Wherever possible necropsies will be performed on the day of receipt but the Duty Pathologist is at liberty to prioritise necropsies, after consultation with the submitting clinician(s) so there may be occasions where there has to be a carry-over of cadavers to the following day. Note: Teaching necropsies submitted out of teaching time may be retained in cold room or frozen until teaching resumes.
2. If you are in doubt as to the procedure for submitting animals or specimens for post-mortem examination, contact the trainee pathologists or in their absence the Duty Pathologist.
3. Post mortem examinations are only done within normal working hours (8am to 4pm, Monday to Friday). Please contact the Duty Pathologist for approval, if an emergency post-mortem is required outside of these hours.
4. Teaching: Bookings for sectional teaching classes to be held in the post mortem room should be made before the start of term through the school administrative officer, not the post mortem room technician.
5. The post mortem room may be available for booking for other activities such as practice or demonstration of a new surgical technique by arrangement with the post-mortem technician.

6. All members of staff and students are required to complete an introduction to post mortem room practices prior to commencing work in the facility, where appropriate, instruction in research related pathological procedures on the post mortem room will be given.
7. Humane killer devices, barbiturates, needles and syringes must only be used by qualified personnel and secured as soon as practical after use.
8. All horses must be PCR negative for Hendra virus prior to autopsy examination commencing. All referring vets are to submit via email/hard copy Hendra negative results or draw the blood and then indicate clearly if a test sample has been submitted & to whom.

Exceptions by approval of UQ Biosecurity, UQ & OHS Management only: In rare instances, for example low risk cases of exceptional public or legal importance (e.g. Jockey fatalities/police cases), the pathologist may be approved with in full biological PPE while the testing result is pending carry out a post mortem examination, the carcass will be double bagged and disposal will be delayed until the negative result is confirmed.

Routine Diagnostic Service

1. UQ internal cadavers from the Veterinary Medical Clinic, Clinical Studies or Equine Clinic for post mortem examination must have a [VLS Necropsy Request Form](#), with details Inc. disposal instructions (UQ disposal/private cremation) paid or teaching PM and Patient Number clearly identifiable.
2. All Cadavers must be entered into a log prior to examination. Paid necropsies, donation or research animals should have traceable information, (who, what, when, where, why?) Submit all forms to the post-mortem technician or place in red folder located near cold-room (8106, 127) on top of drug safe.
3. Paid post-mortem's must have confirmation the animal is for private cremation and verify and record details for later collection. Label all containers and body bags with the animal's Name, ID number and owners surname plus any protocol-relevant information.
4. Cadaver delivery: normal working hours 8am to 4pm, Monday to Friday. Please contact post-mortem technician to deliver all cadavers to the chill room (8106, 127). Delivering animals outside working hours please contact head of Anatomy and store cadavers in cold room (8106, 127). The *VSDS Necropsy Request Form* must be submitted.
5. Tissues from post-mortem examinations can be saved on request, after which they will normally be discarded, unless retained for use for teaching purposes (e.g. gross rounds & practicals), or by agreement. Such requests for retention of tissues should be made at time of carcass submission otherwise tissues will be disposed of at the time of post mortem

examination, and supported by a valid animal ethics certificate. All horses must be Hendra tested prior to the removal of tissues for teaching and research purposes.

6. Individual specimens should be accompanied by all of the necessary information to identify the specimen, including the animal ID, date of collection, tissues submitted, fixative used or specific storage requirements, any special laboratory tests or procedures requested, and the name of the person conducting the necropsy.

Donation of cadavers for Student Necropsy

Please attach a label to the appropriate cadaver so we can match the [VLS Necropsy Request Form](#) for necropsy cases. We will need an individual form for every animal. Please feel free to staple a medical history to the back as well, or have students complete the form as appropriate, but we will need the referring veterinarian's name and email in order to return the necropsy reports.

The turn-around time for results for teaching cases is generally 2-4 weeks but can be 6 weeks in exceptional circumstances.

We are limited by financial constraints for generally 1-2 histo slides (generally just confirming a Dx) for teaching cases and rarely do any additional testing like culture. Let us know though if any animals might be suitable for case reports etc.

If clients want extensive examinations and guaranteed answers it would be best for them to select a paid necropsy.

Quotes for paid necropsies are available on request

Animals will be sent for routine disposal unless specified on the paperwork that they are going for private cremation. Most companies will collect the remains post-examination directly from UQ and we work with them to ensure that cremation animals are routed as quickly as possible to the aftercare service. Please note there is a tick box for private cremation on the form but to emphasize it by writing "PRIVATE CREMATION" or highlighting it on the form is strongly encouraged.

Delivery of animals for Necropsy to Post Mortem Dept.

- Please direct clients/agents to building 8106, loading ramp at the back of the car park (turn left out of the VMC car-park, then right onto Inner Ring Road, turn into first car park on the right and there is a large dark blue roller door / loading bay at the back. Contact phone numbers are on the door.

The Post-Mortem Technician is usually working from 8am to 4pm and should be contacted if there is an animal for collection. Bodies will not be received outside of 8-4pm Monday – Friday, unless delivered by authorised University personnel or by prior arrangement with the PM and anatomy staff.

Submission of Samples for Microbiological Culture

What to Submit?

Swabs in transport medium can be used for both aerobic and anaerobic culture. Fluid, such as joint or cerebrospinal fluid, can be submitted in small sterile vials, e.g., 2 or 5 ml. If submitting tissue for anaerobic culture, use a small vial in order to exclude as much air as possible. Pieces of tissue for culture for suspect mycoses should be as large as possible. Impression smears made directly from lesions can be useful.

If a particular infection is suspected, please note this on the submission form, so that the most appropriate cultural conditions (medium, atmosphere, temperature) can be elected.

How long will it take?

Samples for microbiological culture are always set up on the day the sample is received.

Bacterial cultures require a minimum of 18 hours, i.e. overnight, incubation before identification can commence. After overnight incubation it may be possible to determine genus, e.g. Streptococcus, or group, e.g. Enterobacteriaceae. However, determination of species may take a further 48 - 96 hours.

Antimicrobial sensitivities are set up from an overnight culture, provided there is sufficient growth and read the following day. Thus sensitivities will normally be available the second day following submission (48 hrs).

Some slow growing bacteria may require longer incubation before testing. Examples are:

- Trueperella (Arcanobacterium) pyogenes 48 hours
- Fusobacterium spp. Bacteroides spp. 48 - 72 hours
- Nocardia asteroides 2 - 5 days

Aerobe, Microaerobe or Anaerobe?

The majority of pathogenic bacteria show optimal growth under aerobic conditions. Examples include:

Streptococcus, Staphylococcus and members of the Enterobacteriaceae

Some bacteria grow aerobically, but will grow much faster under enhanced CO₂. Examples are: Rhodococcus equi and Trueperella (Arcanobacterium) pyogenes

Some pathogenic bacteria must have an enhanced concentration of CO₂ for growth. Examples are: Haemophilus sp. and Dermatophilus congolensis

Some pathogenic bacteria require an anaerobic atmosphere for growth. These include:

Sporing anaerobes, Clostridium spp. Non-sporing anaerobes, including Actinomyces bovis, Fusobacterium spp. Bacteroides spp.

Standard operating procedures involving biosecurity & transport of biological material

TITLE: SOP-PM02: Procedures involving Biosecurity

Gatton Biosecurity detail, refer to <http://www.uq.edu.au/gatton/index.html?page=192946>

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for Biosecurity

Purpose and Objectives

This policy outlines the University's commitment to protect the health and safety of people and the environment by managing risks posed by work involving biological material, and to ensure compliance with relevant legislative requirements.

Definitions, Terms, Acronyms

Accredited Organization - an organization or entity that has been accredited by the OGTR for GM research/dealings.

Biosafety - measures relating to the protection of an environment or population etc. from contamination with or infection by a biological agent (Oxford English Dictionary)

Dealing - includes any procedure that involves a GM/GMO/GMMO, as described in [PPL 2.40.02 Biosafety Requirements](#)

Department of Agriculture-Biosecurity (DAgB) - Commonwealth Department of Agriculture section responsible for the control of biological imports and quarantine

DoH – Commonwealth Department of Health (formerly Department of Health and Ageing)

DSGL – Defense Strategic Goods List, identified in Regulation 13E of the Customs (Prohibited Exports) Regulations 1958 (C'th)

GM/GMO/GMMO – Genetically Modified/Genetically Modified Organism/Genetically Modified Microorganism

High Risk Biological Material – specified by the UQ IBC as described in [PPL 2.40.15 Working with Potentially Hazardous Biologicals](#)

IBC - Institutional Biosafety Committee, established by an Accredited Organization, as required by the OGTR

IBSC - Institutional Biosafety Sub-Committee

OGTR - Office of the Gene Technology Regulator

Risk Assessment/Risk Management – a system of identifying hazards and evaluating risk – as described in <https://www.risk.admin.uq.edu.au/Signin.aspx>

SSBA - Security Sensitive Biological Agents- biological agents as regulated by the National Health Security Act 2007 (C'th)

Workers - Workers include staff, students (undergraduate and postgraduate), visitors, volunteers and contractors

3. Policy Scope/Coverage

This policy applies to all staff, students, visitors, volunteers and contractors who are working with biological material or working in areas where biological material is used.

4. Policy Statement

The University of Queensland is dedicated to providing a safe and healthy work environment and pursues its strategic and operational objectives in a responsible manner, having a duty of care to its workers, the greater public and the environment.

The University of Queensland places a high priority on educating its workers on all occupational health and safety matters. The University Occupational Health and Safety Division, Institutional Biosafety Committee and Biosafety Advisors provide education, information and support to University workers that enable them to take responsibility for work involving biological material and their compliance requirements.

All University workers who are working with biological material or in areas where work with biological material is being undertaken are to be aware of, and abide by the relevant legislation, standards, procedures and guidelines that apply to them and the work that they are performing. This encompasses work with, but not exclusively, high-risk biological material (Risk Groups 2, 3 and 4), dealings involving Genetically Modified Organisms (GMOs), Quarantine material, toxic or venomous animals, Security Sensitive Biological Agents (SSBAs) and biological materials listed on the Defense and Strategic Goods List (DSGL).

This policy should be read in conjunction with the associated biosafety procedures and guidelines, and the [Institutional Biosafety Committee Terms of Reference](#) and Procedures document.

Any person who intentionally chooses not to comply with these requirements may be committing research misconduct, see [PPL 4.20.05 Research Misconduct](#), or be in breach of the relevant legislative requirements.

5. Compliance

When conducting work with biological material, the University is required by law to abide by the requirements set out in the following Acts and Regulations and refers to <http://www.uq.edu.au/ohs/index.html?page=29969> for details:

- Gene Technology Act 2000 (C'th), and Regulations 2001 (C'th) and associated corresponding Queensland legislation (Gene Technology Act 2001 (Qld) and Gene Technology Regulations 2002 (Qld));
- Quarantine Act 1908 (C'th) and Quarantine Regulations 2000 (C'th);
- Work Health and Safety Act 2011 and Regulations (Qld);
- National Health Security Act 2007 (C'th) and Regulations 2008 (C'th)
- Dangerous Goods Regulations (International)
- Environmental Protection Act (1994)
- Plus any other Act or Regulation with biosafety implications that may come into force.

TITLE: SOP-PM003: Procedures involving exposure to virus and other zoonosis**SCOPE:** All Authorized Personnel**RESPONSIBILITY:** All Authorized Personnel**PURPOSE:** To Outline the Proper Procedures for exposure to virus and other zoonosis

Zoonotic hazards

Care must be taken when handling live animals and carcasses as they may carry diseases that can affect humans and other animals e.g. Henipavirus, hydatidosis, sarcoptic mange, leptospirosis, Q fever, brucellosis, sparganosis, melioidosis, tuberculosis etc. Routinely wash hands after handling all animals and carcasses.

Henipavirus (Hendra virus) - The henipaviruses are naturally harboured by Pteropid fruit bats (flying foxes) and some microbat species. Henipavirus is characterised by a large genome, a wide host range, and their recent emergence as zoonotic pathogens capable of causing illness and death in domestic animals and humans.

Australian bat lyssavirus (ABLv) - and rabies vaccination is recommended for people who come into regular contact with bats (both flying fox's and micro-bats). Operators should avoid bites and scratches and use protective equipment when handling all bats. All wounds inflicted by bats or flying-fox's should be washed thoroughly with soap and water as soon as possible. Operators should always seek medical advice regarding post-exposure. Bats will not be accepted in the 8106 facility. A bat accidentally be submitted it must be immediately disposed of by safe methods.

Treatment whenever a bite, scratch or mucous membrane exposure to saliva from any Australian bat has occurred. Where the bat is available it should be tested for the presence of ABL. UQ mandates that Biosafety approval from UQ IBC be obtained prior to handling of all species of bats, whether be for research or for clinical work.

Q fever - can be transmitted to humans during contact with infected animals, or with infected uterine or placental tissue. A variety of animals may be infected including kangaroos, wallabies, dogs, cats, cattle, sheep and goats.

Vaccination

Vaccination is highly recommended, for people who come into regular contact with potentially infected animals. Blood and skin testing of personnel is recommended to assess previous exposure, followed by vaccination for susceptible individual. For short-stay visiting scientists and students, due to the time it takes for the vaccination to become effective, the need for the vaccination will be determined case by case basis.

Refer to <http://ppl.app.uq.edu.au/content/2.60.08-vaccinations-and-immunisation> and to <http://ppl.app.uq.edu.au/content/2.60.13-q-fever-screening-and-immunisation> for Q-fever screening and vaccination.

At no time will any person perform any post mortem or conduct any examination until the subject/patient is cleared of zoonotic hazards i.e. Hendra Virus, which must be sighted & confirmed in writing as negative before commencement via regulated laboratory testing.

TITLE: SOP-PM004: Procedures involving identification of RGIII or higher organisms

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for exposure to RGIII or higher organisms.

Contingency Plan - in case of identification of RGIII or higher organisms/ Security Sensitive Biological Agents (SSBA) in PC2 certified Diagnostic Lab. For detail, go to G:\OH&S\Biosecurity\2015 Biosafety

In the case of suspect organisms classified as class III or above: Emergency Procedures: Follow operating procedures below and immediately contact: UQ OH&S B1osafety, St Lucia on 336 51857 text. 51857) or 334 69489 (ext.69489) during business hour and follow the advice.

After -hour, contact Q-DAFF (formerly known as Biosecurity Queensland) on 13 25 23; QLD Health (3234 0111) or contact the emergency Disease Watch Hotline on 1800 675 888.

Operating Procedures:

Ensure all PPE as per PC2 guidelines are in place. These include disposable gloves and safety eyewear as per risk assessment/s relevant to the project. P2 masks should be available in the laboratory.

Inform all personnel present at the time of the organism that may have been initially identified as anything higher than RGII. Confirmation will be done through BSL immediately after.

Record details of laboratory personnel who may have been exposed. Following this, evacuate all non-essential personnel from the laboratory and restrict access.

Double contain the specimen and any associated samples and place in a class II biosafety cabinet. If samples have come from an animal, the animal, if stored in a cold room, will be labelled for easy identification, and cold room access will be restricted to Q-DAFF or other relevant personnel. Clean and disinfect hands, clothing, and shoes.

Contact UQ Biological Safety Advisors: Dr. Elizabeth Miric on Phone 336 51577 or Mrs Anne Tobin or Phone 334-69489 Contact your supervisor and Contact SVS OH&S/Biosafety coordinator on 5460-1966 or ext. 50966 or m.kyawtanner@uq.edu.au Seek medical advice by contacting UQ Gatton Health Service on 5460 1396 or visit ground floor N W Briton Annexe, (Admin Annexe)(Bldg. No 8101a) if between the hours of 8.30 am to 4.15 pm Monday-Friday. If outside these hours, contact your own GP or the nearest hospital. Clean and disinfect hands, clothing, and shoes. Seek medical advice.

Examples of risk groups, and the information on the Security Sensitive Biological Agents (SSBA) and the list are found via <http://www.uq.edu.au/ohs/index.html?page=29969>

<http://www.uq.edu.au/ohs/index.html?page=29969>

Useful Biosafety links: <http://www.uq.edu.au/ohs/index.html?page=133438>

TITLE: SOP-PM005: Procedures involving transport of biological material

Refer to <http://www.uq.edu.au/ohs/transport-of-biological-material-animals>

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for transport of biological material

Material such as animal, plants, blood specimens and human or animal tissues that is not genetically modified or regarded as Quarantine material must be transported across campus appropriately. One of the purposes here could be for diagnostic analysis across the road in building 8114, VLS.

The material should be doubly contained.

1. The material (e.g. blood) must be in a sealed primary container (e.g. nescofilm around the top of a vacutainer) which is wiped clean of blood and other fluids.
2. Placed that within a sealed secondary container such as a snap lock bag or a hard esky.
3. Identification document e.g. Blood & urine sample, species of the animal, both the contact details of the destination (e.g. Diagnostic Labs, Building 8114) and the origin (e.g. Small Animal/Equine Hospital, building 8156) should be available inside the outer container.
4. For transportation across campus or from another site, it is highly recommended to use UQ vehicle as using private vehicles may have insurance implications. For best advice, contact your Insurance Provider.
5. For transporting samples in liquid nitrogen or dry-ice, they must be packed as per IATA guideline including holes to let air out to avoid pressure being built-up inside the package. Liquid nitrogen must be in shipper. The entire container/package must be in separate compartment to the driver and the passenger of the driver.

<http://www.uq.edu.au/ohs/OHYG/OHYG-dryice.pdf>

Procedures Involving Euthanasia

TITLE: SOP-PM006: Procedures involving euthanasia of all animals of any size.

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for the euthanasia of animals for research

General

Euthanasia of animals may be required for a number of reasons including:

- Emergency euthanasia of animals with untreatable injuries incurred during capture, handling or transit.
- Cases of untreatable disease where an animal is suffering.
- Collection of unusual or infectious specimens for research procedure, for example, when fresh tissues are required for analysis.
- Destruction of live-captured declared pest animals (release is prohibited).
- Euthanasia of animals for teaching purposes.

Factors to consider when choosing an appropriate method of euthanasia are species, size, and safety, location of the animal and expertise and preference of the academic in charge or the chief investigator. The most appropriate method for species and age and size of animal should always be used.

Euthanasia procedures must be performed by persons competent in or qualified for the methods to be used, or under the direct supervision of a competent person. Some methods require considerable training and experience to be used appropriately.

Training should include:

- Familiarity with the normal behaviour of the species being euthanized.
- An appreciation of how handling and restraint affect behaviour.
- Understanding of the mechanisms by which the selected technique induces loss of consciousness and death; and recognition of signs of pain and distress.

The acquisition, care and use of animals for scientific purposes in Australia must be in accord with the Australian Code of Practice for the Care and Use of Animals for Scientific Purposes, and with Commonwealth, State and Territory legislation. All animal research must be approved by an Animal Ethics Committee (AEC) and covered by a valid animal research authority issued by an AEC.

Schedule 4 drugs (e.g. barbiturates, anaesthetics and tranquillisers) can only be administered by a veterinarian as an act of veterinary science (or an authorised person under their direction) or under certain circumstances, by an investigator (or an authorised person under their direction) under a valid research authority. As there is some variation in the statutory requirements of each State for the supply, possession, use and storage of these drugs, operators must consult the relevant legislation before use.

Use and storage of Schedule 4 drugs (e.g. barbiturates, anaesthetics and tranquillisers) is under UQ guidelines.

<http://www.uq.edu.au/ohs/?page=42714&s=6f61f7f2f86f1a59fbb73f78abb11a59>

<http://www.uq.edu.au/ohs/OHYG/OHYG-schpoisonsdrugs.pdf>

Methods of Euthanasia

While no ideal method of euthanasia exists, the procedure of choice should approach closely as possible the following criteria:

- Is painless and produces rapid loss of consciousness and death.
 - Interrupts consciousness and reflexes simultaneously.
 - Requires minimum restraint and avoids excitement and causes minimal psychological stress to the animals.
 - Is appropriate for the age of the animal.
 - Exhibits consistent and predictable action; is easily and safely administered by properly trained personnel; Causes minimal emotional effects to operator and observers.
 - Does not result in tissue changes that would affect a post-mortem diagnosis.
 - Is economical and readily available; and does not leave carcasses that if consumed will result in secondary poisoning. Methods of euthanasia fall into two broad categories – chemical and physical. These methods may cause death by three basic mechanisms:
 1. Hypoxia, direct or indirect.
 2. Direct depression of neurons vital for life functions; and
 3. Physical destruction of brain activity and destruction of neurons vital for life.
- Below is a brief description of some of the recommended methods of euthanasia.

Inhalant agents

Euthanasia with inhaled gases is slow due to the requirement for any gas being inhaled to reach the required concentration in the lungs before taking effect. A closed chamber for holding the gas is needed and personnel safety must be considered in order to avoid exposure to the toxic gas.

Euthanasia by inhalation of toxic gases is not suitable for animals that hold their breath (e.g. diving or burrowing birds and mammals) or breathe at low frequency (e.g. amphibians and reptiles).

Non-inhalant methods should be used for neonatal animals as they are relatively resistant to hypoxia. Physiological mechanisms exist to protect the animal from cerebral damage when oxygen is limited in the uterus and during birth.

All inhalant agents ultimately cause hypoxia, neonatal animals may therefore take longer to become unconscious and die than adult animals. Therefore, it is recommended that inhalant agents not be used as a sole method of euthanasia in neonatal animals less than 16 weeks old

CO₂ Gas Chamber 8106



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Authorised by Myat Kyaw-tanner - Occupational Health & Biosafety Officer
Authorised by Rachel Allavena – Head Pathologist
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Drive: G: (SOP 2016 Post-Mortem)

Injectable agents Barbiturates

One of the most humane methods of euthanasia is the administration of a barbiturate overdose either by the intravenous or intracardiac routes.

The intraperitoneal route is used when an intravenous injection would result in stressful handling or be dangerous to the animal or the operator and when there are no easily accessible veins.

Commercially prepared 'euthanasia solutions' (e.g. Lethabarb®) are very alkaline and are thought to cause irritation of the peritoneum and pain prior to unconsciousness.

Large volumes of anaesthetic solution would have to be used in anything other than a very small animal (euthanasia solutions are approximately 4 times more concentrated than barbiturates designed for anaesthesia).

Because of the difficulty and unpredictability in performing the injection accurately, intracardiac injection should only be used if the animal is heavily sedated, unconscious or anaesthetised. In some situations, if the operator is skilled and experienced in the technique, intracardiac injection may be used on neonates or small animals without causing distress.

Animals need to be well restrained. If animals cannot be handled they may need to be immobilised in a restraint cage or sack or sedative drugs/anaesthetic gases administered prior to injection of barbiturate.

Barbiturates are restricted substances, listed as Schedule 4 under the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP). This listing requires that they be restricted to medical, dental or veterinary prescription or supply. Refer to the relevant State and Territory legislation for specific details on the supply, possession, use and storage of these drugs.

Penetrating by Captive-Bolt

Also refer to UQ risk assessment database ID

<https://www.risk.admin.uq.edu.au/Task/Default.aspx?TaskID=56360#Task:56360>

A penetrating captive-bolt pistol uses a blank cartridge to fire a bolt into the brain of the animal. This causes concussion and trauma to the cerebral hemisphere and brainstem which renders the animal instantaneously unconscious. A correctly stunned animal will collapse immediately often with muscular contractions and involuntary kicking movements of the legs.

Stunning with a captive-bolt only stuns an animal; therefore it must be immediately followed by a second method that ensures death (e.g. exsanguination or pithing is an acceptable method of euthanasia in larger animals i.e. horses, pigs and ruminants, sheep, cattle, goats).

Suitable restraint of the animal and exact placement of the bolt is essential. Captive-bolt must be firmly held against the animal's head when firing.

The manufacturer's recommendations should be followed on the most appropriate blank cartridges for each species. Captive-bolts are not regarded as a firearm however; it is beneficial for the operators to be properly trained in their use more from animal welfare aspects rather than from OH&S.

Process for Euthanasia with captive bolt for Post Mortem

A captive bolt kills the animal and renders it unconscious instantly without causing pain.

Cattle shot correctly with a penetrating captive bolt, have irreversible damage to their brain and cannot be revived. Though the animal is unconscious and brain dead, a terminal procedure must take place to ensure death. I.e. Bleeding-out (exsanguination).

The penetrating captive bolt is recommended because it is more reliable at delivering an effective stun in livestock. Before bleeding out though, the animal should always be checked to make sure that it is not conscious, i.e. the corneal reflex is checked. The unconscious animal will have a slack jaw, and will not blink when the eyeball is touched.

Bleeding-out must be done by a skilled person using a suitable, sharp knife and adequate restraint of the animal. The cut should transect both the carotid arteries and both the jugular veins. The animal should be monitored to ensure that death has occurred from effective blood loss.

Procedure

The animal is placed into crush and restrained, only one person is allowed in the room when an animal is being euthanized. Then the spotter stands at the door to the crush room and waits for the post mortem technician to get ready.

The Post Mortem Technician loads the bolt gun gives a nod they are ready to the spotter who give the 'fire in the hole' call. The Post Mortem Technician then places the device upon the animal head at cross section between the ears and fires, quickly placing the device down in a safe place.

The Technician then takes a slaughtering knife and preforms the exsanguination of the animal's throat. The animal is then bled; released from the gate around its neck and placed to the floor in order to allow the wound to be level to the heart or lower.

Because the animal is not able to be hoisted to maximise blood flow, water is applied to the open wound to prevent blood clotting and keep wound flowing. This insures death is quick by preventing clots, providing effective blood loss.

The animal is checked for the five signs of death, and once dead is transported to the PM room.

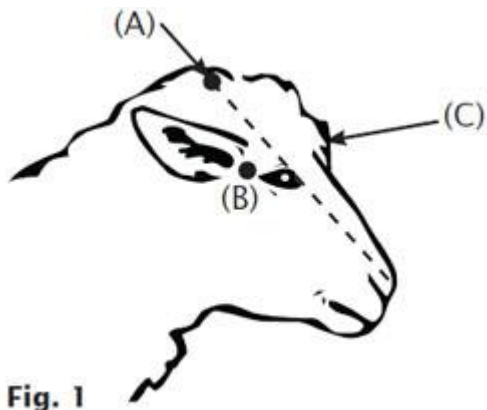
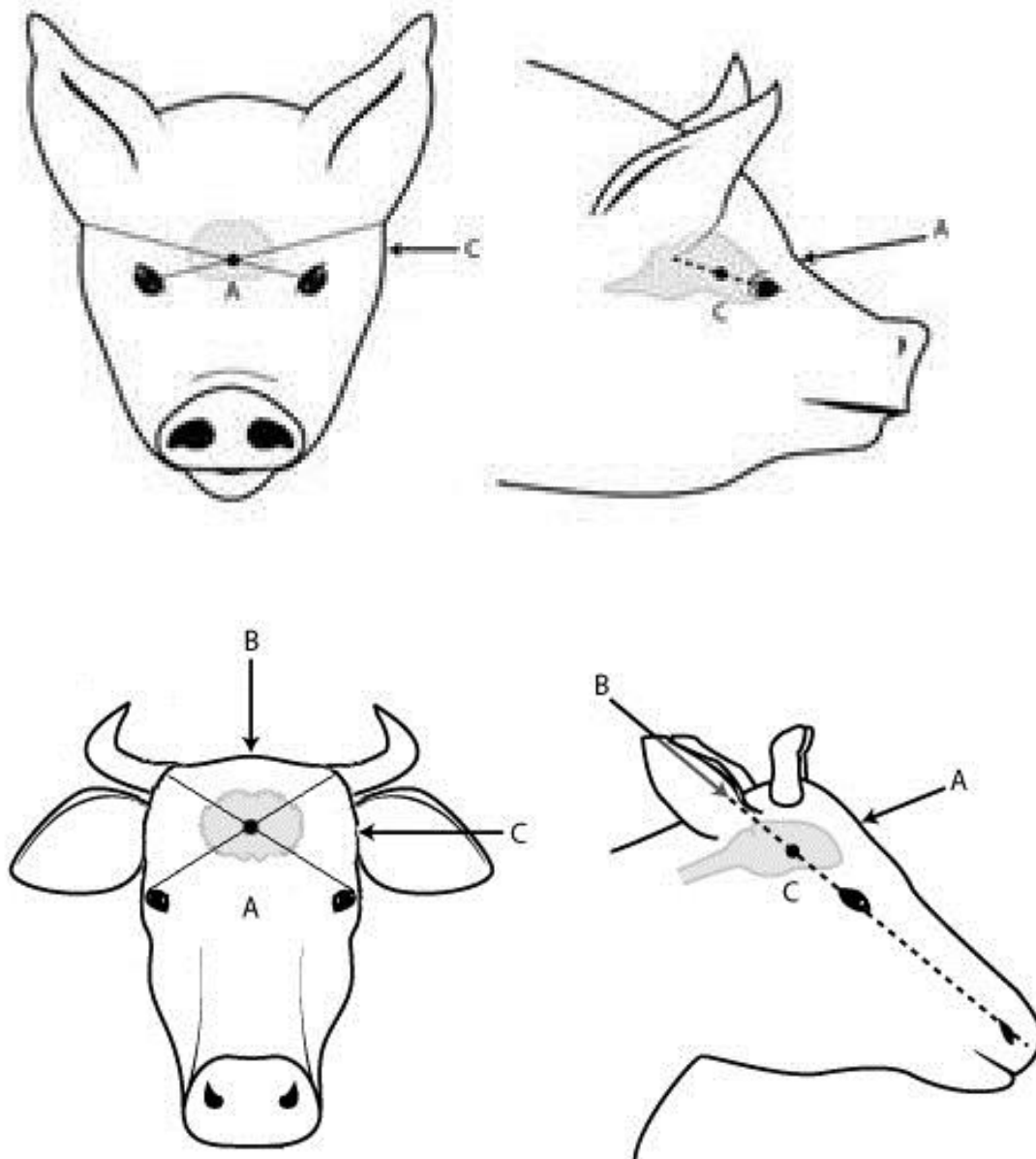


Fig. 1

Examples of Points of entry:



Blitz-Kerner captive-bolt



Confirming Death Five Signs to check

After the application of a euthanasia procedure, it is essential that the death of the animal be confirmed. Signs that should be used to indicate death are listed below.

- 1) Corneal and palpebral reflexes are lost – the corneal reflex is elicited when the eyeball is touched and the palpebral reflex is elicited when the eyelids are stroked. The eye should remain open and the lid should not move.
- 2) Glazing of eyes dilated pupil – this will occur rapidly after death. The cornea loses its clear moist appearance and becomes opaque, dry and somewhat wrinkled.
- 3) No Jaw tone - Loss of colour in mucous membranes– mucous membranes become pale and mottled, there is no refill after pressure is applied and they become dry and sticky. More useful in larger species where the mucous membranes in the mouth are easily accessible.
- 4) No tongue tone – The tongue will be flaccid and falls out of the mouth.
- 5) Absence of respiratory movement – this sign alone is not sufficient as the heart may continue to beat for some time. Absence of pulse – this can be palpated in the medial aspect of the hind limb in the live animal, and is lost after death. This technique is of most use in larger species, as it can be impossible to discern in small species.

Always check for these signs and do not assume an animal is dead just because it is not moving or apparently not breathing.

If death cannot be confirmed, the operator should repeat the same or an alternative procedure. If the animal is unconscious, the major blood vessels in the neck can be cut with a sharp knife so that the animal dies of blood loss.

Stunning by captive-bolt

Stunning the animal by a mushroom bolt to the head may be acceptable in delivered to the central skull bone, normally located at cross-section between the ears.

Stunning usually only renders an animal unconscious; therefore it must be immediately followed by a second method that ensures death (e.g. exsanguination, cervical dislocation, pithing) When properly performed with sufficient force, immediate depression of the central nervous system and destruction of brain tissue occurs. Loss of consciousness is rapid.

It must be properly applied to be effective and humane therefore, training and skill of operator is essential. If not performed correctly, various degrees of consciousness with accompanying pain can occur.

Captive-bolt safety

Captive-bolts are potentially hazardous. All people should stand well behind the shooter when an animal is being shot. The line of fire must be chosen to prevent accidents or injury from misfire or bone fragments. Users must strictly observe all relevant safety guidelines relating to ownership, possession and use.

When not in use, the captive-bolt and ammunition must be securely stored in a compartment that has no access to general public.

Adequate hearing protection should be worn by the shooter and others in the immediate vicinity of the shooter. Repeated exposure to firing noise can cause irreversible hearing damage. Safety glasses are required to protect the eyes from gases, metal & bone fragments and other particles.





STANDARD OPERATING PROCEDURES

OHS

DEPARTMENT OF POST-MORTEM



UQ Policy and Procedures

Topic: 2.10.03 Occupational Health and Safety

Approval authority: Senate

Last approval date: August 25, 2011

Review date: August 25, 2014

Audience: All staff, UQ Community, all students

Custodian: Director, Occupational Health and Safety, Mr Jim Carmichael, email ohs@uq.edu.au

Occupational Health and Safety – Policy

Purpose and objectives

This policy outlines the University's commitment to achieve the highest attainable level of occupational health and safety for its staff, students, visitors, contractors and volunteers throughout all areas of its activities.

Policy scope/Coverage

This policy applies to staff, students, visitors, contractors and volunteers.

Policy statement

The purpose of this policy will be met by strict attention to all aspects of occupational health and safety in:

- Provision of clear statement and delegation of occupational health and safety responsibilities;
- Provision of an adequate, responsible financial budget for the function;
- Sound workplace planning, design and operation;
- Positive and consistent example of good practice at all levels of administration and supervision;
- Training based on standard, proven work methods and written operational and maintenance procedures;
- Education, counselling and, where necessary, rehabilitation of those involved in its activities; and
- Enforcement of statutory laws of Queensland and the Commonwealth, and University safety regulations and procedures.

It is the responsibility of all University staff to ensure the implementation of safety systems appropriate to their operational responsibility and in accord with current technology.

It is the responsibility of supervisory staff at every level to ensure that safe working procedures are clearly understood and consistently observed. Supervisors must also ensure that all plant and equipment in use is in safe working order and that workplace conditions are maintained at a high standard.

All staff, students, visitors, contractors and volunteers have a duty to care for their personal welfare and the welfare of their fellows. To meet this commitment each person must follow safe working practices at all times, and take all reasonable care to prevent personal injury or injury to others and damage to plant and equipment.

Compliance

To facilitate compliance with this policy, the University Senate:

- Provides ongoing support to the Occupational Health and Safety Council;
- Established and maintains the Occupational Health and Safety Division, headed by a Director of Occupational Health and Safety at senior level with direct line responsibility and supported by appropriate specialist Occupational Health and Safety staff and administrative staff and facilities;
- Established and supports a safety committee structure throughout the University as set out in PPL 2.10.1 Health and Safety Committees – Procedures.

The University has established procedures outlining the responsibilities of specific roles for occupational health and safety compliance:

- Staff Responsibilities for Occupational Health and Safety (PPL 2.10.04);
- Work Health and Safety Co-ordinator's Role (PPL 2.10.06); and
- Faculty/Institute Occupational Health and Safety Manager Role and Function (PPL 2.10.09)

For more information visit the UQ Policy and Procedures Library

<http://ppl.app.uq.edu.au/content/2.10.03-occupational-health-and-safety>

Compiled by: Ben Knoxville – Post Mortem Technician

Authorised by Helle Bielefeldt-Ohmann – Chair of Bio – Security

Authorised by Myat Kyaw-tanner - Occupational Health & Biosafety Officer

Authorised by Rachel Allavena – Head Pathologist

Date: 01/01/2016 Reviewed 2017

Drive: G: (SOP 2016 Post-Mortem)

Standard operating procedures involving OHS

TITLE: SOP-PM007: Procedures involving Fire and emergency evacuation

Note: wardens are updated periodically as the requirement arises.

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for Fire and emergency evacuation

Purpose and Objectives

These procedures must be followed in the event of any emergency which requires partial or total evacuation of buildings within the University.

Definitions, Terms, Acronyms

FSMP - Fire Safety Management Plan

Emergency - An event, actual or imminent, which endangers or threatens to endanger life, property or the environment, and which requires a significant and coordinated response.

Procedures Scope/Coverage

These procedures apply to all University buildings with the exception of organizational units, as specified in the fire and evacuation plans, which have site specific procedures in place. Non-University owned buildings staff are to follow procedures as set out by building owner e.g. RBWH tenancies.

Procedures Statement

These Fire and Emergency Evacuation Procedures provide for:

- Fire and hazard prevention;
- Safe and orderly evacuation of people from the building in an emergency;
- Early control of the fire or emergency; and
- Speedy resumption of duties once the emergency is brought under control.

Evacuation from buildings may be necessary as the result of fire, explosion, chemical leak, structural fault, equipment failure or bomb threat. These procedures have been prepared principally for fire emergencies, but they are suitable for use in other emergencies.

Specific instructions based on these procedures should be prepared for each University building. The features of a particular building, its occupants or fire alarm system may require modification of these procedures. Enquiries in relation to these procedures should be made to the Occupational Health and Safety Unit.

In case of emergencies such as confirmed fire, gas explosions, life threats – call 000 followed by UQ Security on 3365-3333.

In case of a medical emergency - contact UQ Security 3365 3333 all hours.

Examples of the emergencies include but not limited to are, fire and medical emergencies including first aid and emergency medical transport, vehicle accidents on campus, life threats and lift faults.

If you discover a fire or emergency:

- Call extension 53333 and advise:
- GATTON Campus, Building 8106 as included during induction, type and scale of the fire or emergency.
- The name and location of the caller.
- Alert other people in the vicinity and notify the Floor Warden.

In the event of an emergency, including a fire alarm, any person in charge of a seminar or other meeting, shall instruct other staff and visitors to respond to the appropriate emergency signals.

On hearing the ALERT TONE, all occupants are to remain at their current location and wait for further instructions from the Floor Warden.

When and if the EVACUATION TONE sounds, all building occupants shall leave the building via the nearest marked fire exit and proceed to the assembly area. No one is to re-enter the building until the All Clear has been given by the Building Warden or Security.

Emergency Procedure coloured cards should be in all labs and offices. These cards contain a section on emergency evacuation.

Emergency Organisation

The roles for coordination for Emergency Evacuation Procedures are outlined below:

- The Emergency Co-ordinator (for the University site).
- A Building Warden and Deputy for each building.
- Floor or Area Wardens and Deputies for each building.

Emergency Coordinator

- The Emergency Coordinator at Gatton Campus is the Security Supervisor or nominee.
- The Manager Security will ensure that emergency coordinators are appointed for sites other than those covered by Security Section at St Lucia or by the Security Supervisor at Gatton Campus.

Responsibilities

The Emergency Coordinator is responsible for overall coordination of actions in connection with Emergency Evacuation Procedures. He/she is responsible for:

Before Fire or Emergency:

- Ensuring that personnel responsible for emergency are aware of their responsibilities.

In the case of Fire or Emergency:

- Checking the alarm has been relayed to the Fire Service.

- Ensuring that designated duties are correctly and promptly carried out.
- Acting as liaison officer with Police, Fire Service and other emergency services.
- Ensuring that all emergency service personnel are directed to the building involved in the emergency.
- Liaison with the Building Warden for the building involved in the fire or emergency.
- Advising staff and students when it is safe to re-enter the building.

Building Wardens Appointment

A Building Warden and deputies should be appointed for each building. The number of wardens is determined by the fire safety officer using the fire safety assessment. If the building is occupied by only one organisational unit, the head of that unit should make this appointment. Where more than one organisational unit occupies a building, the appointment should be made by the appropriate Executive Dean or relevant Senior Executive.

The Building Warden and deputies should be physically fit and responsible members of staff with personalities that will give confidence in an emergency. Their normal work location should preferably be on or close to the ground floor and their duties should not require frequent absences from the building. The Building Warden should ensure that either the Building Warden or deputy is available at all times during normal working hours.

Responsibilities

The Building Warden, during emergency situations, will be in control of the occupants of the whole building until the arrival of the Fire Service Senior Officer. It is the Building Warden's responsibility to:

Before Fire or Emergency:

- Assist in training of emergency personnel under their command in consultation with the Fire Safety Officer.
- Direct occupants of the building to assemble in the designated area when required to evacuate the building in an emergency. This will facilitate checking that all occupants are safe and enable the speedy return to the building when the "all clear" is given.
- Ensure that on each floor, or in each area, a current list of Floor and Area Wardens (and telephone numbers) is displayed on the emergency procedures card, together with an emergency floor plan. The emergency floor plan shows all rooms, exits, assembly area to be used in case of fire or emergency, fire alarms, extinguishers, fire hose reels and special emergency equipment.
- Ensure that all staff in the building are given instruction in relation to:
 - Evacuation procedures;
 - Means of escape from the building and location of assembly areas;
 - The location and operation of fire alarms; and
 - The location and operation of fire extinguishers or other emergency equipment required in the building.

In the case of Fire or Emergency:

- Respond immediately to an alarm; determine the nature of the emergency.

- Initiate Emergency Evacuation Procedures for the building.
- Direct the actions of Floor and Area Wardens within the building.
- Check that all occupants have proceeded to the designated assembly area.
- In consultation with the Fire Service and the Emergency Coordinator, advise occupants when it is safe to return.

Floor and Area Wardens Appointment

Floor Wardens and their deputies should be appointed for each floor of the building. In buildings where features of the building indicate the necessity, floors should be divided into areas for each of which an Area Warden should be appointed.

The general selection criteria for Floor and Area Wardens and their deputies are the same as for the Building Wardens and their deputies and the appointments should be made by the Head of Organisational Unit or Executive Dean or relevant Senior Executive.

Responsibilities

Before Fire or Emergency Floor and Area Wardens should:

- Familiarise themselves with the floor or area for which they have responsibility; strong-rooms, rooms leading off blind passages, doors leading to dead ends, toilets or changing rooms;
- Identify people who will require special assistance during evacuation;
- Identify means of egress and alternative means of escape; and
- Identify location of push button alarm points and firefighting or emergency equipment.
- Ensure that staff are conversant with these Emergency Evacuation Procedures and the correct use of fire fighting and emergency equipment.
- Carry out monthly inspections of their area and remove hazards or advise the Head of Organisational Unit or Director of Occupational Health and Safety (as appropriate) of the hazards.
- Ensure that firefighting and emergency equipment is in its correct position (as shown on the displayed floor plans) and ready for use.
- Ensure that passageways and exits are kept clear at all times.
- Ensure that notices required by these Procedures are kept current and prominently displayed.

Additional wardens are to be appointed where required to assist the Floor or Area Warden. This should be on the ratio of at least one to every 40 people employed on the floor, or in the area, and take account of the need to have at least one Warden from each organisational unit on the floor.

In the case of Fire or Emergency:

Until the arrival of the Fire Service Senior Officer, the Floor or Area Warden, under the direction of the Building Warden, will control all evacuation and the use of firefighting equipment on their floor or in their area. The Floor or Area Warden should:

- Check the source, type and severity of the emergency.
- Order the evacuation of the floor if necessary.

- Advise the Building Warden of the emergency on the floor and the proposed action to be taken.
- Ensure that all occupants of the floor are aware that evacuation of the floor is necessary, and direct the occupants to the nearest accessible exit or escape stairs, through which they should proceed to the designated assembly area.
- Ensure that evacuation from the floor is orderly.

DO NOT USE THE LIFTS.

- Ensure that necessary assistance is given to disabled and other persons in need of special care.
- Check fire doors to ensure that they are closed.
- Provided it is safe to do so, make a thorough search of the whole floor or area to ensure that no persons remain.
- Advise the Building Wardens when evacuation is completed.
- Assist the Building Warden in checking that all building occupants have arrived at the assembly area.

It should be emphasised that the primary role of wardens is not to combat fire and emergencies, but to ensure, as far as practicable, the safety of occupants and their orderly evacuation from emergencies.

Assistance for Persons with a Disability

Evacuation procedures for buildings should include procedures for caring for persons with a disability.

For the purposes of evacuation procedures, people should be considered as disabled if they are unable to evacuate the building without assistance, or if their time to exit the building would be much greater than the average building occupant.

Wardens should be aware of persons with a disability within their area. In the case of permanent occupants of the building who are disabled, wardens should make a record of their name and their location to ensure that assistance can be rendered should evacuation be necessary. It will be necessary to periodically update this information.

Arrangements should be made for a person to be assigned to assist each disabled person in an emergency. This person should be someone working in close proximity to the disabled person and should assist the disabled person to a predetermined "safe" area. The Fire Service will determine the method of evacuating disabled persons from safe areas.

Where disabled students or visitors may be present, procedures should be implemented so that nominated staff can assist such persons during evacuation, disabled persons should be assisted to "safe" areas which should be adjacent to fire isolation stairs. Where possible, procedures should provide for alternative "safe" areas. If no "safe" area is available, it may be necessary to move disabled people into fire-isolated stairways. This should not be done until other people have been evacuated so as not to impede a smooth evacuation.

The Floor Wardens should inform the Building Warden of the number of disabled persons, the location and the nature and extent of their disability at the completion of the general evacuation of the floor. The Building Warden should advise the Fire Service, on its arrival, of the situation on each

floor. The Fire Service will determine what further action should be taken for the safety of disabled persons and whether lifts can safely be used for their evacuation. It is important that disabled persons participate in the regular fire drills conducted for the building.

Evacuations of Students and Visitors

When an evacuation alarm is sounded, **any person in charge of a class, seminar or other meeting** should instruct students and visitors to proceed quietly and quickly to the nearest exit - which should be nominated. When all students and visitors have left the room, the person in charge should leave and close the door to prevent spread of fire and smoke.

Lecturers should ensure that at the commencement of semester, or before commencing seminars or other meetings, the lecturer or convenor should advise those present of the exits to use in the event of a fire or other emergency and the nominated assembly area.

Action by Individual Occupants

All occupants should make themselves familiar with the Emergency Evacuation Procedures for their building, the location of fire exits and the operation of firefighting and emergency equipment.

Emergency Evacuation Information

Fire and emergency plans are displayed throughout buildings in prominent area normally at all exits, lift lobbies and foyers. The placement of such floor plans is managed by the Fire Safety Officer. The evacuation plans show:

- Fire exits and escape routes
- Manual alarm points
- Fire extinguishers and other emergency equipment
- Emergency shutdown
- Emergency spill equipment
- Emergency showers
- Evacuation assembly area
- Safety equipment
- Evacuation procedures

EMERGENCY CONTACTS for GATTON CAMPUS

1. UQ SECURITY on **3365-3333** or **ext. 53333**. Advise you are calling from GATTON campus, Building number (**8106**) and the floor/room number if relevant.
2. CAMPUS HEALTH SERVICE on 5460 1396 or ext. 50396 between the hours of 8.30 am to 4.15 pm; Location: Ground floor N W Briton Annexe, (Admin Annexe) (Bldg. No 8101a).
3. STUDENT SUPPORT SERVICE on 5460 -1046 or ext. 50046; Location: Morrison Hall.

In the case of an emergency or if you want to talk to someone immediately, please contact: Lifeline - available 24 hours a day on 13 11 14.

TITLE: SOP-PM008: Procedures involving Mandatory Training

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for staff training

Training and education of personnel

Upon commencement, all staff and RHD students must undergo mandatory OH&S training with School OH&S co-ordinator followed by site-specific induction with post-mortem attendant. On-line OH&S modules are found on <https://learn.uq.edu.au/>.

Personnel training and education are essential components of an effective infection control program.

All personnel, including temporary lay personnel, kennel staff, students and volunteers, should receive education and training about injury prevention and infection control during their initial orientation and periodically thereafter. Additional training should be provided as recommendations change or if problems with infection control practices are identified.

Training should emphasize awareness of the hazards associated with individual work duties, and prevention of zoonotic disease exposure. All records of staff participation in training are kept.

All personnel should receive education and training about annual fire training, OH&S inductions, injury prevention and infection control.

The University of Queensland highly values its staff and knows they are central to all of its endeavours. The University believes that assisting the development of each individual ultimately enhances its performance and status as a quality employer.

All University staff have a right and responsibility to continuously improve the capabilities required for their current roles, and to consider development required for possible future roles at higher levels or in another organisational units.

While staff members should proactively develop their capabilities, staff development is a shared responsibility. Heads of organisational units and supervisors have key responsibilities in supporting staff to identify their skills and development needs aligned to UQ's strategic priorities through regular feedback and in encouraging them to take up development opportunities.

The University encourages staff to develop their capabilities through a broad range of activities. Visit [planning your Development](#) to help you choose development activities.

The University Staff Development Committee encourages a culture of continuous learning and performance improvement and strongly encourages staff to fully participate in their own development by taking advantage of the courses offered in the University Staff Development Program. The Committee wishes all staff the very best in discovering their potential and achieving their career goals.

TITLE: SOP-PM009: Procedures involving PPE**SCOPE:** All Authorized Personnel**RESPONSIBILITY:** All Authorized Personnel**PURPOSE:** To Outline the Proper Procedures for PPE

General

Personal protective equipment (PPE) is an important routine infection control tool. PPE use is designed to reduce the risk of contamination of personal clothing, reduce exposure of skin and mucous membranes of veterinary personnel to pathogens, and reduce transmission of pathogens between patients by veterinary personnel. Adequate level of PPE must be worn in all clinical situations, including any contact with animals and their environment. These recommendations must always be tempered by professional judgment, while still bearing in mind the basic principles of infectious disease control, as every situation is unique in terms of the specific clinic, animal, personnel, procedures and suspected infectious disease.

Personal protective outerwear is used to protect veterinary personnel and to reduce the risk of pathogen transmission by clothing to patients, owners, veterinary personnel and the public. Protective outerwear should be worn whenever there may be contact with an animal or when working in the clinical environment (including cleaning).

Personal practices to be considered by clinic personnel and students:

- Long hair should be tied back.
- Closed-toe shoes which are easily cleaned should be worn.
- Fingernails should be short to make washing and scrubbing effective.
- Special care should be taken in the case of personal risk factors such as possible immunosuppression in persons with conditions which may affect the immune system, or taking immunosuppressive drugs (cortisone, cyclosporine etc.); wounds, cuts & scratches; chronic or acute intercurrent medical conditions (e.g. colds and influenza, asthma, eczema, respiratory disease, diabetes etc.), pregnancy.
- Avoid touching the face with hands to minimise likelihood of germ transfer.
- Protective clothing such as scrubs tops, scrubs, gowns, overalls or lab coats should be worn. Protective clothing must be changed if grossly contaminated or if an animal with a known infectious disease is contacted.
- Fresh protective clothing must be worn every day. Used protective clothing should be put in a suitable bag separate from clean items until it is laundered. Students to provide their own protective clothing which should be kept separately from other clothing and equipment after wearing (e.g. in a garbage bag) and laundered in hot water after each use.
- Gloves and disposable respirators of P2 rating should be worn if warranted in the judgment of the student or staff member, e.g. if there is likely to be contact with body fluids or transmission of a zoonotic disease by aerosol (e.g. Bordet Ella).
- Protective eye wear should be worn if there is a possibility of contamination of the eyes with organic material or a pathogen (e.g. during orthopaedic or dental procedures).
- Special protective equipment should be used if there is a higher risk, e.g. heavy gloves for handling bats. However under any circumstances, post-mortem on bats or any species or horses which were suspected to have been infected with Hendra Virus will not be performed.
- No human food is to be kept in the clinical areas except for designated kitchen or dining areas. No eating or drinking in clinic areas except for designated areas.

Compiled by: Ben Knoxville – Post Mortem Technician

Authorised by Helle Bielefeldt-Ohmann – Chair of Bio – Security

Authorised by Myat Kyaw-tanner - Occupational Health & Biosafety Officer

Authorised by Rachel Allavena – Head Pathologist

Date: 01/01/2016 Reviewed 2017

Drive: G: (SOP 2016 Post-Mortem)

Lab Coats

Lab coats are meant to protect clothing from contamination, but generally they are not fluid resistant, so they should not be used in situations where splashing or soaking with potentially infectious liquids is anticipated. These garments should be changed promptly whenever they become visibly soiled or contaminated with body fluids, and at the end of each day.

Lab coats worn in the labs should not be worn outside of the work environment. Lab coats worn when handling patients with potentially infectious diseases should be laundered after each use, because it is almost impossible to remove, store/hang and reuse a contaminated lab coat without contaminating hands, clothing or the environment.

Non-Sterile Gowns

Gowns provide more coverage for barrier protection than lab coats, and are typically used for handling animals with suspected or confirmed infectious diseases, that are housed in isolation. Permeable gowns can be used for general care of patients in isolation. Impermeable (i.e. waterproof) gowns should be used to provide greater protection when splashes or large quantities of body fluids are present or anticipated. Disposable gowns should not be reused, and reusable fabric gowns should be laundered after each use, because hanging/storing and reusing contaminated gowns inevitably leads to contamination of hands, clothing or the environment. Gloves should be worn whenever gowns are worn. Gowns (and gloves) should be removed and placed in the trash or laundry bin before leaving the animal's environment, and hands should be washed immediately afterwards.

Personnel should learn to remove gowns properly, in such a way as to avoid contaminating themselves and the environment. All gowns should be used only once, then discarded or laundered.

Gloves

Gloves reduce the risk of pathogen transmission by providing barrier protection; they should be worn when contact with blood, body fluids, secretions, excretions and mucous membranes.

Gloves should also be worn when cleaning cages and environmental surfaces, as well as when doing laundry if gross contamination of items is present. Avoid contact between skin and the outer glove surface.

Gloved hands should not be used to touch surfaces that will be touched by people with non-gloved hands. Care should be taken to avoid contamination of personal item such as telephones, pens and pagers. Hands should be washed or an alcohol-based hand sanitizer should be used immediately after glove removal.

It is a common misconception that using disposable gloves negates the need for hand hygiene. Gloves do not provide complete protection against hand contamination therefore, hand hygiene

immediately after removing gloves is essential. Disposable gloves should not be washed and reused. Gloves are NOT a substitute for proper hand hygiene.

Change gloves and perform hand hygiene when:

- *Moving from contaminated areas to clean areas on the same animal*
- *Moving from dirty to clean procedures on the same animal*
- *After contact with large amounts of blood and/or body fluids*
- *Between individual animals*

Latex gloves are commonly used, but if latex allergies are a concern, acceptable alternatives include nitrile or vinyl gloves. Latex gloves will decompose and lose some of their integrity when exposed to many chemicals. The choice of glove material depends on their integrity when exposed to many chemicals. If exposure to chemicals such as disinfectants is expected (e.g. when cleaning and disinfecting cages), disposable nitrile gloves or heavier, reusable rubber gloves (e.g. common dishwashing gloves) can be used. Reusable gloves must also be disinfected at the end of each task.

Face protection

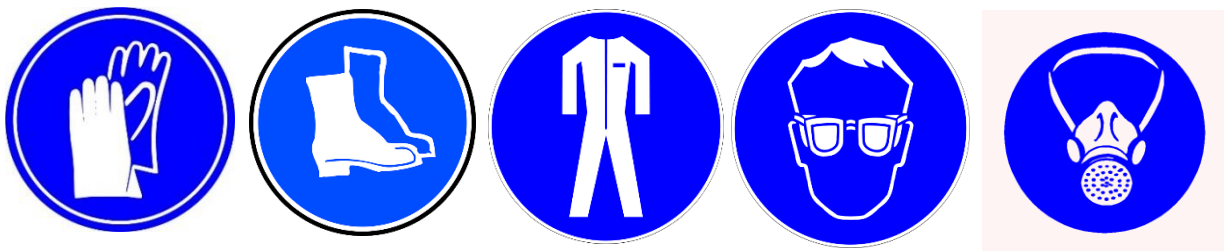
Face protection prevents exposure of the mucous membranes of the eyes, nose and mouth to infectious materials. Face protection typically includes eye protection and a disposable P2 mask of N95 rating, which should be used whenever exposure to splashes or sprays is likely to occur.

Respiratory Protection

Respiratory protection is designed to protect the respiratory tract from zoonotic infectious diseases transmitted through the air. The need for this type of protection is limited in veterinary medicine because there are few relevant airborne or aerosol zoonotic pathogens in companion animals, in most regions. The disposable P2 mask of N95 rating respirator is a mask that is inexpensive, readily available, and easy to use and provides adequate respiratory protection in most situations. However, people need to be fit-tested to ensure proper placement and fitting of N95 masks. Special N95 masks are required for people with beards. Surgical masks are not a replacement for N95 masks.

Footwear

Safety toe boots/gumboots must be worn at all times to reduce the risk of injury from dropped equipment (e.g. scalpels, needles) and to protect the feet from contact with potentially infectious substances (e.g. discharges and other body fluids).



TITLE: SOP-PM010: Procedures involving Sharps

Also refer to UQ risk assessment database ID

<https://www.risk.admin.uq.edu.au/Task/Default.aspx?TaskID=58278#Task:58278>

SCOPE: All Authorized Personnel

RESPONSIBILITY: Research and All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for Sharps

Injuries from needles and other sharp implements are common in veterinary medicine but are largely preventable. Although there is not the level of risk of blood borne pathogen exposure in veterinary practice as there is in human medicine, serious outcomes can result following needle stick or other sharps injuries, including significant trauma, secondary infection and drug reaction (i.e. toxic, allergic, idiosyncratic). All sharp incidents and injuries must be reported immediately to the nearest first-aid officer and then recorded on-line

https://injury.admin.uq.edu.au/forms/default_content.asp As per UQ requirement.

Proper sharps handling practices are a practical yet effective way of reducing workplace injuries in veterinary clinics. Use appropriate barriers (e.g. closed toed shoes) and safe work practices when using sharp instruments and devices (e.g. needles, scalpels, etc.), after procedures and when cleaning used instruments.

- Never remove needle caps by mouth.
- Do not bend or manipulate needles in any way.
- Do not pass uncapped needles to another person.
- Ensure proper animal restraint to reduce inadvertent needle stick injuries from animal movement.
- Do not recap needles by hand. If recapping is required, use the “one-handed scoop” technique (see below), forceps or a needle cap holder.
- Ensure that approved point-of-use sharps disposal containers are located everywhere needles are handled. These containers are puncture-resistant, leak-proof, and prevent removal (both accidental and intentional) of discarded sharps.
- Always dispose of sharps immediately in an approved sharps disposal container.
- Never dispose of needles or other sharps into anything other than an approved sharps container, even if they are capped or otherwise contained. This reduces the risk of accidental injury to veterinary personnel, patients, clients and non-veterinary personnel (e.g. waste disposal personnel).

The most important precaution for preventing needle-stick injuries is to avoid recapping needles. Recapping needles causes more injuries than it prevents. When absolutely necessary to recap needles as part of a medical procedure or protocol use a mechanical device such as forceps or haemostats to replace the cap on the needle.

Alternatively, the needle can be recapped using the “one-handed scoop” technique. Place the cap on a flat horizontal surface. Holding the syringe with the attached needle, or the needle hub alone (when unattached), scoop up the cap with the needle by sliding the needle tip inside, without touching the cap with one’s other hand. Once the point of the needle is covered, tighten the cap by pushing it against an object, or by pulling the base of the needle cap onto the hub of the needle with the same hand holding the syringe.

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TITLE: SOP-PM011: Procedures involving bites & scratches

Also refer to UQ risk assessment database ID

<https://www.risk.admin.uq.edu.au/Task/Default.aspx?TaskID=58847#Task:58847> for animal bites and scratches

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for bites & scratches

Bites and scratches

Bites and scratches are an inherent risk in veterinary medicine and a common cause of occupational injury and illness. In general, veterinary personnel should be able to recognize behaviour in animals and situations that are associated with an increased tendency for an animal to bite. Professional judgment must be exercised to guide bite prevention practices. Personnel should take all necessary precautions to prevent animal-related injuries in the clinic. These may include physical restraint or chemical restraint (sedation or anesthesia) of an animal.

Injuries must be reported immediately to the nearest first-aid officer and then recorded on-line https://injury.admin.uq.edu.au/forms/default_content.asp As per UQ requirement.

Such equipment should also be as easy to clean as possible. Experienced veterinary personnel rather than owners should restrain animals for procedures whenever possible. Personnel must always be aware of changes in their patients' behaviour which may precede attempts to bite. Veterinary personnel should not let client perceptions or attitudes prevent them from using appropriate bite-prevention measures (e.g. muzzling).

If anyone is bitten or scratched by an animal:

- Immediately wash the wound thoroughly with plenty of soap and water.
- Report the incident to the local public health unit.
- Seek medical attention as soon as possible for any bite that is over a prosthetic device or an implant, is in the genital area, or a bite on the wrist or the ankle, causing a large amount of tissue damage (e.g. a deep tear or tissue "flap")

Medical attention should also be sought for any bite (particularly from a cat) sustained by a person with any of the following conditions:

- Compromised immune system (e.g. HIV/AIDS, transplant or chemotherapy patients)
- Chronic swelling (edema) in the area that was bitten
- If the person has had his or her spleen removed
- Liver disease, diabetes, lupus or other chronic systemic disease

If the bitten area becomes increasingly painful or swollen, if the wound develops a discharge, or if the person develops a fever or swollen lymph nodes, consult a physician as soon as possible.

A physician will decide (in some cases in consultation with public health personnel) if antimicrobial therapy, tetanus vaccination, rabies vaccination, or any additional treatment (e.g. lavage,

debridement, sutures) are necessary. Most bite wounds are not sutured in order to promote drainage and reduce the risk of infection.

Emergency contact information (i.e. physician, public health department) should be clearly posted in the clinic.

All bites or scratches should be reported and the injury documented and should not be considered “part of the job” and summarily dismissed.

Even seemingly small, innocuous injuries can develop severe complications. Regular review of injuries is useful to identify trends in behaviour that may be associated with injuries and to develop protocols to reduce the risk of injuries. Documentation is also important for employees in the event that serious health problems subsequently develop.

TITLE: SOP-PM012: Procedures involving electrical safety

Refer to <https://ppl.app.uq.edu.au/content/2.20.05-electrical-safety>

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for electrical safety

Purpose and Objectives

As an employer, The University of Queensland has a legal obligation under the Electrical Safety Act 2002, to ensure the electrical safety of each of its staff at work. The University also has an obligation to ensure the electrical safety of others is not affected by the way they conduct their business.

Basically, University of Queensland mandates that all electrical work be arranged through P&F and their external contractors. Under any circumstances, none of the staff, students/visitors or volunteers to engage in electrical work on campus as part of their duties unless trained and appointed officially to do so.

Definitions, Terms, Acronyms

AS/NZS - Australian/New Zealand Standards

ESMP - Electrical Safety Management Plan

Policy Scope/Coverage

This policy applies to all staff, students, contractors and visitors of the University who may come in contact with electricity and electrical equipment.

Policy Statement

Managers and staff have a responsibility to eliminate hazards and complete all electrical work in a safe manner. The University will provide systems including policy, procedures and training to manage electrical risks. Every safety incident or accident will be reported and investigated in accordance with University policies and procedures.

Responsibilities

Responsibilities for electrical safety on UQ sites include but are not limited to the following (refer also to detailed position descriptions):

<i>Person/Party</i>	<i>Responsibility</i>
Vice-Chancellor	Primary executive responsibility for Occupational Health and Safety.
Associate Director OH&S	Ensuring University wide compliance with Electrical Safety Management Plan (ESMP); and training and awareness.

Divisional Managers	<p>Establishing and maintaining systems to facilitate compliance with the ESMP.</p> <p>Ensuring that all staff and contractors working for them and their sections are aware of and comply with the ESMP.</p> <p>Ensuring that workers are licensed and competent to carry out their allocated duties;</p> <p>Ensuring that each staff member has the correct tools, equipment and material to complete the work in a safe and efficient manner;</p> <p>ensuring that risks are assessed, control measures identified and on-site risk assessments completed and control measures implemented when necessary;</p> <p>Ensuring that work is completed in accordance with instructions; and ensuring that work complies with the appropriate standards, has been properly tested and the site is safe.</p>
Qualified Technical Person	<p>Implementing systems to facilitate compliance with the ESMP;</p> <p>Technical supervision of electrical workers;</p> <p>Maintaining a register of all Faculty/Division/Institute electrical workers and their licences;</p> <p>Training of staff and contractors - induction and ongoing;</p> <p>Investigating and reporting of electrical incidents;</p> <p>Providing advisory services in relation to the requirements of the Electrical Safety Act 2002 and relevant standards;</p> <p>Reporting of Electrical Incidents to the OH&S unit;</p> <p>Certification of electrical installations and equipment;</p> <p>Acting as the primary point of contact for electrical safety issues for the Faculty/Division/Institute</p> <p>Assisting Faculty/Division/Institute to develop systems to comply with the requirements of the ESMP;</p> <p>Assisting the Faculty/Division/Institute to develop risk assessments; and providing Electrical Safety Certificates to the P&F Electrical Engineer.</p>

Senior Electrical Engineer (P&F) Providing technical consultancy to the University.

Electrical Workers complying with the ESMP and Faculty/Division/Institute procedures;

Bringing to the attention of the project officer any potential electrical hazard; and working only under the control of a supervisor.

University staff, students and visitors

The safe use of electricity the safety of those under their supervision and care; and ensuring compliance with the ESMP.

6. Standards for Electrical Installation, Repair, Maintenance and Construction work

All classes of electrical work described below must be carried out in strict accordance with requirements of relevant governing legislation in force at the time. Pre-eminent requirements are set out within the Electrical Safety Act 2002 and the Electrical Safety Regulation 2002, supported by advisory information such as Codes of Practice and Australian Standards (e.g. AS/NZS 3000:2000).

a. Working near Exposed Live Parts

While the following information provides information on electrical safety, under any circumstances, none of the School of Veterinary Science staff, students/visitors or volunteers to engage in electrical work on campus as part of their duties unless trained and appointed officially to do so.

Legislative requirements mandate the proximity to which persons having varying degrees of competency can approach and work around exposed live electrical parts. These requirements are found in the Electrical Safety Regulation 2002. The Code of Practice, Working near Live Exposed Parts gives some guidance on how to meet these obligations.

6.2 Electrical Work

The conduct of electrical work is prohibited unless a person is licensed or certified as competent under legislation to perform that work. Live electrical work carries a higher degree of risk and is prohibited by law except under strict controls. The Code of Practice, Electrical Work can assist in providing direction to the electrical worker.

6.3 Electrical Work Licences

All electrical work at voltages in excess of extra low voltage (less than 50Volts AC (RMS) or greater than 120Volts Ripple free DC) must only be carried out by and supervised by electrical workers, licensed and competent to do so.

Electrical work is defined by the Electrical Safety Act 2002 as the manufacture, construction, installation, testing, maintenance, repair, alteration, or replacement of electrical equipment or parts.

All electrical work on fixed wiring and installations must be arranged through P&F.

Staff and postgraduate students who are not holders of relevant electrical licences must not undertake work or be exposed to situations where contact with exposed live parts is possible at voltages in excess of extra low voltage.

6.4 Periodic Testing of Electrical Equipment and Residual Current Devices

Regulatory requirements mandate that items of specified electrical equipment in use within a workplace must be tested at varying intervals dependent upon the class of work environment in which they are used. It is the responsibility of all persons within the University in control of such specified electrical equipment and all portable Residual Current Devices to ensure that all tests are carried out at the prescribed intervals to the prescribed standard and this is done only by P&F as per their documented schedule.

If using outside contractors, then only service providers endorsed by P&F can be engaged to perform this activity and P&F must be contacted prior to engagement of any electrical contractors.

All fixed Residual Current Devices installed as protection for staff must be tested and inspected at the intervals prescribed within AS/NZS 3760:2003.

P&F will engage competent service providers and co-ordinate the performance of these tests.

7. Additional Information

General guidelines for the University of Queensland have been developed and publicly posted in combination with the Electrical Safety Management Plan. Implementation of specific procedures and guidelines by Faculties/Divisions/Institutes is to be a planned and ongoing process through local committees with advice from the OH&S Unit.

Procedures involving Chemicals

TITLE: SOP-PM013: Procedures involving Klotz

Refer to <http://www.uq.edu.au/ohs/chemical-waste-disposal>;
<http://www.uq.edu.au/ohs/chemical-spills>;
<http://www.uq.edu.au/ohs/chemwatch-sds-35890> for Material Safety Data sheet;
<http://www.uq.edu.au/ohs/hazardous-substances>
<http://www.uq.edu.au/ohs/purchase-of-dangerous-goods-hazardous-chemicals>

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for KLOTZ Solution

KLOTZ Solution Purposes of procedure:

To prepare a modified-Klotz solution; for mild fixation/preservation of gross tissue. This is particularly useful when preservation of colour and pliability/tone is desired for anatomical class purposes.

Definitions

- Formaldehyde CH_2O , single-carbon gaseous-aldehyde, systematically named methanal.
- Formalin Commercial name for 37-40% aqueous-dissolved formaldehyde.

Note: Formaldehyde/Formalin is classified as a **HAZARDOUS** material. MSDS must be read prior to undertaking this procedure and appropriate handling and Personal Protective Equipment implemented.

Procedure: STOCK Klotz Solution

Reagents:	Tap water (warm)	1000 mL
	Stock Formalin (37% Formaldehyde)	250 mL
	Glycerol	160 mL
	Sodium sulphate	320 g
	Potassium sulphate	4.7 g
	Sodium chloride	5.7 g
	Sodium hydrogen carbonate	11.4 g

Appropriate Personal Protective Equipment must be worn while making this solution, (Lab coat Eye wear and chemical respirator if outside the fume hood and formalin vapours can be smelt)

1. Add the solid powders to a labelled 2.5L screw top container,
2. Add the warm tap water and glycerol, screw on lid of container and invert to dissolve contents.
3. Remove lid and pour in stock formalin. Replace lid and store until required.

Procedure: Working Klotz Solution (20L)

Appropriate Personal Protective Equipment must be worn while making this solution, (Lab coat Eye wear and chemical respirator if outside the fume hood and formalin vapours can be smelt)

1. Pour contents of 1 bottle of Stock Klotz solution into an appropriate 20L container,
2. Make up-to 20L with tap water,
3. Solution is ready for use.
4. *Double the amounts if you wish to make 40L*

TITLE: SOP-PM014: Procedures involving Buffered Formalin

Refer to <http://www.uq.edu.au/ohs/chemical-waste-disposal>;
<http://www.uq.edu.au/ohs/chemical-spills>;
<http://www.uq.edu.au/ohs/chemwatch-sds-35890> for Material Safety Data sheet;
<http://www.uq.edu.au/ohs/hazardous-substances>
<http://www.uq.edu.au/ohs/purchase-of-dangerous-goods-hazardous-chemicals>

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for Neutral Buffered Formalin (10%) Neutral Buffered Formaldehyde (3.7-4%)

Neutral Buffered Formalin (10%) Neutral Buffered Formaldehyde (3.7-4%)

Purposes of procedure:

To prepare a solution of 10% Neutral Buffered Formalin (3.7-4% Formaldehyde) for use in fixation of histological samples prior to processing.

Definitions

- Formaldehyde CH_2O , single-carbon gaseous-aldehyde, systematically named methanal.
- Formalin Commercial name for 37-40% aqueous-dissolved formaldehyde.

The final product of this procedure is commonly referred to as 10% Formalin, which is a 1/10 buffered solution of commercially available aqueous formaldehyde (37-40%), resulting in 3.7-4% formaldehyde concentration.

Note: Formaldehyde/Formalin is classified as a **HAZARDOUS** material. MSDS must be read prior to undertaking this procedure and appropriate handling and Personal Protective Equipment implemented.

1. Procedure: Sock Neutral Buffered Solution, 5L (to buffer 50L of 10%-Formalin)

Reagents: disodium hydrogen phosphate¹
Sodium hydrogen phosphate²
1% bromophenol blue, pH indicator

¹Note: Also known as disodium hydrogen orthophosphate, sodium hydrogen phosphate or sodium phosphate dibasic.

²Note: Also known as monosodium phosphate or monobasic sodium phosphate.

1. Identify the hydrate form of the disodium hydrogen phosphate available.
Use the following table to measure the correct mass,

$\text{Na}_2\text{HPO}_4 \cdot \text{Anhydrous}$ (M=142 gmol^{-1})	325 g
$\text{Na}_2\text{HPO}_4 \cdot 2\text{H}_2\text{O}$ (M=178 gmol^{-1})	407 g
$\text{Na}_2\text{HPO}_4 \cdot 7\text{H}_2\text{O}$ (M=268.1 gmol^{-1})	614 g
$\text{Na}_2\text{HPO}_4 \cdot 12\text{H}_2\text{O}$ (M=358.2 gmol^{-1})	820 g

2. Transfer to a 5L storage container.
3. Identify the hydrate form of the *sodium hydrogen phosphate* available.
4. Using the following table to measure the correct mass,

$\text{NaH}_2\text{PO}_4 \cdot \text{Anhydrous}$ (M=120 gmol^{-1})	174 g
$\text{NaH}_2\text{PO}_4 \cdot \text{H}_2\text{O}$ (M=138 gmol^{-1})	200 g
$\text{NaH}_2\text{PO}_4 \cdot 2\text{H}_2\text{O}$ (M=156 gmol^{-1})	226g

5. Transfer to the same 5L storage container with the disodium hydrogen phosphate,
6. Fill with 2.5L of warm/hot tap water, screw on cap and invert to dissolve buffer solids,
7. Fill to 5L mark with tap water and add 2.0mL of 1% bromophenol blue pH indicator.
8. Label and store until required.

Procedure: Neutral Buffered Formalin (10%), 50L

Reagents: Stock Neutral Buffered Solution (as prepared above): 5L
Stock Formalin (37-40% Formaldehyde): 5L
Tap water

1. Appropriate Personal Protective Equipment must be worn while making this solution, (Lab coat Eye wear and chemical respirator)
2. Place appropriate 50L, labelled storage container in final desired location,
3. Fill to 30L volume with tap water using an extension hose,
4. To this container, add 5 Litres of Stock Formalin,
5. Pour contents of Stock Neutral Buffered Solution into 50L storage container
6. Add 10 more Litres to a final volume of 50Litres with tap water using an extension hose
7. Seal top with screw cap.

Neutral Buffered Formalin solution is ready for use with an expiry of 6 months.

110L Tank



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TITLE: SOP-PM015: Procedures involving Chemical Spills

Refer to <http://www.uq.edu.au/ohs/chemical-spills>

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for chemical spill response

Note: Condensed version with points from are available in the lab for easy reference in case of emergency spill clean-up.

Despite the best efforts of researchers to practice safe science in the laboratory, accidents resulting in the release of chemicals will occur. For this reason, it is essential that all laboratory personnel have a spill response plan that includes appropriate procedures and materials to adequately contain and clean up a chemical spill.

All users of the facilities must be aware of the location of the spill kit which would be included as part of the site-specific induction with the post-mortem attendant soon upon commencement.

The following procedures should be used as a guide to help laboratory personnel design an effective spill control plan for their laboratory. These procedures tell you how to prepare your own spill kit and give you step-by-step instructions for spill clean-up. They also outline when and who to call for assistance.

Spill Response Procedures Major Spill

In the event of a spill which:

- Involves the release of a type or quantity of a chemical that poses an immediate risk to health; or
- Involves an uncontrolled fire or explosion:

- 1) Evacuate the building by activating the nearest fire alarm.
- 2) Call 53333 and give details of the accident including location, types of hazardous materials involved, and whether there is personal injury.
- 3) If the accident involves personal injury or chemical contamination, follow the above steps as appropriate and at the same time:
- 4) Move the victim from the immediate area of fire, explosion, or spill (if this can be done without further injury to the victim or you).
- 5) Locate nearest emergency eyewash or safety shower. Remove any contaminated clothing from the victim and flush all areas of the body contacted by chemicals with copious amounts of water for 15minutes.
- 6) Administer first aid as appropriate and seek medical attention.

Spill Response Procedure Minor Spill

In the event of a spill involving the release of a type or quantity of a chemical which does not pose an immediate risk to health and does not involve chemical contamination to the body:

- 1) Notify lab personnel and neighbours of the accident.
- 2) Isolate the area. Close lab doors and evacuate the immediate area if necessary.
- 3) Remove ignition sources and unplug nearby electrical equipment.
- 4) Establish exhaust ventilation. Vent vapours to outside of building only (open windows and turn on fume hoods).
- 5) Locate spill kit.

- 6) Choose appropriate PPE (goggles, face shield, impervious gloves, lab coat, apron, etc.)
- 7) Confine and contain spill.
- 8) Acid and base spills should be neutralized prior to clean up. Cover with appropriate absorbent material.
- 9) Sweep solid material into a plastic dust pan and place in a sealed container.
- 10) Wet mop spill area. Be sure to decontaminate broom, dustpan, etc.
- 11) Put all contaminated items (gloves, clothing, etc.) into a sealed container or plastic bag.
- 12) Return spill kit to storage location and arrange for used contents to be replaced.
- 13) Inform the Post-Mortem Technician or Duty pathologist.

Chemical spill kit contents

Every laboratory that uses chemicals must have access to a spill control kit. The keys to an effective spill kit are location and content. Spill kits should be strategically located around work areas in fixed locations so they will be easily accessible. Although most spill kit contents are common items which may be found throughout the lab, they must be consolidated for emergency use.

Spill kits can be purchased through most supply vendors that sell chemicals or safety supplies.

The following is a list of recommended items that should be contained in a chemical spill kit. However, it is important that spill kits be tailored to meet the specific spill control needs of each laboratory. Spill kits should be checked periodically, and restored after each use.

Chemical Splashes to skin & eyes (Including corrosive or toxic substances)

- FLOOD THE EYES WITH WATER FROM THE EMERGENCY EYE WASH
- Continue with running water for 20 minutes then seek medical attention from the University Health Service or ambulance if required.

For chemical splashes to the skin –

- FLOOD THE SKIN WITH WATER FROM THE EMERGENCY SHOWER
- Continue with running water for 20 minutes then seek medical attention from the University Health Service or ambulance

Delegate people to phone UQ Security 336 53333

- Arrange easily located point to meet emergency team
- Delegate people to stay by the phone and meet emergency team
- Confirm site and meeting place with UQ Security
- Note: UQ Security will call an ambulance if required

Delegate people to obtain the MSDS

- Follow the first aid instructions on MSDS
- Give a hard copy of MSDS to the University Health Service or ambulance

Complete an incident report using the On-Line Injury and Incident Report system

TITLE: SOP-PM016: Procedures involving Gas

Refer to http://www.uq.edu.au/ohs/OHYG/OHYG-Safe_handling_of_gas_cylinders.pdf

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper use and handling of oxygen/gases & cylinders

General

Cylinders contain pressurized substances which pose the risk of releasing their contents with considerable force. The sudden release or escape of the contents can make the cylinders potentially powerful projectiles, therefore having the potential to cause considerable personal injury and physical property damage. Risks include explosion, burns, and physical injuries from manual handling of cylinders.

- Ensure staff receives instruction on appropriate cylinder use and handling.
- Ensure cylinder contents are clearly identified. Unidentified cylinders should be kept aside and returned to the supplier.
- Store and use cylinders only in an upright position. Cylinders should be chained against a solid wall or kept in a designated, signposted storage locker.
- Do not roll cylinders on the ground as it risks damaging or opening the valve.
- The hand trolley must be used to move the large cylinders. Ensure they are firmly secured during transport.
- Transported cylinders must be well secured to avoid hitting one another, whether in a vehicle or trolley.
- When securing cylinders during storage, transport or use, do not secure using the valve or regulator. Secure to the body of the cylinder.
- Do not allow cylinders to strike each other or hit hard surfaces violently.
- Cylinders should be stored away from heat or ignition sources.
- Always turn cylinders off at the valve when not in use.
- Cylinder valves should be turned on gradually.
- Point the valve opening away from yourself or other people.
- Check cylinder and attachments for leaks regularly.
- Have cylinders and attachments serviced yearly.

- Prior to attachment, ensure that the threads on the cylinder and the connection match.
- Check for leaks once connected and pressurized.
- Ensure the valve is shut and pressure is released before disconnection.
- Ensure regulators are used and fitted to all cylinders.
- Store cylinders in cool, dry, well ventilated areas.
- Avoid storage of cylinders in thoroughfare. Return to storage room when not in use.
- Keep full and empty cylinders separate.
- Keep oil and grease away from cylinders.
- Never use force when opening or closing the valve

Use of anaesthetic gases:

There is evidence that chronic exposure to inhalation of anaesthetic agents may be associated with psychomotor, hepatic and renal dysfunction. They should only be used in well-ventilated areas.

Use of carbon monoxide:

Carbon monoxide is extremely hazardous to humans as it is highly toxic and difficult to detect. Exposure from inhalation of carbon monoxide fumes can cause fatal poisoning. Non-fatal poisoning may result in permanent nervous system damage.

If carbon monoxide fumes are inhaled, remove patient from contaminated area. Lay patient down and keep warm and rested. Early signs of toxicoses are headache, dizziness and weakness. If patient is not breathing, apply artificial respiration and perform cardiopulmonary resuscitation (CPR) if necessary. Transport patient to a hospital or doctor without delay.

Use of carbon dioxide:

Carbon dioxide should be used in a well-ventilated place. Carbon dioxide is non-flammable, non-explosive and poses minimal risk to personnel when used with properly designed equipment. However, inhalation of significant concentrations of CO₂ can cause narcosis and/or asphyxia.

If CO₂ is inhaled, remove patient from the contaminated area to allow them to breathe in fresh air. Early signs of exposure are headache and shortness of breath. If patient is not breathing, make sure airway is clear and apply artificial resuscitation. Keep warm. Oxygen may be given but only under the supervision of a trained person.

Although prolonged exposure to low levels of CO₂ (up to 1.5 % in inhaled air) are well tolerated, chronic health effects can result.

For further information refer to the Material Safety Data Sheet (MSDS), available from the supplier.



STANDARD OPERATING PROCEDURES

OPERATIONS

DEPARTMENT OF POST-MORTEM

Standard operating procedures for Post Mortem operations.

TITLE: SOP-PM017: Necropsy set up & brake down.

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

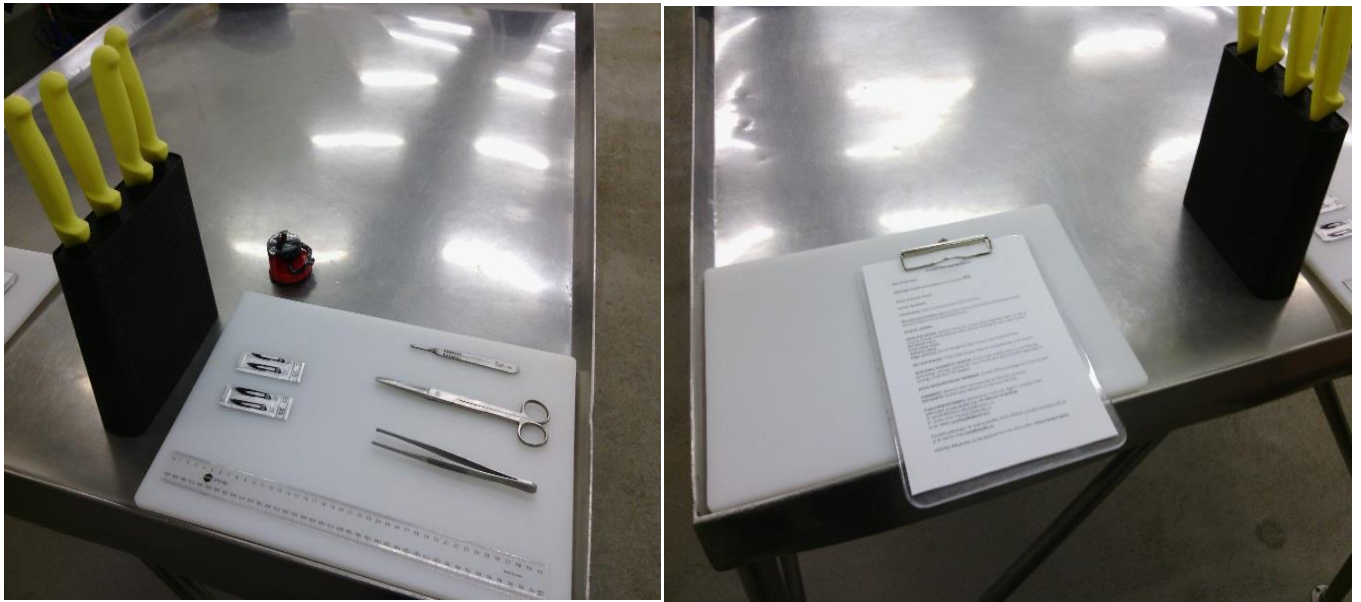
PURPOSE: To Outline the Proper Procedures for Necropsy Set up

Proceeding each day of Necropsy in the post mortem room 126 all the room must be set up as pictured below.

Each table will have the following items:

- 4 X Boning knives
- 1X Knife Block
- 1 X small red suction Knife Sharpener
- 2 X Cutting Boards
- 1 X Scalpel Handle & 2 X Blades
- 1 X large Scissors
- 1 X Ruler
- 1X Clip Board with copy of Student PM Report.
- 1X Bucket of Water with 50mls of top suds detergent.
- 2X cleaning brushes

All 120L yellow bins must have 120L yellow biohazard liners. All floor area must be wet down prior to commencement of necropsy.





After necropsy work is complete students & pathologists must wash up tools and clean tables. Tools not pictured are to be placed in rack above sink, clip board to be placed above sink.

All large tools to be cleaned and place back from location taken from.

The following must be left on tables as pictured below to allow for drying and equipment to be accounted for.

- 4 X Boning knives & 1X Knife Block
- 1 X small red suction Knife Sharpener
- 2 X Cutting Boards
- Bucket with two brushes

Then the technician will then jet washed in hot water and sanitized, all tables, knife blocks to be separated, knives, boards, sharpeners bucket & brushes.



All yellow bins in Post mortem must have rubbish removed each day with yellow liner tied off and placed in bin store 125. All yellow bins must be washed out and left upside down to dry.



All Drains must be emptied, jet washed as pictured. All surfaces must be cleaned and free from blood & contaminants all tools are to be returned once cleaned. The vice and bandsaw are to be cleaned if used.

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Working in the post mortem room

- Prior to commencement in post mortem room, all staff and RHD students must undergo School of Veterinary Science/UQ OH&S induction with School Safety co-ordinator. This will be followed by site-specific induction with post-mortem attendant for PM room procedures and requirements.
- After hours work in the post mortem room is not permitted without the prior permission of the post-mortem technician & and the pathologist in charge.
- Full protective clothing must be worn as there is a potential for animals to be infected with bio-hazardous agents or chemical carcinogens and includes double gloves, disposable gown, shoe covers, mask (or respirator if required), and eye protection. However if a deceased animal is suspected to be infected with a micro-organism of risk group III or risk group IV, necropsy work will not proceed.
- Entry to the post mortem room should either be via the students' or staff changing rooms. All personnel entering the post mortem room must be properly attired in protective clothing and pass through a foot bath. The post mortem room is a potentially infected area.
- Clothing used on the post mortem room floor should not be worn elsewhere in the Veterinary School or Campus. Clinicians using the post mortem room floor area will be expected to change their clinical protective clothing and footwear to dedicated pathology wear.
- Students must not enter the post mortem room, until two first-aid trained staff are available and on-site, and the duty pathologist is confident all adequate control measures to prevent or minimise any hazard or risk of infection are in place.
- The hoist can only be used by authorised personnel who have received instruction and signed the hoist training log.
- Gloves should be disposed frequently during periods of work; do not touch clean areas with Blood/body fluid covered gloves, perforated or split gloves should be changed and new gloves put on after washing hands.
- Use a cutting board for dissection of tissues and organs.
- Used needles, should be disposed of in a sharps container; scalpel blades should be mounted and removed using the blade safe device, not by hand.
- Used instruments should be placed in detergent (Cleaning/disinfection in post mortem room). Any area used during necropsy must be sanitized with an approved cleaner and the surface decontaminated after each use.
- All staff including research workers and students working in the post mortem room are requested to contribute to the disposal of cadavers and preliminary clean-up at the conclusion of the work period. Users who fail to observe reasonable standards of safety, cleanliness and clean-up in the facility will be denied future access.
- Wash down waterproof clothing, dispose of gloves in clinical waste bins, thoroughly wash hands and leave the post mortem room through the water baths. Remove boots and leave on dirty side of barrier. Place dirty clothing in laundry. Animal necropsy is performed in areas specifically designated for that purpose.

Laundry

Although soiled linens are a potential source of microorganisms, with appropriate hygienic handling, storage and processing of clean and soiled linens, the risk of disease transmission from these items can be reduced to an almost negligible level.

Overalls and lab coats used in Post-Mortem can be a means of transporting pathogens from one area to another within the building, and to areas outside the campus. As a result, clothing should always be placed in laundry bags provided to be sent to a commercial laundry facility that is equipped to handle laundry from medical/veterinary facilities.

This helps to prevent transmission of pathogens to family members, family pets and the general population. Personnel should change into clinic clothes at the beginning of necropsy and back into street clothes at the end of necropsy work.

Laundry services are available to accommodate the need to change clothing daily, or more frequently if required.



TITLE: SOP-PM018: Procedures involving the transport, storage, use and disposal of cadavers from UQ Equine hospital, UQ small animal hospital, UQ Vets, UQ large animals unit, UQ Dairy, Clinical Studies Centre, & QASP.

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To outline the proper procedures for the transport, storage, use and disposal of cadavers from UQ Equine hospital, UQ small animal hospital, UQ Vets, UQ large animals unit, UQ Dairy, Clinical Studies Centre, & QASP.

The University of Queensland provides assurance that all transportation, handling & storage is in accordance with all applicable laws, policies and guidelines.

Standard procedures for the transportation of cadavers or specimens must ensure optimum bio-security arrangements are in place.

Definitions:

Cadavers/Submissions – All animals held and associated with the UQ Equine hospital, UQ small animal hospital, UQ Vets, UQ large animals unit, UQ Dairy, Clinical Studies Centre, & QASP for Post-Mortem, whether Paid, Teaching or disposal.

Guide lines:

- All Cadavers/Submissions must have a necropsy request form also RISQ form if required, from referring vet or clinics including internal clinics such as Equine hospital, small animal hospital, UQ Vets & large animals unit, clinical studies, & QASP. Forms must be completed in detail and legible.
- Necropsy request forms for all Cadavers/Submissions must clearly state the disposal method for the remains (i.e. private cremation or deep burial). If this is not communicated in the necropsy form (i.e. left blank), the default disposal method of deep burial will be assumed.
- All Cadavers/Submissions from clinics must be clearly labelled with clinical sticker matching the necropsy Request form. A clinical sticker can be applied to form but details missing must be added. Owners details, microchip, tag & patient numbers, cremation etc.
- A copy of the request must be supplied to the Post mortem Technician for admin records, via the letter box on office door 116 or Red folder outside cold room 126.
- Cadavers awaiting bloods to be taken for testing must be left hung up in cold room 127 to allow blood to flow to neck.
- At no time by any person/staff member, will a Post Mortem or examination be commenced or the removal of parts from an animal, until the Cadavers/Submissions are cleared of

zoonotic hazards i.e. Hendra Virus, which must be sighted & confirmed in writing as negative before commencement via regulated laboratory testing.

- All requests for sampling parts of Cadavers for either teaching or research purposes must be accompanied with the appropriate animal ethics approval. The animal ethics approval number must be submitted to the Post Mortem technician at the time of request.
- Parts for teaching will only be held for a week, upon which they will be disposed if they have not been collected.
- All samples to be taken from Cadavers for either teaching or research purposes must be labelled & traceable by a post-mortem/pathology reference number.
- Cadavers/Submissions can be held upon request, overnight for pick up by owner the body and will at no time be post mortem or leave the facility with any open surgical wounds.
- Long term storage of parts and Cadavers/Submissions by request will be subject to an agreed time of storage and use.

All submitted Cadavers must be an entire animal, with all parts intact, so that a complete necropsy can be performed by pathologists. Exceptional circumstances will be considered, but this needs to be communicated directly with the pathologists on duty before the submission of an incomplete Cadaver.

Donated Horses from the public for teaching PM's

Owners can donate their horses to the University for Necropsy, but the pathology service retains the right to refuse an animal submission. It is requested that owners to have the horse Hendra tested before it arrives on the Gatton campus, and the animal must remain clinically well and afebrile until euthanasia.

If the horse is on a property close by we can possibly arrange for the Post Mortem technician to pick it up but if it is further away (e.g. more than a 20 minute drive) we prefer that the client delivers the horse. It is usually easier to float a live horse.

We do not have the facilities to euthanize a horse at the PM room, Therefore this needs to be done in consultation, with the equine clinician to arrange for a clinician to euthanize the horse at the VMC clinic and then transport the body across to the PM room (cold-room 8106, 127).



TITLE: SOP-PM018: Procedures for receiving cadavers into Post mortem

SCOPE: All Authorized Personnel

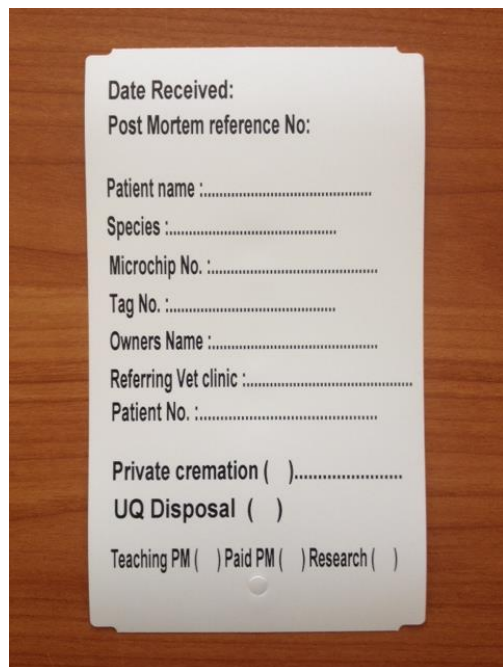
RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for receiving cadavers

All Cadavers/Submissions must have a necropsy request form also RISQ form if required, from referring vet or clinics including internal clinics such as Equine hospital, small animal hospital, UQ Vets & large animals unit, clinical studies, & QASP.

A copy of the request must be supplied to the Post mortem Technician for admin records.

When cadaver is received and stored in post mortem, a toe tag must be completed and attached to animal or bag with matching information to the paperwork provided. Toe tags are attached via zip ties.



All tags are to be kept for the post mortem department admin records, and must be taken off the once the cadaver is disposed. The tags must be washed and free from hazardous chemicals or bio-martials.

Wash tags with a general soap or rinse with water, do not use harsh chemical or dissolvent such as acetone, xylene or alcohol.

TITLE: SOP-PM019: Procedures involving the transport, handling & storage of animal cadavers.

Also refer to UQ Risk assessment database ID

<https://www.risk.admin.uq.edu.au/Task/Default.aspx?TaskID=36439#Task:36439>

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for the transport, handling & storage of animal cadavers.

The University of Queensland provides assurance that all transportation, handling & storage is in accordance with all applicable laws, policies and guidelines.

Standard procedures for the transportation of cadavers or specimens must ensure optimum bio-security arrangements are in place.

Transportation cadavers can only be done by the Post-Mortem technician or a designated University employee who has completed the Induction for Staff.

All specimens must be fully labelled for transport – including a description of the specimen and identifier that must be able to be linked to the cadaver number.

The appropriate documentation of all animals and specimens must be recorded before the animal is disposed or sent to private cremation.

Students handling cadaveric specimens should observe appropriate personal hygiene measures such as hand washing and use of PPE when necessary; students and staff should receive an induction program (incorporating infection prevention); a higher level of infection prevention and control should be in place for handling of non-embalmed specimens.

All cadavers and specimens should be stored in a secure environment and used for teaching and/or anatomical examinations in a secured setting with restricted staff / student access. All personnel with access rights to such settings within UQ must complete an induction program and be aware of all conditions of access to the setting and requirements for personal conduct & safety within the Post-Mortem examination areas.

Any public open-day sessions to UQ, or public displays should be fully supervised by authorised UQ staff of the University.

When necessary, prohibition of all unauthorised photography, videos and use of mobile phones by students within the post-mortem settings where examinations involving cadavers are performed, to ensure there is no improper use of cadavers, body parts or anatomical examinations or images thereof, and so that client confidentiality is maintained.

TITLE: SOP-PM020: Procedures involving disposal of cadavers

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for the disposal of cadavers

2. The animal waste bin is for the disposal of cadavers and tissues only. The bin is potentially hazardous and new users or people not conversant with the system should seek advice from the post mortem room technician or Duty Pathologist. Personnel or students must not, under any circumstances, stand on top of the bins or enter bins for retrieval of tissues/organs. Minimise dripping of blood onto the floor of the post mortem room and work spaces by bringing the bins close to necropsy tables and gently placing cadavers and organs inside.
3. There are certain occasions where a deceased animal cannot be cut-up into pieces at the risk of aerosol exposure. Under such circumstances, whole animal must be disposed of via deep-burial through UQ waste collection. Animals previously treated with cytotoxic drugs will be double-bagged prior to collection by private cremation companies, or single bagged prior to disposal in an animal waste bin to minimise blood and tissue contamination.
4. Students, guests and untrained staff are not allowed to operate the hoist mechanism to move large cadavers.
5. All cadavers must be clearly labelled for disposal, private cremation or post mortem examination by the submitting clinician. Labelling cadavers “not for post mortem examination” would also be helpful.
6. Horses must have horseshoes removed prior to post mortem examination. Removal of horseshoes prior to post-mortem examination is the responsibility of VMC Equine staff.
7. Needles and sharps must be removed from cadavers prior to submission.
8. The following must NOT be placed in the green animal waste bin:
 - Plastic bags or containers, clinical waste, catheters, indwelling needles and drains, metal (horseshoes, etc.), fabric, paper or other non-animal tissue. The exception being animals treated with cytotoxic drugs being bagged prior to disposal.
 - Transgenic animals.
 - Any radioactive waste.

If in doubt about any procedures connected with cadaver/organ disposal, please ask.

Compiled by: Ben Knoxville – Post Mortem Technician

Authorised by Helle Bielefeldt-Ohmann – Chair of Bio – Security

Authorised by Myat Kyaw-tanner - Occupational Health & Biosafety Officer

Authorised by Rachel Allavena – Head Pathologist

Date: 01/01/2016 Reviewed 2017

Drive: G: (SOP 2016 Post-Mortem)

Disposal of carcasses euthanized by barbiturate

The carcasses of animals euthanized by barbiturate overdose or other chemical agents may contain potentially harmful residues. They should be disposed in a manner that will prevent them from being consumed by humans or predatory/scavenger animal species. Toxicoses, sedation and death have occurred in pets and wildlife that ingest portions of carcasses euthanized by some chemical agents.

Guide: Approximate Weight of Animals for Disposal.

Horses:

- Light riding horses usually range in height from 14 to 16 hands (56 to 64 inches, 142 to 163 cm) and can weigh from 380 to 550 kilograms.
- Larger riding horses usually start at about 15.2 hands (62 inches, 157 cm) and often are as tall as 17 hands (68 inches, 173 cm), weighing from 500 to 600 kilograms.
- Heavy or draft horses are usually at least 16 hands (64 inches, 163 cm) high and can be as tall as 18 hands (72 inches, 183 cm) high. They can weigh from about 700 to 1,000 kilograms.

Cattle:

- Smaller kinds, such as Dexter and Jersey adults, range between 270 to 500 kg.
- Large Continental breeds, such as freesias, Charolaise, Marchigiana, Belgian Blue and Chianina, adults range up to 600 to 1,200 kg.
- British-breeds, such as Hereford, Angus, and Shorthorn, mature between 454 to 907 kg, occasionally higher, particularly with Angus and Hereford.
- Bulls will be a bit larger than cows of the same breed by a few hundred kilograms. Chianina bulls can weigh up to 1,500 kg; British bulls, such as Angus and Hereford, can weigh as little as 907 kg to as much as 1,361 kg.

Sheep:

- Depending on breed, Ewes typically weigh between 45 and 100 kilograms, and rams between 45 and 160 kilograms.

Pigs:

- An adult can weigh between 50 to 350 kg depending on breed.

K9:

- An adult can weigh between 5 to 85 kg depending on breed.

Based on the known weights above, bins will be filled to weight capacity allowed to avoid potential ergonomics issues.

- Large bins of 660L and small wheelie bins of 240L capacities. As noted by UQ supplier SITA, large bins will allow up to 110 kg and small wheelie bins will allow up to 40 kg before potential ergonomics concerns arise.
- Bins will not be filled up beyond those capacities.
- They will be wheeled through the footbath.



40kg Max for 240L bin.
110kg Max For 660L bin.



TITLE: SOP-PM021: Procedures involving Animal Handling

Also refer to UQ risk assessment database ID

<https://www.risk.admin.uq.edu.au/Task/Default.aspx?TaskID=36431#Task:36431>

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for the handling of animals

General Animal handling and restraint

Many animal species are capable of inflicting serious injury to persons handling them. Appropriate handling and restraint techniques should be used; all staff working in this area must have already been qualified in animal handling this is your first line of defence. Further training will be provided as the need arises to avoid injury to both animals and humans.

The second line of defence in reducing the risk of hazards posed by working with animals is administrative controls, generally consisting of safe work practices.

Employees whose responsibilities will require them to work with and around animals must be trained by someone who has experience with the type of animals being handled prior to being allowed to perform such duties alone.

In cases where an animal's behaviour is being studied or where unusual behaviours might arise due to conditions of confinement, the employee should be informed in advance of what to expect and how to protect against injury or illness.

Restrict access to animals and animal holding areas to authorized personnel only. Avoid working alone with large animals.

Be alert when handling animals. Maintain a dominant role with an animal, but work with them in a calm and gentle manner. Avoid making loud noises. Keep groups of herding animals together for better control. Be extremely alert when separating a mother from its offspring.

Be aware of and avoid circumstances and environments that might make an animal more aggressive or more skittish, and take extra precautions when these conditions exist. For example, animals may become agitated on an extremely windy day or when undergoing veterinary treatment; or they may be naturally more active at dawn or dusk.

Leave an unobstructed exit path when working in close quarters with large animals that may become aggressive. Use appropriate restraining and handling devices. If an animal needs to be tapped so it will move, use a sorting stick to maintain a safe distance.

Avoid dramatic changes in the animal's surroundings or routines. Do not position yourself in an animal's blind spot. To avoid becoming entangled in the line, handlers should never tie leads to their bodies.

When working in the field, personnel should work in teams of at least two people especially when involved in the physical or chemical restraint and handling of animals. After stunning larger animals (e.g. deer, horses), always approach the animal from the dorsal (or spinal) side to prevent injury from the involuntary paddling of legs.

Manual Handling Injuries

There is no longer a prescribed weight limit for loads to be lifted by men or women. This is because the weight of a load to be moved is only one of the factors that may contribute to injury. Other factors that increase the risk of strains, sprains or other musculoskeletal disorders are:

- The number of times the load is lifted or moved
- The person's posture when lifting
- The distance the load is to be moved
- The design of the work area and layout of the workplace, e.g. whether the load is to be moved in a restricted space or on an uneven surface.
- Movements, forces and vibration relating to the task
- The duration of the task
- The systems of work used, and
- The features of the load, e.g. whether it is compact or bulky, and the ease of getting a grip on it.

Work health and safety legislation provides that hazardous manual tasks have to be identified, and the risks of lifting or moving the load must be managed. That is, the risks of strains, sprains or other injuries must be eliminated, or if that is not reasonably practicable, the risks must be minimised. In order to do this, the person conducting the business or undertaking must have regard to the weight of the load as well as all the other relevant factors that may contribute to an injury. All pre-existing musculoskeletal injuries be declared to the senior professional or academic staff member in charge prior to any procedure commencing.

Manual handling is an integral part of the Post mortem department so care is required to minimise the risk of musculoskeletal injury. Ergonomic assessment of routine work procedures should be undertaken to reduce risks associated with working with cadavers or live animals.

Some animal carcasses can be heavy (e.g. feral pigs can be > 100 kg), so care must be taken when lifting/dragging.

Protective clothing, footwear and gloves may reduce the chances of injury when handling wild animals.



TITLE: SOP-PM022: Procedures involving the transport of live Animals.

Also refer to UQ risk assessment database ID

<https://www.risk.admin.uq.edu.au/Task/Default.aspx?TaskID=36431#Task:36431>

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for the transport of live Animals.

The University of Queensland provides assurance that all transportation is handled in accordance with all applicable laws, policies and guidelines.

The UQ animal ethics serves as the primary source of information relating to the approval of transport enclosures, means of transport, receipt and shipment of animals within UQ and abroad. Exceptions to these guidelines are allowed when it is considered in the best interest of the animal(s).

General

All methods of transporting UQ animals must provide for the health and welfare of the animals. Transportation of animals shall be done in a direct and timely manner, avoiding public areas where possible and areas primarily used by UQ employees and students.

Animals shall not be transported with any other animal, substance or device that may be expected to be injurious to their health or welfare.

Enclosures used to transport live animals **MUST** not be stacked in a manner that may reasonably be expected to result in their falling. During transport, enclosures should not be carried in any way that may cause physical trauma or stress to the animal(s).

Temperature extremes are to be avoided when animals are transported and special precautions or postponements are required when temperatures are too cold or extremely hot and may jeopardize the welfare of the animals.

Transportation of animals must comply with applicable Queensland laws and regulations.

It is essential that enclosures be used in the transportation of animals. They must be escape proof, properly labelled, provide adequate ventilation, can be sanitized or disposed of and prevent the spread of pathogenic microorganisms, chemicals or radioactive materials where indicated. The enclosures should be designed in such a way as to be non-stressful to the animals.

Cargo areas of vehicles used in the transportation of animals shall be cleaned and decontaminated as necessary to prevent contamination of future animal deliveries.

Transporting live farm animals, dogs and cats etc. on or off the UQ campus must be pre-approved by the Supervisors of the department and UQ animal ethics.

It is UQ policy that animals are mentally alert and fully mobile during Transportation. If animals need to be sedated or anesthetized during transportation, they will require continuous monitoring during transportation in UQ vehicles.

UQ may develop specific procedures for the transportation, receipt and shipment of animals if they have requirements that differ from these guidelines. The responsibility for development and approval of these specific UQ procedures lies with the UQ's School of Veterinary Science, following recommendations of UQ's animal ethics and endorsed by UQ Senate for new PPL.

Warning labels are required on enclosures used to transport live or dead animals that have been exposed to chemical or biological hazards.

Movement of animals within an UQ building

Occupants of the building should be protected from allergens of animal origin, microorganisms, chemicals, radioactive materials and escaped animals.

Movement of animals inside the animal facility should be accomplished with the use of a transport cage where appropriate. The movements of larger animals must be planned and controlled as relevant to the animal. While animals are being held temporarily, all the controls must be in place which includes closing of gates and retraining devices (if applicable) applied. All users must be aware of these guidelines and included as part of the site-specific induction by the post-mortem technician. This is to be completed upon staff/RHD commencement or when the new practices are put in place.

When moving animals between buildings on campus there must be appropriate control example grey-hounds need a collar and lead, containment of animals during transferred between buildings is essential.

When necessary, enclosed vehicle transportation should be used for the movement of animals that are wild, stressed or are a biological risk via screened enclosures or cages.

TITLE: SOP-PM023: Procedures involving live animals within 8106 yards & crush for Post mortem use.

Also refer to UQ risk assessment database IDs

<https://www.risk.admin.uq.edu.au/Task/Default.aspx?TaskID=56360#Task:56360> and
<https://www.risk.admin.uq.edu.au/Task/Default.aspx?TaskID=40057#Task:40057>

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for animals within 8106 yards & crush for Post mortem.

A lot of the injuries to cattle handlers happen in the yards. Good design and maintenance can help prevent those injuries. If you are not used to the yards, check the layout and how things work before taking cattle in. Remove stray posts, timbers, containers and large stones from pens and the race, to prevent tripping and minimise distractions.

General practical guide to yards:

Know your Animal

Every mob has its docile, flighty, nervous and aggressive animals. Even those that are usually docile can behave unpredictably at different times of the year or if they are under stress. Different breeds have different temperaments. Cattle with sharp horns are dangerous; dehorning is recommended. Get to know the individual cattle you're dealing with.

Keep calm

Approach cattle quietly and make sure they are aware of your presence. Cattle can be dangerous when alarmed or over-excited. Give cattle time to settle down after you have moved them into the yards or unloaded them from a truck (30 minutes or more depending on the distance they have travelled). Cattle are often quieter to handle if they are familiar with the yards and facilities. Cattle, especially weaners, fed in the yards and quietly moved through the yards a number of times will be easier to handle in the future.

Assess the type of stock and their behaviour

Cattle are more unpredictable during cold, windy weather. Age, breed, sex, horn status, temperament, training and weight can affect behaviour. An isolated animal (often due to ill health) can be stressed and these animals may become aggressive.

Bulls are more aggressive during mating season and extremely dangerous when fighting.
Remember:

- Never trust any bull particularly the 'lonely bull' reared or kept in isolation.
- Never work bulls on your own.
- Never trust a quiet bull.
- Never turn your back on a bull.
- The older the bull, the more dangerous it can become.
- Avoid working Bulls with other bulls around.

Cows with calves

Any cow, but particularly a beef cow, is often aggressive just after calving and is not to be trusted. Remember:

- The younger the calf, the more dangerous the mother.
- Avoid having a dog with you when doing any work involving cows with calves.
- Avoid situations where you come between a cow and her newborn calf without some form of barrier to protect yourself. This is especially important when weighing and applying identification to a newborn calf.
- A bellowing calf will agitate the mother; hold the calf's mouth shut to keep it quiet

Typical yard maintenance to reduce hazards include:

- Weekly inspection of yards and crush for working order, broken off bolts, wire and any other item that could cause injury to staff or animals.
- Fasten down or replace loose or rotten covers on catwalks or rails.
- Keep gates well-oiled and free-swinging or sliding.
- Keep gates and latching mechanisms well-adjusted and aligned.
- Maintain the head bail and crush and keep well-oiled.
- Have repairs done immediately.

General Use of a veterinary cattle crush:

Ensure that the front and side gates of the crush, and the head bail, are securely closed and that the sides of the crush are fully retracted (i.e. the "squeeze" is fully open). In crushes which have a hinged security gate in front of the head bail the head bail may be opened but make sure that the security gate is securely closed.

The rear gates (the entry points of cattle into the crush) must be open. Calmly move cattle into the forcing yard, then guide one into the crush and close the sliding gate behind it; in some crushes you will be able to secure a second animal in a space behind the first.

Encourage the front animal to put its head through the head bail. Close the head bail quickly - allow room for some head movement but make sure that the bail is not so far open as to allow the animal to pull its head back (it may be necessary to have an assistant do this job).

When the animal is secured, the front security gate can be opened to allow work on the animal's head. If greater restraint is necessary, move the side and rear gates to reduce the space around the animal. With the animal's head secured in the head bail you can open the side gates to access parts of the animal's body.

As you work with the animal, be careful to avoid levers and handles protruding from the crush. Some cattle will react adversely to confinement - be careful to not get your body trapped between the animal and the crush. If an animal goes down in the crush open the side and rear gates to their

widest positions, close the front security gate, and open the head bail; allow the animal to regain its feet.

When the procedures are finished, close the side access gates, move the side and rear gates back to their starting positions, close the front security gate, and open the head bail. When the animal is calm, open the front gate and allow it to leave the crush (there is no need to open the security gate as this is attached to the front sliding gate and will move with that gate as it is opened).

The animal should move quickly forwards, but be aware that some cattle will jump out of the crush and may tum back towards the operator.

PRECAUTIONS:

- Wear sturdy footwear
- Cattle should be handled quietly before, during and after the procedure
- Understand the flight zone of the animal Cattle should not be overcrowded in yards
- Be aware that cattle may attempt to tum in the race leading to the crush, and may back away from the head stall.
- Cattle which respond aggressively to yarding or restraint in a crush should not be used for teaching.
- Wash hands and exposed body parts thoroughly with soap and water after handling animals
- Minimum number of two operators required
- Competence in handling cattle or any large animal.



Standard operating procedures involving post-mortem tools & equipment

TITLE: SOP-PM024: Procedures involving Bandsaw

Also refer to UQ Risk Assessment database ID

<https://www.risk.admin.uq.edu.au/Task/Default.aspx?TaskID=26170#Task:26170>

<https://www.risk.admin.uq.edu.au/Task/Default.aspx?TaskID=57170#Task:57170> for tools

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for Bandsaw use

Training requirement

There is no requirement for training by a manufacturer/supplier. Competency training by following a very comprehensive manufacturer's instruction included in the booklet meets the training guideline.

Pre-operational Safety

The isolating switch should be in the OFF position when adjusting, repairing and maintaining the bandsaw. The bandsaw must be isolated from the main electricity supply. Guides should be in good condition and correctly adjusted.

All doors shall be closed and other safety guards in place prior to the machine being started or operated. The blade should be sharp, undamaged and set correctly. Select and install a bandsaw blade of the proper pitch for the type and size of material to be cut. The blade type should be suited to the material to be cut and should be tensioned correctly and tracking properly.

The bandsaw and work area should be clean and free of off-cuts and other obstacles. Operators must ensure they have had instruction and training in the use of the bandsaw. Make sure all other persons keep outside the safety zone at all times.

Wear PPE to protect the eyes such as safety spectacles.

There is no emergency brake came with the unit, which would not have enabled the unit to be stopped immediately and will take 3-4 sec for the motor to slow down. The unit will stop in 11sec and this will also take place if one of the doors containing the blade is to open. The above meet the Australian Standard and approved by manufacturer/supplier's safety guidelines.

Operational Procedures

Be sure that the blade is not in contact with the work piece when the motor is started. The motor shall be started and you should allow the saw to come up to full speed before bringing the saw blade into contact with the work piece. A wider blade is recommended for straight cutting because it will follow the cutting line with less deviation than a narrow blade. Wide blades will stand greater pressure than narrow blades and can therefore be used with heavier feeds.

The horizontal bandsaw machine is used primarily for straight-line sawing.

Mount the work piece in the vice. Make sure the work piece is secured and will not loosen during cutting. Check the alignment of the blade guides for vertical positioning and adjust if necessary. The guides are adjustable and should be adjusted so that they are just slightly further apart than the width of the material to be cut. This will give maximum support to the saw band and help assure a straight cut.

Position the saw frame so that the bandsaw blade is 5mm above the Work piece. The power feed weight should be placed at its lightest feed setting. Then set the desired speed on the horizontal band sawing machine. Start the machine and let the bandsaw blade cut into the work piece about 5mm.

After the cut has been established, readjust the feed weight to exert the desired amount of pressure on the work piece. Feed of horizontal bandsaw machines is controlled by adjusting the pressure applied by the saw blade against the material being cut, as with hacksawing machines.

The feed should be very light when starting a cut. After the cut is started, increase the feed. Wider material requires a heavier feed than narrow material. The machine will not stop itself when it cuts completely through the work piece.

Keep hands positioned well away from the blade. Report unusual noises to the supervisor - the guides may need adjusting or the blade may be about to break. Switch off the bandsaw and stand clear if the blade breaks. Do not attempt to remove the work piece from the table.

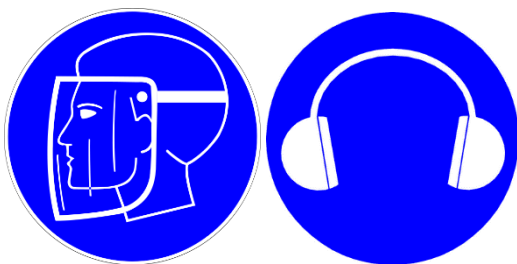
Report any faults or damage to the Supervisor.

Regular Servicing Requirement

For heavy use, such as the butchers' use, the servicing and maintenance is required 6 monthly. However for SVS' relatively low frequency use, servicing by Procut Australia Pty. Ltd., every 18 months is recommended. This will be mainly for the belt adjustment, replacement of bearings (if required) and for other visual inspections.

Daily Maintenance

When removing or installing handle blades carefully. A large springy blade can be dangerous if the operator does not exercise caution. It is recommended that you wear leather gloves when handling blades. Daily maintenance on a bandsaw will usually include checking condition of the blade. Check blade tension and tracking. Check for wear, damage or lubricant leakage of the blade support bearings. Check for excessive wear of the carbide blade guides (if fitted).



TITLE: SOP-PM025: Procedures involving knives

Also refer to UQ Risk Assessment database ID

<https://www.risk.admin.uq.edu.au/Task/Default.aspx?TaskID=57170#Task:57170> for tools

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for Knives

Knife handling

Knives are important tools in the veterinary industry. However, they are also one of the most dangerous utensils if they are not handled and used correctly and safely.

The most important thing to remember is that a sharp knife is a safe knife. Blunt knives require more grip and more force to do the job and therefore can result in serious strains and sprains to workers and can cause lasting injuries.

Workers with sharp knives do not have to push the knife and therefore get less tired and sore over the course of the day. Likewise, an operator using a blunt knife that needs to be forced through the meat is more likely to accidentally stab themselves or those working around them.

Potential impact of the risk:

The number of injuries involving knives is a major concern in the meat processing industry. The most common type of injuries are lacerations. These often require medical attention and may need suturing or skin grafting.

Injuries include:

- cuts to the non- knife hand or arm (most common)
- cuts to the hand holding the knife which occur when the hand slips off the handle
- cuts which occur with a reverse grip and pulling back towards the body
- cuts to another person, inadvertently, where people are too close together
- when working sprains or strains (e.g. from the extra effort required to use knives that are not enough sharp)

Supervisor Responsibilities:

Supervisors have responsibilities in implementing and monitoring all procedures that apply to the work performed by the employees in their area. This includes:

- Instructing workers in safe and healthy work practices
- Providing information on particular hazards in work tasks
- Monitoring staff in how they apply safe work practices
- Participating in changes to procedures where there are problems
- Ensuring appropriate PPE is used and maintained correctly
- Ensuring appropriate hazard information signs and other OH&S information is displayed
- Ensuring any staff who receives a knife injury receives first aid treatment
- Reporting the incident to the correct authority.

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In summary, supervisors should provide relevant and practical information, training and supervision to all employees in their area.

Preventing the risk:

Common-sense and concentration will help avoid knife accidents. Knife accidents are most likely to occur when workers are tired and not concentrating on the job they are doing.

It is very easy to cut yourself when you become distracted from your job or careless in your approach to work. Complacency is a common cause of knife accidents. Workers become so accustomed to handling knives they quickly forget how dangerous they are.

Make sure staff receives adequate knife safety training. Always put knives in their pouch when not in use. Don't talk with a knife in your hand especially if you 'talk with your hands'

Don't use a knife to move pieces of meat, especially to someone else e.g. a slicer to a packer. One slip and you've stabbed someone. Don't use a knife as a scraper. Apply the following rules to avoid injury.

When using a sharpening stone, make sure the stone is on a slip proof, flat surface. Make sure your steel has a safety guard between the handle and the body of the steel when using a grindstone make sure the rotation of the stone and the cutting edge of the blade are away from your body.

If you drop your knife let it fall, don't try to catch it. Always place your knife in the scabbard or pouch when not in use. Don't use a blunt knife as you will need to use more force which gives you less control.

Never take your eyes off the cutting path of the knife, if you must look away, stop cutting never cut towards yourself or towards another individual. Always be aware of the movement of people around you. Never fool around with a knife in your hand or fool around with others who may have a knife in their hand. Never use the knife as a pointer.

Keep the handle of the knife clean and free of fat and grease at all times. Personal protective equipment is a vital part of knife safety and workers should always use PPE when working with a knife. The range of PPE equipment used can include:

- mesh gloves
- mesh aprons
- cut resistant gloves

TITLE: SOP-PM026: Procedures involving Overhead Crane

Also refer to UQ Risk Assessment database ID

<https://www.risk.admin.uq.edu.au/Task/Default.aspx?TaskID=19313#Task:19313>

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for Crane

The purpose of the Standard Operating Procedure for activities involving crane operations in lifting and hoisting is to assure a safe and healthful work environment for staff and students of the University of Queensland. Under no circumstances, the hoist is to be operated by an untrained person.

Regular servicing and maintenance of the hoist is under the management of UQ P&F as per scheduled.

Definitions

Hoist - An appliance intended for raising or lowering a load or people, and includes an elevating work platform, a mast climbing work platform, personnel and materials hoist, scaffolding hoist and serial hoist but does not include a lift or building maintenance equipment.

Rated capacity - The maximum gross load that may be applied to the crane or lifting attachment while in a particular working configuration and under a particular condition of use.

Workers have a duty to take reasonable care for their own health and safety and must not adversely affect the health and safety of other persons. Workers must comply with any reasonable instruction and cooperate with any reasonable policy or procedure relating to health and safety at the workplace.

The three main reasons for accidents involving overhead cranes are:

- Lack of adequate inspections and checks
- Overloading the crane beyond recommended capacities and
- Lack of knowledge of critical information by the operator

Some hazards associated with crane operations are:

- Live overhead rails.
- Collapse, hoist & chain snaps.
- Crushed by the object on crane.
- Loads that shift/slip.
- Pedestrians entering the work zone.

- The crane itself - for example, hazards associated with the cranes structural condition, electrical and hydraulic systems, mechanical power sources, moving parts, load-carrying capacity and operator protection.

- How and where the crane is used – for example, there may be hazards associated with the kind of loads it will lift, and the size of the area in which it is to be used.

All foreseeable hazards should be addressed prior to any crane operations involving lifting or hoisting. The operator will comply with all Federal and State Regulations & Standard Operating Procedures involving crane safety, overhead cranes, overhead hoists & slings.

Pre-operational inspection

The crane operator should carry out a visual inspection and functional tests before the commencement of each work shift, including inspecting and testing the following:

- All relevant items indicated in the operations manual
- Operating and emergency controls
- Safety switches and interlocks, including limiting and indicating devices
- Visual inspection of the structure

The results of the inspection should be entered into a logbook and kept with the crane. All personal protective equipment should also be inspected to ensure it is functioning correctly. Where issues are identified these should be recorded, reported and rectified before the crane is used.

1. Inspect the crane before use, checking for deformed or cracked hooks and wear on the hoist chain, sling, and associated equipment.
2. Ensure that the crane and associated hoisting machinery is inspected, stamped & rated annually by an accredited company.
3. Position the hook directly over the center of the load to minimize swinging.
4. Ensure that the load is well secured and balanced in the sling or rigging before it is lifted more than a few inches from the ground.
5. Never suspend a load over or close to people, or stand under suspended loads or in the loads line of motion.
6. Do not attempt to manually shift, turn or redistribute a load once it has been lifted, since this increases the risk of accidents and injuries.
7. If the load is off center or looks as if it will slip, lower the load back to the ground before you approach to make adjustments.
8. Check the area in the path of the moving load to ensure that it will not hit anything, especially if it swings suddenly.
9. Move the load smoothly and avoid sudden accelerations or decelerations, which can cause the load to swing or shift.

Training and instruction for crane operations should include:

- The safe work procedures to be used in the setting up and safe operation of crane activities, such as traffic rules and clearances from overhead electric lines
- Knowledge of the crane manufacturer's operation and service manuals
- The method for inspection and maintenance of cranes
- The correct use, care and storage of tools and equipment, including personal protective equipment
- Emergency procedures.

Crane operators should be closely supervised until they are competent in operating the crane.

Familiarisation training provides crane operators with an opportunity to be familiar with the design, layout, operating functions and maintenance/inspection requirements of a specific crane.

TITLE: SOP-PM027: Procedures involving walkie stacker

Also refer to UQ Risk Assessment database ID

<https://www.risk.admin.uq.edu.au/Task/Default.aspx?TaskID=56345#Task:56345>

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for walkie stacker

Describes the safe work procedures of the following items:

- Crown Model WP 2300
- Crown Model 20IMTb110A

The walkie stacker model forklift is designed for a person to operate the truck while walking, not riding the equipment. Unlike the rider forklifts that are counterbalanced equipment that are designed for heavier loads, the walkie stackers are designed for less-demanding loads and shorter travel distances. This program reviews the basic safe work practices walkie stacker operators must follow to prevent injuries and damage to property. Topics include key-off and key-on inspections, basic operating procedures, engineering principles of walkie stacker, centre of gravity, the stability triangle and safe traveling.

As with any equipment, you must be trained to operate the equipment and you must be authorized before you operate the walkie stacker.

BASIC OPERATING PROCEDURES

You already know that the only way to operate any equipment is the safe way. For the walkie stacker trucks, the same rule applies.

Stand close enough to the truck so you have proper control, but don't stand too close. Standing too close can result in the wheels of the truck running over feet or legs, causing serious injury to the operator. Keep a safe and practical distance from the equipment.

There are different methods of slowing down and braking the truck. Pushing the handle all the way down is one method; pushing the handle all the way up is another. The throttle twist grips can also control braking. While traveling forward, twisting the grips into reverse also stops the truck. This is known as plugging.

The rear wheel performs the walkie stacker steering. Most material handling equipment operates differently than automobiles. Automobiles steer with the front tires, while material handling equipment generally steers with the rear tires.

Rear steering allows the operator to manoeuvre the machinery in tight spaces. Of course, rear steering usually takes a bit more time to learn and become proficient at. Pushing the handle to the right steers the truck to the right and pushing the handle to the left steers the truck to the left. Make sure you fully understand how to steer the walkie stacker safely before you operate.

DAILY INSPECTIONS

You must perform a daily inspection at the beginning of your shift, before you operate the equipment. This inspection should be thorough. Don't give the walkie stacker a quick once over. It's important to provide a thorough inspection. Basically, there are two parts to the inspection. First, with the key in the "off" position, and secondly, with the key "on" and the battery engaged.

Key-Off Inspection

- Key off, check to see if the forks are located in place and the correct working width is set.
- Check the wheels for cracks and gouges.
- Make sure the battery plates are in place and secured.
- Pull the handle down and make sure it snaps back to the vertical position when released.
- Check all chains and cables to make sure they aren't loose, frayed or otherwise damaged.
- The take up wheel should be free of binding.
- Check for leaks in the hydraulic system.
- Of course, make sure the battery is properly charged and in serviceable condition.

Key-On Inspection

- With the key in the on or engaged position, make sure the horn works.
- Check controls such as the raising, lowering and tilting functions.
- Check the safety-reversing mechanism.
- Check the brakes. They should work with the handle in the vertical and horizontal positions.
- Make sure the battery disconnect switch is functioning.



TITLE: SOP-PM028: Procedures involving hydraulic table

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for Hydraulic Table

The large animal necropsy table was designed for the dissection of large animals its ergonomic U-shaped design is so the person performing the necropsy can have better access to the animal.

The table top has a raised flange/lip on the outside edges to direct drainage of fluids to the ends of the table. It features all heavy gauge stainless steel construction.

The table has a self-contained hydraulic system that can be operated via the control panel on the wall above the sink.

- The control panel must be accessed with a master key, to turn on self-contained hydraulic system.
- Then press the green switches to adjust the height of table.
- When the necropsy is complete the table must be cleaned and sanitize and adjusted to the height of other tables within the post-mortem area.

The operation of the table is for the technician's or pathologists only. Personnel must stand clear of the table when the height level is being changed to avoid injury from the table or items on the table.



TITLE: SOP-PM029: Procedures involving Bosch, Mopec Surgical Saw & AGE reciprocating saw

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for handheld power saws

Definitions

A ***reciprocating saw*** is a type of saw in which, the cutting action is achieved through a push and pull reciprocating motion of the blade. The term reciprocating saw is commonly assigned to a type of saw used in construction and demolition work.

An ***oscillating saw*** closely resembles an angle grinder. But the business end, instead of spinning, vibrates or oscillates left to right. This blade movement allows an oscillating tool to perform any number of tasks, depending on the attached accessory. The most useful of these functions are cutting, sanding and grinding.

When a job demands needlepoint precision and accuracy, the oscillating saw gets into the itty-bitty details, an oscillating tool is what you're going to need.

Pre-Operational Safety Checks

1. Ensure this power tool has a suitable safe work area.
2. Material should be well supported & at a good working height.
3. Ensure cutting process will not contact support material.
4. Ensure material is free of loose knots & foreign objects.
5. Examine the power lead and plug for obvious damage.
6. Confirm this machine has a current electrical safety tag.
7. Check saw guard/s & blade are in good condition.

Operational Safety

1. Ensure the saw is correctly positioned & secured.
2. Do not support your material by hand. Secure to a bench or supports. Use two hands to operate the saw.
3. Do not start the saw with blade touching the material. Allow the saw to reach full speed before starting to cut.
4. Do not have any part of your body in line with the path of the saw blade.

5. Keep hands & power leads away from underneath the work. Do not attempt to remove cut material while the blade is turning.
6. Keep blade path straight during cut to prevent 'kickback' avoid twisting.
7. Use a fence or guide where possible when making long rip or cross cuts.
8. When cutting larger sheets ensure material is well supported to prevent binding on the blade & 'kickback' of the saw.
9. If task requires the cut to be stopped within the material, release the switch, hold the saw securely & wait for the blade to stop before removing.
10. Before making any adjustments to the saw, bring the machine to a complete standstill, & then disconnect the Batteries or AC plug from the power source.



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TITLE: SOP-PM030: Procedures involving Blitz-Kerner captive-bolt

Also refer to UQ risk assessment database ID

<https://www.risk.admin.uq.edu.au/Task/Default.aspx?TaskID=56360#Task:56360>

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for captive-bolt

How to use the Blitz-Kerner captive-bolt to kill farm livestock also handling, operating, cleaning and storage of the device. Applies to staff with responsibilities for euthanasia of animals, livestock.

Procedure:

When first handling the device, check that it is safe by ensuring it is uncocked (by examining the position of the cocking knob and trigger lever) and unloaded (by unscrewing the head piece and examining the cartridge chamber). Always treat the device as though it is loaded and cocked. Never point the device at yourself or other people

If necessary, uncock the device by pulling on the cocking knob then slowly releasing the cocking knob while pressing in the trigger lever. Unload the device by placing the trigger lever hook (located on the end of the trigger lever) under the rim of the cartridge in the opening created by the cartridge chamber gutter.

Handle the device in such a way as to reduce the risk of dropping the head piece when unscrewing it from the body of the device penetrating by Captive-Bolt.

A penetrating captive-bolt pistol uses a blank cartridge to fire a bolt into the brain of the animal. This causes concussion and trauma to the cerebral hemisphere and brainstem which renders the animal instantaneously unconscious. A correctly stunned animal will collapse immediately often with muscular contractions and involuntary kicking movements of the legs.

Stunning with a captive-bolt only stuns an animal; therefore it must be immediately followed by a second method that ensures death (e.g. exsanguination or pithing is an acceptable method of euthanasia in larger animals i.e. horses, pigs and ruminants, sheep, cattle, goats).

Suitable restraint of the animal and exact placement of the bolt is essential. Captive-bolt must be firmly held against the animals head when firing.

The manufacturer's recommendations should be followed on the most appropriate blank cartridges for each species. Captive-bolts are not regarded as a firearm however; it is beneficial for the operators to be properly trained in their use more from animal welfare aspects rather than from OH&S.

Rotate the trigger tensioning ring so that the split is located 180° from the trigger lever (i.e. the Opening in the ring is opposite the trigger) With new Blitz-Kerner .38 devices, use mild thread locking adhesive (ie Loctite) to prevent the barrel unscrewing from the cartridge chamber piece.

Smooth the cartridge chamber with 600 grit wet-dry sandpaper wrapped around a pencil if spent cartridges are difficult to remove.

Rehearse safe handling (including loading, cocking, uncocking, firing, ejecting spent cartridges, and reloading) thoroughly before using the device on animals.

Using hearing and eye protection practise firing into 5 mm width plywood- don't fire the device into the air as this may damage the device.

Use halters, nose grips, catching ropes, head bales, pig snares, races, crushes, blindfolds, sedation or other methods as necessary to restrain the animal and keep its head still.

Ask people not involved with assisting with the euthanasia task to leave & Forewarn assistants and observers of the reflex movements that normally occur after death and not to misinterpret them as signs of life.

Select the correct strength colour-coded activators (9mm/.38 calibre blank centre-fire cartridges) for the size and species of the animal.

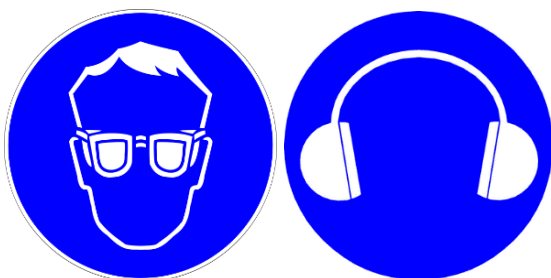
- Green - sheep, goats, calves, pigs, kangaroos, deer, alpacas
- Yellow - light cattle, horses, large deer
- Blue - large cattle.
- Red – bulls

Approach the animal slowly from behind or the side, Identify the anatomical target site which is the high frontal position in cattle, pigs and horses and the low poll position in sheep, goats and deer

Cock the device by pulling on the cocking knob until you feel and hear the firing pin "click" into the cocked position. Call out something to warn people in the area that a shot is about to be fired

Wait until the animal stops moving then press the device firmly against the animal's head, aim midway between the base of the ears where the brainstem is located.

If in doubt of shots success reload and fire again in secondary position. Using different point of entry either adjacent to the first shot or on the opposite site of head between the ears.



Blitz-Kerner captive-bolt



TITLE: SOP-PM031: Procedures involving Cleaning and Disinfection**SCOPE:** All Authorized Personnel**RESPONSIBILITY:** All Authorized Personnel**PURPOSE:** To Outline the Proper Procedures for cleaning and disinfection

General

Cleaning and disinfection are two separate tasks. Cleaning involves the removal of visible organic matter with soap or detergent, whereas disinfection involves the application of a chemical or other procedure in order to kill the remaining microbes that cannot be adequately removed by cleaning. Cleaning is essential because the survival time of many infectious agents outside the host is prolonged by the presence of organic matter, and organic matter also decreases the effectiveness of disinfectants. Depending on the level of disinfection used, disinfection kills or prevents the growth of many or most pathogens.

Equipment should be cleaned and disinfected according to its intended use, the manufacturer's recommendations, and practice policy. Equipment must be cleaned before sterilization or disinfection. Surfaces where animals are housed, examined, or treated should be made of non-porous, sealed, easy-to-clean materials to facilitate cleaning and disinfection and minimize infection transmission.

Personnel whose duties include cleaning and disinfection of equipment and different hospital areas should be trained regarding how to safely handle and use the products available in the clinic. In Australia, Material Safety Data Sheets (MSDS) must be readily accessible for all the applicable chemical products.

Post- Mortem Cleaning

Cleaning entails the removal of all forms of organic matter (e.g. soiled, urine, blood, food, etc.) from a surface. Ensure all areas are well ventilated during cleaning. Cleaning must always be done before a disinfectant is used. After cleaning, allow all surfaces to dry completely.

Avoid generating airborne dust that may contain pathogens by:

- Using a vacuum cleaner equipped with a HEPA filter. The filter helps to prevent aerosolization of pathogens such as ringworm. For this reason, vacuums without HEPA filters should not be used for cleaning in patient-contact areas.
- Lightly spraying surfaces with water prior to mopping or sweeping using an electrostatic wipe, using a wet mop.

Exposure to aerosols generated by brushes during cleaning can be minimized by taking certain precautions, such as wearing a face mask and containing spatter, if the brush or surface is damp. A surgical nose-and-mouth mask will provide some protection against droplet spatter, but not against finer particles and dry dust that can become suspended in the air. Removing sticky, wet or dried-on organic material from surfaces:

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This kind of debris should be removed using a detergent or soap and a brush or cloth, as necessary. • During cleaning, it is the mechanical action and surfactant properties of the soap that are important, not necessarily its antimicrobial activity.

Avoid the use of pressure washers, particularly those that produce more than 120 psi of pressure.

This amount of pressure may cause aerosolization of pathogens, and pressure washing may even damage surfaces, thus making them harder to disinfect properly. A home garden hose sprayer usually produces less than 120 psi of pressure, and would therefore be relatively safe to use in a small animal kennel area.

Disinfection

Disinfection is more effective if preceded by thorough mechanical cleaning. Ensure the area is well ventilated before using disinfectants. Gloves should be worn when handling disinfectants, but latex gloves will decompose and lose their integrity when exposed to many chemicals. For small jobs, disposable nitrile gloves should be used instead. For large jobs, heavier rubber gloves (e.g. common dishwashing gloves) can be used, but reusable gloves of this type must also be disinfected at the end of each task.

Always refer to the product label with respect to dilution rates and required contact time.

Footbaths

Footbaths are used to decrease (but do not eliminate) microbiological contamination of footwear. Footbaths are shallow containers containing a disinfectant solution. Foot-mats are spongy commercial mats covered with a durable, easy-to-clean material that can be saturated with disinfectant. Foot-mats can increase compliance because they are easier to use, but they are more expensive and more difficult to maintain than footbaths.

Data regarding the need for and efficacy of footbaths and foot-mats are very limited, and there is essentially no information relating to small animal clinics specifically. It has been shown that footbaths can reduce bacterial contamination of footwear in large animal clinic settings. Although other sources of contamination have been shown to be more significant in infection transmission, footwear and floor surfaces cannot be overlooked in an infection control program in a small animal clinic, because patients so often have extensive direct contact with the floor.

Possible problems with footbaths or foot-mats use must also be considered. Footbath or foot mat use is almost invariably accompanied by spillage of disinfectant solution; this can create a slipping hazard on smooth floor surfaces, which are typically present in small animal clinics. Certain disinfectants can also damage floor surfaces with prolonged contact.

Footbaths or foot-mats should be considered when personnel will be walking on a surface that could potentially be more contaminated than the general floor environment, and where spread of this contamination might pose a risk to patients or personnel. The most likely area where footbaths or foot-mats could be useful would be at the exit of an animal housing area (e.g. dog run) that contains a potentially infectious case, and where clinic personnel will be walking in and out of the potentially contaminated area.

The need for routine use of footbaths or foot-mats in isolation areas where animals are confined in cages is questionable. If footbaths or foot-mats are used, selection of an appropriate disinfectant is important. The disinfectant should be effective against the specific pathogen(s) of concern, stable in solution, and effective with a relatively short contact time.

Oxidizing agents such as accelerated/stabilized hydrogen peroxide and peroxygen disinfectants are ideal. The solution should be changed daily or sooner if gross contamination of the bath/mat occurs. Maintaining proper concentrations of active disinfectants in footbaths and foot-mats is essential for proper performance.

TITLE: SOP-PM032: Procedures involving waste management

Refer to http://www.uq.edu.au/sustainability/docs/policiesprocedures/pbs_GuidesLabWste.pdf for laboratory and animal waste disposal;

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Protocol for handling and disposal of medical waste and sharps

Waste Management

Veterinary medical waste is a potential source of both zoonotic and non-zoonotic infectious pathogens. Therefore, it is important to handle all such waste appropriately. Biomedical waste typically includes sharps, tissues (anatomic waste), highly contaminated (e.g. blood-soaked) materials, and dead animals.

Used sharps are considered biomedical waste and should be disposed of in approved, puncture-resistant sharps disposal containers to remove, store and dispose of used sharps such as needles, blades, razors and other items capable of causing punctures. Non-anatomical waste saturated or dripping with blood (e.g. blood-soaked lap sponges and gauze) are also best disposed of as biomedical waste. If there is likely to be splashes or sprays during this disposal process, appropriate personal protective equipment should be worn.

All other waste, such as general office waste and non-sharp medical equipment, may be disposed of in the regular waste stream, and requires no special treatment other than containment during disposal and removal. Waste should be contained in a leak-proof container or bag that can be discarded with the waste (e.g. a plastic garbage bag).

Urine and feces are not considered biomedical waste, nor is disposable equipment that has come in contact with an infectious animal (e.g. examination gloves, gowns, bandage materials that are not saturated with blood). Nonetheless, some of these materials may pose a risk to clinic personnel, patients and waste disposal personnel in terms of their potential to transmit infectious pathogens.

Therefore, additional precautions should be taken to minimize contamination of the clinic environment and the risks to people and animals from potentially infectious waste. These may include double-bagging of materials from isolation areas, and keeping waste cans covered to prevent access by curious animals and to prevent spillage if a waste can is knocked over. If contamination of the inside of a waste can occurs (e.g. due to a tear in a garbage bag), the container should be thoroughly disinfected after emptying.

Precautions should be taken to minimize contamination of the clinic environment and the risks to people and animals from potentially infectious waste.

Environmental protection legislation:

Medical waste is a listed waste under Schedule 1, Part B of the Environment Protection Act 1993. Any person who carries on an activity in which anything listed in Part B of the schedule is produced as or becomes waste must be licensed.

Requirements for storage of medical waste:

- Treat any waste mixed with medical waste, as medical waste.
- The disposal of sharps should not incorporate cutting, bending or any other manipulation that could generate aerosols or splatter of contaminated fluids.

Place sharps into a suitable container that:

- Is puncture-resistant, leak-proof, shatter proof and able to withstand heavy handling.
- Displays the universal biohazard label
- Has an opening which is accessible, safe to use, and designed so that it is obvious when the container is full.
- Is sealable when full or ready for disposal.
- Can be handled without danger of the contents spilling or falling out.
- All needle stick injuries must be recorded.

Place all medical waste other than sharps in clearly labelled heavy duty plastic bags. Bags intended for domestic use are unsuitable for this waste. Tie the bags so as to prevent leakage or expulsion of solid or liquid wastes during storage, handling or transport and ensure they will not be subject to compaction by any compacting device.



TITLE: SOP-PM033: Histology cut-up/Post-Mortem

Refer to <http://www.uq.edu.au/ohs/chemical-waste-disposal>;

<http://www.uq.edu.au/ohs/chemical-spills>;

<http://www.uq.edu.au/ohs/chemwatch-sds-35890> for Material Safety Data sheet;

<http://www.uq.edu.au/ohs/hazardous-substances>

<http://www.uq.edu.au/ohs/purchase-of-dangerous-goods-hazardous-chemicals>

Refer to http://www.uq.edu.au/sustainability/docs/policiesprocedures/pbs_GuidesLabWste.pdf

for laboratory and animal waste disposal;

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for Specimen throw-out and pot wash-up

Purposes of procedure

To comply with the University's Environmental Management System and Government requirements for disposal of waste formalin solution, formalin fixed tissue and the recycling of plastic storage containers.

Definitions

- Formaldehyde CH_2O , single-carbon gaseous-aldehyde, systematically named methanol.
Commercial name for 37-40% aqueous-dissolved formaldehyde.
- Formalin Diluted formaldehyde in an aqueous solution usually containing a buffer
Resulting in a dilution to 4% Formaldehyde AKA 10% NB Formalin

Note: Formaldehyde/Formalin is classified as a **HAZARDOUS** material. MSDS must be read prior to undertaking this procedure and appropriate handling and Personal Protective Equipment implemented.

Specimen Throw-Out

Once the investigating pathologist has finished with a case's formalin fixed samples, they will be placed in the area designated as "Throw-Out Zone" in the Cut-Up Room. It is necessary to check this area regularly as minimal storage of formalin solution should be maintained and increased storage raises the potential for accidents or spillages.

Apparatus:

- fume cupboard
- 15L Formalin waste drum (Labelled)
- funnel and sieve (kept in fume cupboard)
- large biological specimen waste bucket (10l with lid)
- Clinical Path waste bin bag for formalised tissue waste

***Appropriate Personal Protective Equipment must be worn during this procedure.
(Lab coat Eye wear, fume hood suction should be sufficient but formalin vapours are
escaping the fume hood then a chemical respirator must be worn)***

1. Inform another staff member that you are doing this procedure as ask them to do 15min check-ups on your situation, this is for safety reasons. Other Histology staff, Anatomy Staff or intern staff are the only acceptable staff personnel to notify.
2. There should be 2 Waste formalin drums within the fume cupboard at all times and **never are they to be overfilled**, leave approx. 10% in volume as empty space. If there is a full drum in the fume cupboard, please ensure cap/lid is tight and carefully take it out and place into the chemical stores room for disposal (step 14). Fresh empty drums will present in either or in either the Chemical stores room or the cutup room.
3. Use either one the of the 15L Formalin Waste Drum within the fume cupboard, start fume cupboard and lower the shield to an appropriate height,
4. Also within the fume cupboard place a 10L bucket with lid for the formalised biological waste material,
5. Remove lid of waste drum and place funnel into opening. Place the sieve on top of the funnel,
6. Carefully remove the lid of specimen pot for disposal,
7. Carefully pour contents of pot into sieve, filtering the gross pathological waste and collecting the Formalin in the drum,
8. Raise the sieve, tapping gently in funnel to remove excess Formalin,
9. Tip contents of sieve into the 10L biological/clinical waste bin bag within a bucket,
10. Rinse pots and lids with hot tap water within the fume cupboard and Stack pot and lid in plastic tub inside the fume cupboard and set aside for washing and disinfecting,
11. Continue from step 3 until desired specimens have been disposed of or until Formalin waste drum is 10% from full capacity, **DO NOT OVER FILL THE WASTE DRUMS**, replace with fresh empty drums when required
12. Remove funnel and sieve and rinse under water in the fume cupboard,
13. When the 10L waste formalised biological bucket reaches $\frac{3}{4}$ full or you have completed all that requires throwing out, tie off bag and transport waste material to a PM room green bin. Formalised material is NOT to be thrown out in ACE WASTE bins.
14. Replace lid of waste drum, if/when the drum is full, carefully lift down from inside the fume cupboard and place in the Chemical Store area for pickup as described in step 12
15. Contact UQ Chemical Stores through their website URL: chemstore.science.uq.edu.au to arrange pick up of waste formalin drums as well as ordering fresh empty waste drums.

Specimen Pot Wash-Up

It may be necessary to co-ordinate this activity with the Pathologists, as some classes require the sinks and tables necessary to perform the wash-up.

1. Remove the tub containing the stacked pots from the fume cupboard and slide through window into the Post Mortem Room.
2. Enter Post Mortem Room and collect tub from the bench,
3. Plug the large sink and fill with hot water and add the detergent and disinfectant to the running water,
4. Separate the pots and place in the sink and submerge,
5. Allow adequate time (preferred overnight) to soak,
6. Peel off old labels and stickers, drain the sink and rinse each pot and lid, open-stacking them on an operating table to dry.
7. Once dry, stack the clean pots and store as required.

TITLE: SOP-PM034: Procedures involving Vehicles**SCOPE:** All Authorized Personnel**RESPONSIBILITY:** All Authorized Personnel**PURPOSE:** To Outline the Proper Procedures for vehicles

Vehicles

- Must be Cleaned weekly
- If taken into a field or pen they are then washed at a carwash (or equivalent) afterwards
- Sharps containers to be kept in vehicles
- Garbage bags to be kept in vehicles and used to contain contaminated material
- Cargo areas of vehicles used in the transportation of animals shall be cleaned and decontaminated as necessary to prevent contamination of future animal deliveries.

Floats and Trailers

Before you put your horse float away, make sure that you clean it out thoroughly every time that it is used. Manure and urine left in the float will eventually cause the floor to rot out, putting your horse's suture safety at risk!

Dirty floats harbour germs and mouldy straw and feed is a known cause of many quite serious respiratory problems in horses.

If possible, park your float under cover, and on a concrete floor. A dry floor helps to prevent rust and rot as it inhibits dampness. If you must leave your float outdoors, try to park in a dry sheltered spot. A tarpaulin placed over the float will also provide protection from the elements. You could also try a haystack cover, which are quite inexpensive and do a similar job.

A liberal application of anti-rust compound such as fish oil will help keep the float in good order, but make sure that you undertake this maintenance when you will not be using the float for several days.

Maintenance

Horse floats have a moderate number of moving parts and components that wear. Brakes, wheel bearings, lights, wiring and various fittings are all in need of regular maintenance to ensure that they work correctly.

- Tyres - treads, pressure, general condition. Don't forget the spare tyre too.
- Wheels - all nuts done up tight, check for cracks, dents to the rims or other damage.
- Brakes - check adjustment and operation of braking unit, and brake linings.
- Wheel bearings - repack if required.
- Lights - all lights operating, and a spare set of globes in the glove compartment of your vehicle.
- Suspension - check the suspension components and lubricate if necessary.
- Ball and Coupling - grease lightly.
- Chassis - examine for cracks in high stress areas.
- Float body - check for rust, rot in flooring and smooth operation of all doors and fasteners.



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Authorised by Rachel Allavena – Head Pathologist
Date: 01/01/2016 Reviewed 2017
Drive: G: (SOP 2016 Post-Mortem)

TITLE: SOP-PM035: Procedures involving repairs and maintenance

SCOPE: All Authorized Personnel

RESPONSIBILITY: All Authorized Personnel

PURPOSE: To Outline the Proper Procedures for repairs and maintenance

Maintenance personnel

Maintenance personnel requiring access to the post mortem room can only do so when it is not in use and clean. This must be through prior arrangement with the Head of Anatomic Pathology and the School's Facilities Manager.

- ***Daily checks***

Daily maintenance on a bandsaw will usually include checking condition of the blade. Check blade tension and tracking. Check for wear, damage or lubricant leakage of the blade support bearings. Check for excessive wear of the carbide blade guides (if fitted)

Tools - A liberal application of anti-rust compound such as fish oil, INOX, WD40 will help keep the most hand tools in good order.

PM room check list – lights, fans, hoods, taps, chemicals, change rooms, fridges

- ***Weekly checks***

Maintenance check list for Cranes

Routine inspection and maintenance should be carried out in accordance with the crane manufacturer's instructions. These inspections may include a program of weekly, monthly and quarterly inspections, and should include:

- All functions and their controls for speed, smoothness of operation and limits of motion
- All emergency and safety switches and interlocks, including limiting and indicating devices
- Lubrication of all moving parts.
- Inspection of filter elements and fluid levels visual inspection and measurements as necessary of structural members and other critical components such as brakes, gears, fasteners, pins, shafts, wire ropes, sheaves, locking devices and electrical contactors
- Signage, including warning signs and control markings
- Wear on wheels
- Additional items nominated in the crane manufacturer's instructions.

All replacement parts should be identical or equivalent to the original parts or components. A written report should be prepared on completion of the inspection.

Maintenance check list for Floats

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- Tyres - treads, pressure, general condition. Don't forget the spare tyre too.
- Wheels - all nuts done up tight, check for cracks, dents to the rims or other damage.
- Brakes - check adjustment and operation of braking unit, and brake linings.
- Wheel bearings - repack if required.
- Lights - all lights operating, and a spare set of globes in the glove compartment of your vehicle.
- Suspension - check the suspension components and lubricate if necessary.
- Ball and Coupling - grease lightly.
- Chassis - examine for cracks in high stress areas.
- Float body - check for rust, rot in flooring and smooth operation of all doors and fasteners.

- ***Six monthly checks***

- ***Annual checks***

An annual inspection should include all items specified by the crane manufacturer for annual inspection, as well as all items included in the routine inspection and maintenance programs.

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