

## Appendix 10 – Guidelines for Developing Safe Laboratory Practices in ACU Anatomy Laboratories

### Background

The Australian Catholic University's (ACU) School of Physiotherapy's Anatomy Laboratories located at its Banyo and MacKillop Campuses are provided for the teaching, learning and research of anatomy.

Staff, students, visitors and contractors accessing the anatomy facility should understand that legislation exists that places an obligation on the University to manage the anatomy facility in a judicious manner and demands the appropriate conduct of users. The University recognises the enormity and solemnity of the contribution that is made by those who donate their bodies for the purpose of providing learning resources to health practitioners, and by the loved ones of donors. The University is committed to treating the human remains entrusted to its care with the utmost respect and professionalism, and requires its employees and students to obey and uphold all legal, public health and ethical standards associated with the handling of bodies and human tissues.

### Statutory Requirements

ACU has a legal responsibility for the licensing and safe operation of Anatomy Laboratories, as outlined in several areas of Australian law including but not limited to:

National Standards	New South Wales	Queensland
<ul style="list-style-type: none"> <li>AS 2243 – Safety in Laboratories, Parts 1-10 (access is possible via the ACU Library electronic publications)</li> <li><a href="#">National Standard for the Storage and Handling of Workplace Dangerous Goods [NOHSC:1015(2001)]</a></li> </ul>	<ul style="list-style-type: none"> <li><a href="#">Occupational Health and Safety Act 2000 and Regulations (2001)</a></li> <li><a href="#">Anatomy Act, 1977</a></li> <li>Human Tissue Act, 1983</li> <li>Public Health (Disposal of Bodies) Regulation, 2002</li> <li>Human Tissue and Anatomy Amendment Legislation Act (2003)</li> <li>New South Wales Department of Health relevant policies and guidelines</li> <li>Local Government Regulation</li> <li>Anatomy Facilities, Standards, Maintenance and Operation</li> <li>Management of Hazardous Materials as per the OHS Regulations 2001.</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">Workplace Health and Safety Act 1995 and Regulations (2008)</a></li> <li><a href="#">The Transplantation and Anatomy Act (1979), Regulations (2004) and Amendment (2006);</a></li> <li>The Queensland Criminal Code.</li> <li>Queensland Department of Health's relevant policies</li> <li>Local Government Regulation</li> <li>Anatomy Facilities, Standards, Maintenance and Operation</li> <li>Dangerous Goods Act and Regulations 2001</li> </ul>

This appendix should also be read in conjunction with the following School of Physiotherapy and ACU policy documents:

- [Interim ACU Laboratory Safety Guidelines](#)
- *General Summary of Anatomy Laboratory Procedures*
- *ACU Anatomy Laboratory Code of Conduct*
- *ACU Anatomy Laboratory Rules*
- *ACU Anatomy Policy*

## Key Definitions

For the purposes of this document, the key definitions are as per the definitions provided in *the ACU Anatomy Policy*.

## Policy Statement

ACU acknowledges its responsibility to protect the health and safety of all staff, students, contractors and visitors to the Anatomy Laboratories and undertakes to comply as far as it is reasonably practicable to do so with the Australian Standard AS 2243 – *Safety in Laboratories, Parts 1-10* and the relevant State/Territory Work Health and Safety (WHS), Anatomy and Hazardous Materials/Dangerous Goods legislation and regulations.

ACU will also as far as it is reasonably practicable to do so, minimise the risks associated with Anatomy Laboratory activities by providing a safe and healthy environment for all staff, students, contractors and visitors.

## Application

The ACU Anatomy Facilities Safety Guideline applies to all University staff, students, contractors and visitors.

## Roles and Responsibilities Key Stakeholders

The University recognises that the effective provision of safe work environments and safe systems of work place reciprocal responsibilities on staff, management, students, visitors and contractors. Those responsibilities are described in detail in [Section 4.1 of the Interim ACU Safety Laboratory Guidelines](#).

In addition to the general health and safety responsibilities; the following additional responsibilities must be implemented to meet the individual State Health Department Licensing requirements for the conduct of anatomical examinations within the University's Anatomy Facilities:

- University anatomy facilities covered by a license to conduct anatomical examinations (e.g. mortuaries, laboratories, museums) must comply with the standards set out in the NSW and Queensland Acts and Regulations described above.
- The Licensee (by nomination the Assistant Head, School of Physiotherapy) is responsible for monitoring the University's compliance with these licensing provisions and ensuring that the University retains or, where necessary, updates its license to conduct anatomical examinations. In fulfilling this responsibility the Licensee may seek whatever advice or assistance they deem necessary.
- The Director, Properties and local Campus Manager, are expected to support the Licensee in meeting compliance requirements with respect to the maintenance of the University's anatomy facilities. In this respect the Director, Properties and local Campus Operations Unit are responsible for:
  - Ensuring all the University's anatomy facilities are maintained in a state that is compliant with the mortuary standards set out in the Acts and Regulations;
  - Reporting anatomy facility compliance issues, including potential issues, to the Licensee as soon as practicable to enable any necessary remedial action to be taken; and
  - Assisting the Licensee in addressing any anatomy facility non-compliance issues
- The Australian Catholic University expects employees, students and visitors to cooperate with any reasonable request or instruction issued by the Licensee, or their nominees, to enable the University to fulfil its obligations with respect to these licensing requirements.

## ACU's Duty of Care Responsibilities

The Queensland, NSW and the impending National WHS Model legislation (due for implementation January 2012) are based on the principles of duty of care and due diligence within all workplaces. Therefore, implementing the duty of care principle at ACU workplaces requires attention to the planning for the prevention of workplace accidents, injuries and illnesses. There is a general duty of care on the University to ensure the health, safety and welfare at work of all employees and others who come on to the workplace, especially potentially hazardous work areas such as the Anatomy Laboratory. It is the University's responsibility to ensure that all reasonably practicable measures have been taken to control risks against all possible injuries arising from the workplace. The employer's duty of care applies to all people in the workplace, including visitors and contractors.

Furthermore, given the unique nature and the type of activities carried out in the University's anatomy facilities, the duty of care will also include the following considerations:

- Students and authorised lab users may feel distressed when first encountering human bodies, sections or tissues, and/or they may raise issues of grief. There is also a slight possibility that a student may recognise a body as a person they may have known prior to that person's death (e.g. a relative, friend or neighbour). School staff members are aware of these potential problems and are expected to respond sympathetically and appropriately.
- Students and authorised lab users will have access to University Counsellors to help resolve these issues.
- To enable staff to provide assistance and take steps to rectify the situation, students and authorised lab users are encouraged to inform staff as soon as possible if they feel there may be a potential problem, they are experiencing any anxiety or grief or they may have known a donor
- All concerns of student and authorised lab users will be treated confidentially.

## Safety and Risk Management Procedures

The procedures outlined below should be seen as an essential step in preventing injuries and accidents in the University's anatomy facilities, and in meeting the University's legislative, regulatory and licensing obligations.

### 1. General Laboratory Safety

The National Head of School is responsible for developing Anatomy Laboratory Safety Rules which should be distributed to all staff and students. Prior to entry to an anatomy laboratory, all visitors and contractors should be made aware of the general safety rules.

The *ACU Anatomy Laboratory Rules* has been developed by the School of Physiotherapy and documents the general safety rules for anatomy facilities on ACU campuses. The document provides guidance on:

- **Workplace Health and Safety including**
  - Notification of medical conditions, especially those staff and students who may be pregnant, as exposure to certain chemicals may harm the foetus,
  - The requirement for all staff and students to be vaccinated against Hepatitis A & B, measles, mumps, pertussis, rubella and tetanus.
  - Following emergency procedures in the event of an emergency
  - Reporting all incidents and accidents to their supervising staff member
  - No eating or drinking in the lab
  - Hands to be washed before leaving the facility
- **Security and Access to the facility including:**
  - Restriction of access to those staff and anatomy students, appropriately approved Campus Operations and contract cleaning staff.
  - Visitors and contractors should only be admitted if approval from the National Head of School has been obtained and they should be escorted at all times.

- Student ID to be carried and students are to be supervised at all times
- Bags and backpacks must be kept in the bag racks provided
- Use of mobile phones and pagers is prohibited
- Recording of images is not permitted without the approval of the National Head of School
- Labs should be secured when not in use.

- **Lab Attire including:**

- Lab coats and enclosed footwear must be worn at all times
- Gloves and eye protection must be worn whenever human specimens are in use
- Long hair tied back, with sunglasses and hats removed before entering the lab
- Contact lenses should not be worn due to the risk of exposing eyes to harmful chemicals.

- **General Housekeeping**

- Personal Hygiene including washing hands and removal of gloves
- Care of wet specimens
- Ensuring anatomy models do not come into contact with wet specimens and contaminated gloves
- Keeping floors, fire exits and aisles tidy, clean and free of obstruction
- Thorough cleaning of work areas and equipment after use
- Cleaning up spills immediately and informing lab staff

Staff and students are also required to read the *Anatomy Laboratory Staff and Student Code of Conduct*. The *ACU Anatomy Policy* provides further details in relation to the receipt, handling, storage and disposal of donated human bodies and tissue.

The University will not tolerate any activity that devalues the contribution of those who donated their remains for medical or scientific purposes. Furthermore, those staff and students who do not comply with these safety guidelines, who do not show the donated bodies due respect and dignity and who do not comply with the *Anatomy Laboratory Staff and Student Code of Conduct* may be excluded from the facility and may also be subject to prosecution under National and State legislation.

## 2. Hazard Identification & Risk Assessment

An inherent part of Australian WHS legislation is the requirement for workplaces to undertake risk assessments on all of their activities which may impact the health and safety of staff, students, visitors and contractors. Given the nature of the activities carried out and the type of materials stored in an anatomy laboratory there are certain hazards that have the potential to cause harm to the health and safety of staff and students. The National Head of School (or nominee) and/or Lab Manager must use a risk management process to help manage any risks or identified hazards:

- Step 1: Identify the hazard
- Step 2: Assess risk
- Step 3: Controlling the risk

The School of Physiotherapy is required by Australian WHS law to develop and implement in consultation with laboratory and Academic Staff and/or local Health and Safety Representative/Committee Member, a laboratory risk assessment protocol based upon the [ACU Work Health and Safety Risk Management Program Guidelines](#). The guidelines will assist laboratory risk assessment teams to follow the standard risk assessment process of **Identification, Assessment and Control** for all of the major hazard groups that are likely to be present in anatomy laboratories, which may include but are not limited to:

- Manual Handling Hazards
- Sharps, Equipment and Process Hazards
- Chemical Exposure Hazards
- Biological Exposure Hazards

By reviewing the various laboratory work areas and activities against each of the major hazard groups, a comprehensive assessment will be produced that incorporates all of the WHS and Anatomy legislative

requirements and University standards. The risk assessment forms provided at [Appendices 6, 7, 8 and 9](#) of the *Interim ACU Safety Laboratory Guidelines*. have been designed to allow assessment teams to quickly and comprehensively identify and assess the hazards in the laboratory, rank them in terms of priority and provide guidance for the development of appropriate control measures. The forms are generic in nature and therefore, can be adapted to meet the School's needs.

- Laboratory inspections are an important part of the risk management process, serving to both identify hazards and to review the adequacy of risk control measures. The inspections undertaken may vary in formality but generally would take the form of:
- **Walk-throughs** – walking around to check for things which may be out of the ordinary; these would most likely be completed by laboratory staff on a daily basis;
- **Safety inspections** – may be performed by the local WHS Committee and/or laboratory/Academic Staff using a checklist similar in nature to [Appendix 6](#); and
- **Safety audits** – these are more formal and may focus on the risk management systems. [Appendix 7](#) may be of use during such an audit. The audit team may include for instance, the Lab Manager, a WHS Committee Member/HSR and the local Campus Manager.
- **Records** should be kept of all safety inspections and audits in accordance with WHS and Anatomy Legislative requirements.

The Laboratory and Bio-safety Focus Group has oversight of safety inspections and audits and would receive reports of the inspections/audits outcomes. Additionally, copies of inspection reports and audits should also be provided to the Campus Operations Unit, National Head of School with a summary provided to the local Campus WHS Committee.

In relation to risk, time and expertise should be invested on selecting an appropriate control measure and instigating it. Supervising academics and laboratory managers are responsible for following through and ensuring the controls are put in place by the work area or support services as appropriate. Risk assessments should relate to any work or learning activity that is to be undertaken in a laboratory or associated facility. Please refer to [Appendices 8 and 9](#)

The assessment and management of risk is an ongoing process and must be continually evaluated to reflect changes in the quantity or type of hazardous substances present in the laboratory, types of procedures to be performed, and current regulations and recommendations from statutory WHS and Health authorities regarding safe laboratory practices in an anatomy laboratory.

### 3. Reporting of Accidents and Incidents

All persons at a workplace are responsible for recording and reporting incidents involving students, staff and visitors. All incidents/accidents/near misses should be reported using the [Accident and Incident Report Form](#). Students should report any incident in the first instance to staff, who then should report the incident using the [Accident and Incident Report Form](#). Where required, First Aid assistance should be provided by a designated Campus First Aid Officer or by an appropriately trained staff member and where deemed necessary, Emergency Services called.

If the injury is serious or fatal or the incident is considered dangerous, then State WHS Statutory Authorities may need to be informed. Please refer to the [ACU Accident Reporting Guidelines](#) for further information on the statutory reporting requirements of accidents/incidents.

### 4. First Aid

Supervising Academic Staff, laboratory staff and designated Campus First Aid Officers should be familiar with their responsibilities for providing first aid services and facilities (e.g. First aid kits) as outlined in the [ACU First Aid Procedures](#). Each ACU campus has a number of appointed designated First Aid Officers (FAO) who are on call. However, The National Head of School is encouraged to make known to their staff and students those laboratory or Academic Staff, other than a designated FAO, who may hold appropriate Advanced or Senior First Aid qualifications.

Injuries of any type should be reported immediately to the academic or laboratory staff member for assessment and, if required, treatment. An [Accident and Incident Report Form](#) should be completed and submitted to the local Campus Operations unit as soon as possible.

Should a serious incident occur at some time, e.g. an explosion, all staff and students involved should attend a debriefing session. If students require post-incident counselling, they should be referred in the first instance to the University Counselling Service. Staff are able to seek appropriate counselling services through the University's Employment Assistance Provider, [ACCESS Programs Australia \(1800 81 87 28\)](#).

## 5. Induction and Training

The National Head of School and/or their nominee shall ensure that all laboratory and Academic Staff, students, visitors and contractors that are required to use the Anatomy Laboratories or have responsibility for biological, chemical and human remains/tissue and/or lab equipment receive induction and refresher training which includes sufficient information and instruction to enable staff, visitors, contractors and students to handle these substances and equipment safely.

A generic **Safety Induction Form** checklist is included as Appendix 5 of the [Interim ACU Safety Laboratory Guidelines](#). It is recommended that the School tailors this form to suit an induction for the Anatomy Laboratories. The School of Physiotherapy is also required to keep records of all induction and training programs implemented within the School.

## 6. Chemical and Biological Safety

In order to better manage the biological and chemical safety within all ACU Laboratories including the Anatomy Laboratories, a National Laboratory and Bio-Safety Focus Group, comprising a nominated representative from each campus and the WHS Coordinator, acting as the Executive Officer, will be established to oversee and monitor, via quarterly meetings, the implementation and review of the ACU Laboratory Safety Guidelines including the Anatomy Laboratory Safety Guidelines.

ACU has certain legal and regulatory obligations under State/Territory WHS and dangerous goods legislation and Australian standards relating to chemical management and in particular, the management of hazardous substances and dangerous goods in the workplace. Please refer to [Appendix 1 of the Interim ACU Safety Laboratory Guidelines](#) for a list of references as they apply to chemicals, dangerous goods and hazardous substances. The School will develop procedures for the management of chemicals, including the conduct of [chemical risk assessments](#), maintenance of risk registers and Material Data Safety Sheets (MSDS), the labelling of containers and the storage/disposal of chemicals in accordance with the legislative and regulatory requirements detailed in Appendix 1.

The University also recognises that staff, students, contractors and visitors working and studying at ACU may handle or be exposed to biological materials, including human blood and body fluids that put them at risk of contracting infection from HIV, the hepatitis viruses or other blood-borne pathogens. In addition, in the clinical setting, students and supervising staff may be exposed to other potentially infectious materials.

As Anatomy Laboratories handle biological materials including human remains, the School is expected to develop, implement and monitor procedures and guidelines for biological safety. In particular, most of the procedures for the receipt, handling, storage and disposal of human remains are detailed in *ACU Anatomy Policy*. The bio-safety and chemical management procedures and guidelines will be overseen and reviewed by the Laboratory and Bio-safety Focus Group.

## 7. Spills Management

Spills emergency plans must be developed, where applicable, for all anatomy laboratories and personnel trained in how to implement the plan(s) and specific procedures that must be followed. MSDS must be readily accessible for all chemicals used in the laboratory. Information regarding how to manage spills should be read and understood by all staff and students who work or learn in the laboratory. **Sections 6.6.3.1 – 6.6.3.3** in the [Interim ACU Safety Laboratory Guidelines](#) outlines the procedures for the handling and management of spills



All anatomy laboratories should be provided with a spill kit appropriate to control the risk associated with a spill of the type of hazardous material(s) (e.g. chemical, biological) being used in the laboratory. Notwithstanding the outcome of a laboratory risk assessment, spill kits must (as a minimum) contain appropriate personal protective equipment, absorbents and neutralisers. To ensure serviceability, all spill kits should be checked on a regular basis by laboratory technical staff. Commercially available kits may be purchased or may be prepared by laboratory/Academic Staff after referring to appropriate MSDS or other manufacturer or supplier specifications/materials associated with the hazardous material(s).

If a spill does occur students should immediately notify their supervising staff member or laboratory technician and an [Accident and Incident Report Form](#) should be completed as soon as possible.

## **8. Needle Stick/Sharps/Biological Exposure**

Specific protocols should be developed and implemented by the School of Physiotherapy's Laboratory Manager to manage injuries and biological exposure such as those caused by needle-stick, sharps, or mucous membrane exposure to human blood or other body fluids.

The plan should be clear as to who will do what, and should make sure that anyone who will counsel the exposed person has relevant knowledge and experience. Counselling, treatment (to prevent or treat disease) and follow-up as appropriate should be offered. As with all incidents, all needle-stick, sharps and biological exposure incidents should be reported using the ACU [Accident and Incident Report Form](#). In every case, the injury, immediate response and follow-up should all be properly documented.

## **9. Emergency Procedures**

The National Head of School is to ensure that all staff, students, visitors and contractors are familiar with the emergency procedures for their particular campus. The [ACU Emergency and Critical Incident Policy](#) does provide further information on how to handle certain emergency situations. The School should also ensure that laboratory inductions inform participants of the location and the correct use of safety equipment. As such, staff and students should be aware of:

- All emergency exits and nearest telephone (emergency phone number list should be prominently displayed);
- Fire alarms, fire extinguishers (type and their use), fire blankets and sand buckets;
- Safety showers and eyewash facilities;
- First Aid Officers and kits, Floor Wardens; and
- Material Safety Data Sheets (MSDS).

In the event of an emergency, staff and students should cooperate fully with key emergency personnel such as First Aid Officers, Floor Wardens and emergency services personnel.

Laboratory managers and/or academics in charge of practical classes are responsible for ensuring that measures are taken to assess the nature and extent of risks posed by hazards and processes in the anatomy laboratory and/or ensure that an effective emergency management plan is developed, implemented and tested for their anatomy laboratory. To ensure compatibility with local Campus Emergency and Evacuation Procedures, the School will need to closely liaise with the local Campus Operations Unit. Individual Laboratory Emergency Plans should also include procedures for handling dangerous goods emergencies.

## **10. Safety & General Equipment**

Safety equipment requirements should be identified for each laboratory through risk assessment and, as such, all laboratories are required to have safety equipment installed and/or available to manage the identified residual risks. Risk assessments should be used to identify the type of safety equipment required for the laboratory, e.g. eye wash stations.

Safety equipment generally falls into three key categories as summarised below:

1. **Fixed** may include but is not limited to safety showers with or without eye wash facilities, eye wash stations, emergency isolation valves and switches, bench mounted fume extraction systems, fume cupboards, drainage pits and approved storage cabinets.
2. **Portable** may include fire extinguishes, fire blankets, first aid kits, sharps and broken glass disposal bins, spill kits, trolleys, electric lifters and protective shields.
3. **Personal Protective Equipment (PPE)** can include items such as lab coats, eye protection (safety glasses, goggles), respiratory protection (masks, respirators), hearing protection and shoes.

Please refer to Appendix 1 of the [Interim ACU Safety Laboratory Guidelines.](#), which lists references as they relate to the requirements for laboratory safety equipment.

All general equipment falls within the definition of plant and equipment and as such is subject to ACU's policies on purchasing, installation, training, maintenance and risk assessment. The School is advised to contact their local Campus Operations unit for further information. Safe work practices/safe handling instructions are developed for:

- *The Standards, Maintenance and Operation of Anatomy Facilities in accordance with State legislation;*
- fume cupboards, biological safety cabinets and autoclaves (refer to [Sections 6.10.2, 6.10.3 and 6.10.4](#)),
- liquid nitrogen and laser equipment,
- refrigerators, electrical equipment and plant and equipment,
- spills,
- waste disposal, e.g. biological, chemical, broken glass, sharps waste
- hazards, e.g. human, animal and biological (bacterial and animal cell) cultures,
- infection control, particularly where blood and body fluids are handled, and
- manual handling - in particular, approved anatomy laboratory staff should receive training in the correct use of the electric lifter.

## 11. Disposal of Laboratory Waste

The National Head of School, supervising Academic Staff and laboratory managers should in consultation with their local Campus Operations unit develop procedures for the disposal of waste generated by laboratories under their control. The procedures should protect the health and safety of persons in control of, or exposed to hazardous waste in the workplace, and community in general. The appropriate controls adopted should be environmentally responsible and comply with State/Territory WHS and environmental protection legislation and regulations as well as the *AS/NZS 2243 and AS 4031 series*.

Procedures should be in place for:

- segregation of all waste (*AS/NZS 2243.1, AS/NZS 2243.3, AS/NZS 2243.4 refer*);
- segregation, storage and disposal of chemical and solvent waste;
- segregation, storage and disposal of clinical and biological waste (please note that all clinical and biological waste should be classified as contaminated);
- segregation, storage and disposal of mixed waste;
- storage and disposal of broken glass, needles and sharps;
- training of staff and students in waste management and spills clean-up procedures, and the
- disposal of donated bodies and human tissue in accordance with State Anatomy legislative and Health Department regulatory requirements.

All staff, researchers and students must maintain a high standard of housekeeping and follow all local waste disposal processes.

## 12. Review



The Anatomy Laboratory Safety Guideline should be reviewed from time to time to ensure continuing licensing and legislative compliance. Any feedback should be provided to the National Head of School, School of Physiotherapy.