Australian code of practice for the care and use of animals for scientific purposes

2003

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• Australian Research Council
• Australian Vice-Chancellors’ Committee

and representatives of the
• State and Territory governments of Australia
• Welfare organisations (RSPCA and ANZFAS)

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Introduction

Purpose of the Code

The purpose of this Code is to ensure the ethical use and the humane care of animals used for scientific purposes as defined in this Code.

Its aims are to:

- emphasise the responsibilities of investigators, teachers and institutions using animals;
- ensure that the welfare of animals is always considered;
- ensure that the use of animals is justified, taking into consideration the scientific or educational benefits and the potential effects on the welfare of the animals;
- avoid pain or distress for each animal used in scientific and teaching activities;
- minimise the number of animals used in projects; and
- promote the development and use of techniques which replace animal use in scientific and teaching activities.

The Code establishes Animal Ethics Committees (AECs) to verify that the case for animal use is justified and to ensure adherence to the principles of Replacement, Reduction and Refinement (ref Russell and Birch). AECs apply a set of principles outlined in this code governing the ethical conduct of people whose work involves the use of animals for scientific purposes.

Throughout this Code, the principles of Replacement, Reduction and Refinement may be referred to as the 3Rs.

Scope of the Code

The Code encompasses all aspects of the care and use of, or interaction with, animals for scientific purposes in medicine, biology, agriculture, veterinary and other animal sciences, industry and teaching. It includes their use in research, teaching, field trials, product testing, diagnosis, the production of biological products and environmental studies.

The Code provides general principles for the care and use of animals, specifies the responsibilities of investigators, teachers and institutions, and details the terms of reference, membership and operation of institutional AECs. It also provides guidelines for the humane conduct of scientific activities, and for the acquisition of animals and their care, including their environmental needs.

The Code covers all live non-human vertebrates. Eggs, fetuses and embryos must be treated in a humane manner where development of an integrated nervous system is evident. Investigators should consider forwarding proposals to use higher order invertebrates to AECs.

Revision of the Code

The 7th edition of the Code of Practice is endorsed by the National Health and Medical Research Council (NHMRC), the Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australian Research Council (ARC), and the Australian Vice-Chancellors Committee (AVCC). It was revised by representatives of these organisations together with representatives of the State and Territory governments of Australia, animal welfare groups and with input from the public.

Periodic revisions take into account changes in the biological sciences and in community attitudes.

Comments on the Code

Comments on this Code are invited and should be addressed to The Secretary, NHMRC, MDP 100, GPO Box 9848, Canberra ACT 2601.

State and Territory legislation regulating the use of animals for scientific purposes

Current in 2003

<table>
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Other relevant legislation

Commonwealth

(i) Environment Protection and Biodiversity Conservation Amendment (Wildlife Protection) Act 2001
(ii) Export Control Act 1982, including Export Control (Animals) Order 1987
(iii) Quarantine Act 1908

State-Territory

(i) Native Fauna Acts
(ii) Occupational Health and Safety Acts

NOTE: Copies of the above legislation and relevant regulations may be obtained from Federal, State and Territory publishing services.

Definitions of terms used in this Code

Animal: Any live non-human vertebrate, that is, fish, amphibians, reptiles, birds and mammals, and encompassing domestic animals, purpose-bred animals, livestock and wildlife

Animal Ethics Committee (AEC): A committee constituted in accord with the terms of reference and membership laid down in this Code.
Animal Welfare: An animal’s state in coping with circumstances that impact on its wellbeing. (See also ‘Wellbeing’ and ‘Distress’)

Approved project: A project which has been formally approved by a properly constituted AEC, on the basis of a written proposal.

Clone: A clone is a genetic copy of another living or dead animal. It is not a twin derived by the fertilization of an egg by a sperm.

Conflict of interest: A situation in which an AEC member has an interest that may either influence or appear to influence, their objectivity in the exercise of their duties as a member of the AEC.

Consensus: A decision making process whereby the legitimate concerns of members of the AEC are addressed, as a result of which all members explicitly agree to the final decision, even though it may not be an individual’s preferred option.

Death as an end-point: When the death of an animal is the deliberate measure used for evaluating biological or chemical processes, responses or effects. That is, where the investigator or teacher will not intervene to kill the animal humanely before death occurs in the course of a scientific activity.

Distress: An acute or chronic response of an animal caused by stimuli that produce biological stress, which manifests as abnormal physiological or behavioural responses.

Euthanasia: The process of killing an animal with minimal pain and distress.

Genetic modification: The introduction to, removal from or modification to DNA of animal cells or whole animals with a view to producing a genetically-modified animal.

Investigator or teacher: Any person who uses animals for scientific purposes.

Livestock: Animals which are used in commercial agriculture, including cattle, sheep, pigs, poultry, goats, horses and fish.

Project: A single scientific activity or series of related activities that form a discrete piece of work.

Proposal: A written description of a project for consideration by an AEC.

Scientific purposes: All those purposes which aim to acquire, develop or demonstrate knowledge or techniques in any scientific discipline including for teaching, field trials, environmental studies, research, diagnosis, product testing, and the production of biological products.

Scientific activities: Those activities required to achieve the scientific purposes.


Voucher specimen: Any specimen, usually but not always a cadaver, that serves as a basis of study and is retained as a reference. ‘Type’ specimen is a particular voucher specimen that serves as a basis for taxonomic description of that subspecies.

Wildlife: Free-living vertebrates of native, non-indigenous and feral species including captive-bred animals and those captured from free-living populations.

Wellbeing: An animal’s perception of its dynamic and complex relationship with all aspects of its environment, both internal and external; it implies a positive mental state, successful biological function, positive experiences and freedom from adverse conditions.
Section 1: General principles for the care and use of animals for scientific purposes

Purpose: For the guidance of investigators, teachers, institutions, AECs and all involved in the care and use of animals for scientific purposes.

Encapsulated in these principles is the need in scientific and teaching activities to consider:

• the replacement of animals with other methods;
• the reduction in the number of animals used; and
• the refinement of techniques used to reduce the impact on animals.

Justification & Responsibilities
1.1 Scientific activities using animals may be performed only when they are essential:
• to obtain and establish significant information relevant to the understanding of humans or animals;
• for the maintenance and improvement of human or animal health and welfare;
• for the improvement of animal management or production;
• for the achievement of environmental objectives; or
• for the achievement of educational objectives.

1.2 Projects using animals may be performed only after a decision has been made that they are justified, weighing the scientific or educational value of the projects against the potential effects on the welfare of the animals.

1.3 People who use animals for scientific purposes have an obligation to treat them with respect and to consider their welfare as an essential factor when planning or conducting projects.

1.4 The acquisition, care and use of animals for all scientific purposes in Australia must be in accord with this Code and with Commonwealth, State and Territory legislation.

1.5 People who use animals for scientific purposes have personal responsibility for all matters relating to the welfare of the animals they use.

1.6 Institutions using animals for scientific purposes must establish an AEC to ensure that all animal use conforms to the standards of this Code. Smaller institutions may choose to share an AEC (See Section 2.1.19(iii))

1.7 Investigators and teachers must submit written proposals for all animal projects to an AEC which must take into account the expected value of the knowledge to be gained, the justification for the project, and all ethical and animal welfare aspects taking into consideration the 3Rs.

1.8 Scientific activities must not commence until written approval has been obtained from the AEC.
Replacement

1.9 Techniques which replace or complement the use of animals for scientific purposes must be sought and used wherever possible.

Reduction

1.10 Projects must be scientifically and statistically valid, and must use only the minimum number of animals necessary.

1.11 The principle of reducing the number of animals used should not be implemented at the expense of greater suffering of individual animals.

1.12 Scientific activities involving the use of animals must not be repeated unnecessarily.

1.13 Teaching activities should involve the minimum number of animals required to reach the educational objectives.

Refinement

1.14 Animals must be suitable for the scientific purpose taking into account their biological characteristics including behaviour, genetic constitution and nutritional, microbiological and general health status.

1.15 Wildlife should not be taken from natural habitats unless animals bred in captivity are not available or are not suitable for the specific scientific purpose.

1.16 People who use animals for scientific purposes must employ the best available scientific and educational techniques and be competent in the procedures they perform or must be under the direct supervision of a competent person.

1.17 Projects should be designed to avoid pain or distress to animals. If this is not possible, pain or distress must be minimised.

1.18 Pain and distress cannot be evaluated readily in animals and therefore investigators and teachers must assume that animals experience pain similar to that perceived by humans. Decisions regarding the animal’s welfare must be based on this assumption unless there is evidence to support a different approach.

1.19 An animal with signs of pain or distress not predicted in the proposal, must have the pain or distress alleviated promptly. Alleviation of such pain or distress must take precedence over finishing a project. If prompt alleviation is not possible, the animal must be killed humanely without delay.

1.20 Scientific activities that may cause pain or distress of a kind and degree for which anaesthesia would normally be used in medical or veterinary practice must be carried out using anaesthesia appropriate to the species and the procedure.

1.21 Pain management appropriate to the species, the procedure and the circumstances must be provided.

1.22 Analgesic and tranquilliser usage should at least be consistent with current medical or veterinary practice.

1.23 When anaesthetics or analgesics cannot be used to alleviate pain such as in certain toxicological or animal production studies or in animal models of disease, the end-point of the project must be as early as feasible to avoid or minimise pain or distress to the animals.

1.24 Neuromuscular blocking agents must not be used without appropriate general anaesthesia, except in animals where sensory awareness has been eliminated. If such agents are used, continuous or frequent intermittent monitoring of paralysed animals is essential to ensure that the depth of anaesthesia is adequate to prevent pain or distress.

1.25 Death as an end-point must be avoided whenever possible.

1.26 Scientific activities involving the use of animals must be of minimum duration compatible with the objectives of the project.
1.27 The design and management of animal accommodation should meet species-specific needs where not precluded by the requirements of the project.

1.28 Animals should be transported, housed, fed, watered, handled and used under conditions that meet species specific needs. The welfare of the animals must be a primary consideration in the provision of care which should be based on the behavioural and biological needs of the species.
Section 2: Responsibilities of institutions and their animal ethics committees

2.1 Responsibilities of institutions

2.1.1 Institutions that use animals for scientific purposes must:

(i) implement processes so that the governing body or its delegate is assured of compliance with the Code and relevant legislation;

(ii) establish one or more AECs directly responsible to the governing body of the institution or its delegate. Where there is little use of animals for scientific purposes institutions may consider accessing an external AEC or sharing an AEC with another institution (See 2.2.12);

(iii) address concerns raised by the AEC regarding non-compliance with the Code which may include, upon advise of the AEC, disciplinary action for any person found to have contravened the Code;

(iv) ensure, through the AEC, that all scientific activities involving the use of animals comply with relevant legislation and the Code;

(v) provide each AEC with the resources required to fulfil its terms of reference and operate as set out in Section 2.2, including those for education and orientation of new members, administrative assistance and, where appropriate, the reimbursement of out-of-pocket expenses and/or payment of an honorarium to AEC members;

(vi) conduct an annual review of the operation of their AEC, including an assessment of the AEC’s Annual Report and a meeting with the AEC chair (See 2.2.34);

(vii) seek comment from the AEC(s) on all matters that may affect the welfare of animals used for scientific purposes in the institution, including the building or modification of animal facilities;

(viii) respond promptly and effectively to recommendations from each AEC on matters related to the health and wellbeing of the animals such as housing, care, use and disposal;

(ix) respond promptly and effectively to recommendations from each AEC to ensure that all use of animals for scientific purposes within the institution remains in accord with this Code;

(x) provide all relevant staff with details of the institution’s policy on the care and use of animals, confidentiality, Freedom of Information legislation, legal requirements, privacy policy and commercial considerations;

(xi) provide staff members with information on potential disease hazards from their work with animals;

(xii) establish mechanisms to respond to enquiries or complaints concerning the use of animals within the institution and ensure that staff members and students may voice concerns without jeopardising their employment, careers or coursework;
(xiii) establish and make known procedures for the fair resolution of disagreements between AEC members or between people who use animals for scientific purposes and the AEC (See 2.2.14, 2.2.21 and 2.2.30);

(xiv) ensure that the AEC approves guidelines for animal care and use within the institution and that these are implemented, including those which ensure that emergencies such as fire and power failure are detected promptly and dealt with effectively;

(xv) ensure that there are adequate numbers of appropriately trained and instructed staff to care for the animals; and

(xvi) ensure that appropriate veterinary services are available and that there is access to diagnostic services.

2.1.2 To enable the institution to assess whether the care and use of animals in the institution complies with this Code, an external triennial review should be undertaken. Consideration should be given to making the results of the review publicly available.

2.2 Responsibilities and operation of AECs

The primary responsibility of AECs is to ensure, on behalf of the institution, that all care and use of animals is conducted in compliance with this Code. AECs apply a set of principles, outlined in this Code that govern the ethical conduct of people whose work involves the use of animals for scientific purposes. The role of the AEC is to ensure that the use of animals is justified and provides for the welfare of those animals and incorporates the principles of Replacement, Reduction and Refinement.

Terms of Reference

2.2.1 AECs must have terms of reference which include provisions to:

(i) approve guidelines for the care of animals that are bred, held and used for scientific purposes on behalf of the institution;

(ii) oversee the acquisition, transport, production, housing, care, use and disposal of animals;

(iii) recommend to the institution any measures needed to ensure that the standards of this Code are maintained;

(iv) describe how new members are appointed according to procedures developed by the institution in consultation with the AEC;

(v) require that members declare any conflict of interest;

(vi) deal with situations in which a conflict of interest arises;

(vii) examine and approve subject to modification, or reject written proposals relevant to the use of animals for scientific purposes;

(viii) approve only those studies for which animals are essential and which conform to the requirements of this Code, taking into consideration the balance between impact on the animal(s) and the anticipated scientific or educational value;

(ix) withdraw approval for any project (see 2.2.30);

(x) authorise the treatment or humane killing of any animal;

(xi) examine and comment on all institutional plans and policies which may affect the welfare of animals used for scientific purposes;

(xii) maintain a register of approved projects;

(xiii) comply with the reporting requirements of the institution and this Code (see 2.2.36); and

(xiv) perform all other duties required by this Code.

Membership
2.2.2 An AEC must have a membership which will allow it to fulfil its terms of reference. It must comprise at least four persons, including a separate person appointed to each of the following categories:

*Category A.* A person with qualifications in veterinary science and with experience relevant to the activities of the institution. Veterinarians who lack this experience must familiarise themselves with the biology and clinical characteristics of the species of animals used;

*Category B.* A person with substantial recent experience in the use of animals in scientific or teaching activities;

*Category C.* A person with demonstrable commitment to, and established experience in, furthering the welfare of animals, who is not employed by or otherwise associated with the institution, and who is not involved in the care and use of animals for scientific purposes. Veterinarians with specific animal welfare interest and experience may meet the requirements of this category. While not representing an animal welfare organisation, the person should, where possible, be selected on the basis of active membership of, and nomination by, such an organisation; and

*Category D.* A person who is both independent of the institution and who has never been involved in the use of animals in scientific or teaching activities, either in their employment or beyond their undergraduate education. The Category D member(s) should not fit the requirements of any other category.

2.2.3 A person responsible for the daily care of animals within the institution should have membership of the AEC but this membership is not mandatory.

2.2.4 To assist the AEC to function effectively, institutions may appoint as members, people with skills and background of value to the AEC additional to the four required categories. The AEC may also invite people with specific expertise to provide advice as required.

2.2.5 The Chairperson may or may not hold the position of a Category A to D member. To perform a key role in the successful operation of the AEC, the Chairperson should possess the following attributes:

(i) the ability to bring impartiality to the task;

(ii) the skills to manage the business of the AEC;

(iii) the ability to communicate and negotiate and to resolve conflict;

(iv) an understanding of the ethical and animal welfare issues involved in the use of animals for scientific purposes.

2.2.6 If the committee has more than four members, Categories C plus D should represent no less than one third of the members.

2.2.7 Before appointment, all members of the AEC should acknowledge in writing their acceptance of the terms of reference of the AEC and any requirements for confidentiality required by the institution. The AEC should reach agreement on how advice may be sought without breaching confidentiality.

**Responsibilities of the Chairperson**

2.2.8 The Chairperson must:

(i) ensure that the AEC operates in accordance with the principles and requirements of the Code;

(ii) ensure that the AEC operates in accordance with the relevant policies of the institution;

(iii) ensure that the system for assessment of proposals is both fair to applicants and acceptable to AEC members;

(iv) ensure that breaches of the Code are dealt with fairly and effectively and reported to the institution as appropriate;

(v) advise institutional management regarding the level of resourcing required by the AEC;

(vi) represent the AEC in any negotiations with management; and
oversee all requirements of the AEC to report and review its operation, as outlined in this Code.

Operating procedures

2.2.9 AECs must establish procedures that will enable compliance with the provisions of this Code. In particular such procedures should cover:

(i) the presence at face-to-face meetings of at least one member from each of Categories A, B, C and D to establish a quorum. If more than four AEC members are present, Categories C plus D should represent no less than one third of those responsible for decisions;

(ii) the conduct of quorate AEC meetings in exceptional circumstances where a face-to-face meeting is not possible, for example through the use of video linking or teleconferencing;

(iii) the delegation of authority to inspect sites and monitor projects at remote sites;

(iv) resolution of any conflict of interest which may arise – that is, any situation where a member of an AEC has an interest which may be seen to influence the objectivity of a decision;

(v) approval for the immediate use of animals should they be required for the diagnosis of unexplained and severe disease outbreaks; and

(vi) functions that the AEC is prepared to delegate to an Executive if established.

2.2.10 The AEC may establish an Executive with at least one member from Category C or D which:

(i) may approve minor modifications to projects for review at the next AEC meeting; and

(ii) may not approve new proposals.

2.2.11 Minutes must be maintained which record decisions and other aspects of the AEC’s operation.

2.2.12 Meetings should be held at least quarterly to allow interaction of AEC members and effective functioning of the AEC (See 2.2.1 (ii)).

2.2.13 The process by which decisions are made must be fair to investigators and teachers and acceptable to all AEC members.

2.2.14 Irreconcilable differences between the AEC and an investigator or teacher must be referred to the governing body of the institution for review of due process or conciliation. The ultimate decision of an AEC must not be over-ridden. (see 2.1.1(xiii))

Proposals

2.2.15 Proposals – General

Information provided in proposals must be sufficient to satisfy the AEC that the proposed use of animals is justified, based on whether the scientific or educational value of the project outweighs the potential impact on the welfare of the animals (See 1.2). An essential component of this assessment by the AEC involves consideration of the steps taken by the applicant to comply with the principles of the 3Rs specified in this Code (See Section 1 under Purpose).

It is important that all members of the AEC have sufficient information to participate in the assessment of new applications. This can only be achieved by the use of plain English in the proposal. Applicants must ensure that where the use of scientific language is deemed unavoidable, it is supported by a suitable lay description or a glossary of terms.

2.2.16 Proposals – Detailed

Proposals should contain the following information as appropriate:

<table>
<thead>
<tr>
<th>Information required</th>
<th>Why the information is required</th>
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<tbody>
<tr>
<td>General</td>
<td></td>
</tr>
<tr>
<td>(i) The project title</td>
<td>To set the scene and for filing purposes</td>
</tr>
<tr>
<td>(ii) The names of all personnel involved</td>
<td>To inform the AEC who is responsible for</td>
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<td></td>
<td>with the project, their role and details of the experience and training that qualifies them to perform specific procedures using animals</td>
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<tr>
<td><strong>(iii)</strong></td>
<td>Where the animals will be housed and where the procedures will be performed</td>
</tr>
</tbody>
</table>
| **(iv)** | Potential benefits of the proposed project | A plain English description of:  
- the broad context of the project  
- the aims of the project  
- the expected benefits in:  
  - increasing our understanding of humans or animals  
  - maintaining or improving human or animal health and welfare  
  - improving animal management or production;  
  - achieving educational objectives; or  
  - achieving environmental objectives  
To assist AEC members in understanding the reasons behind the request for approval to use animals and the potential benefits of the project |
| **(v)** | Reduction | A clear description of:  
- the number, species and strain of animals required, broken down into treatment groups where appropriate;  
- reasons why this number is necessary, including skill acquisition or statistical considerations where applicable. The former should include teacher:student and animal:student ratios and the latter may include reference to prior project design or advice from a biometrician;  
- whether the proposal is a repeat of an earlier project and if so, why repetition is necessary.  
AECs and animal users are required by this Code to consider the principle of reduction to minimise the number of animals used for scientific purposes. Excessive use of animals can come about through users overstating the number of animals required to achieve a statistically valid result or requesting too few animals which leads to needless repetition or the failure to attain educational outcomes. |
| **(vi)** | Replacement | Explanation of why animals are needed for the project, including:  
- a description of any possible alternatives to animal use,  
- whether any of the possible alternatives are being used in this project; and  
- why other alternatives are unsuitable for this project.  
AECs and investigators and teachers are required by this Code to consider the principle of replacement of animals with alternative models where possible. Applicants have responsibility for informing AECs about the suitability of alternatives for this project. |
(vii) Refinement – the following suggestions are intended to describe a process which will ultimately lead to refinement of the proposed procedures.

<table>
<thead>
<tr>
<th>Assessment of potential impact on animal</th>
<th>AECs and investigators and teachers are required by this Code to consider the principle of refinement to minimise the impact of the intended project on animals. This can only be achieved if all activities involving animals are described in full.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A step by step description of what happens to each animal from acquisition to disposal, including:</td>
<td></td>
</tr>
<tr>
<td>• source, transport, housing and handling conditions;</td>
<td></td>
</tr>
<tr>
<td>• the timeline from start to finish for individual animals or groups;</td>
<td></td>
</tr>
<tr>
<td>• all administered substances (name, action, route, dose);</td>
<td></td>
</tr>
<tr>
<td>• all procedures carried out on animals;</td>
<td></td>
</tr>
<tr>
<td>• the fate of animals at the completion of the project including the method of euthanasia if applicable;</td>
<td></td>
</tr>
<tr>
<td>• how each aspect of the project may impact on the wellbeing of the animals;</td>
<td></td>
</tr>
<tr>
<td>• any refinements to the procedures that have been included in this proposal to minimise the impact on the animals</td>
<td></td>
</tr>
<tr>
<td>Management of actual impact on animals:</td>
<td></td>
</tr>
<tr>
<td>• how any impact on the animals will be monitored, assessed and managed.</td>
<td></td>
</tr>
</tbody>
</table>

(viii) Monitoring of the animals

<table>
<thead>
<tr>
<th>Details of how the wellbeing of animals will be assessed throughout the project, including:</th>
<th>To inform AECs of the extent to which the monitoring of animals and their care has been considered in the project design.</th>
</tr>
</thead>
<tbody>
<tr>
<td>• method and frequency of routine monitoring of animals;</td>
<td></td>
</tr>
<tr>
<td>• method and frequency of monitoring animals during and after procedures;</td>
<td></td>
</tr>
<tr>
<td>• what will be done if a problem is identified; and</td>
<td></td>
</tr>
<tr>
<td>• names and contact details of personnel responsible for day-to-day monitoring and for dealing with any emergencies.</td>
<td></td>
</tr>
</tbody>
</table>
The investigators and teachers must provide their justification for the use of animals in this project, weighing the benefits of the project against the potential impact on the animals. Particular justification must be given for potentially severe or ethically contentious procedures, for example:

- unrelieved pain and distress including where the planned humane end-points will allow severe adverse effects to occur (See also ?)
- death as the end point(See also ?)
- re-use of animals(See also ?)
- production of monoclonal antibodies by the ascites method (See NHMRC guidelines on Monoclonal Antibodies 2001)
- the use of non-human primates(See NHMRC Policy on the use of Non-Human Primates for Scientific Purposes 2003 pending)

This is the opportunity for the investigator or teacher to present their case for the justification of the proposed project on the basis of the proposed benefits and the potential adverse impacts on the animals described in the proposal. The AEC is then able to decide whether they agree that the project is justified.

Practical considerations to assist AECs and animal carers

(x) Specify any special risks to humans or other animals arising from this work.

Declaration

(xi) The application must include a statement signed by the responsible investigator(s) or teacher(s) stating that they are familiar with, and will comply with, relevant State legislation and the requirements of this Code in relation to the use of animals for scientific purposes.

2.2.17 Where appropriately applied, Standard Operating Procedures (SOPs) can streamline the preparation of proposals by investigators and teachers and their consideration by AECs. Under the following circumstances, it is acceptable to refer to SOPs in proposals:

(i) new SOPs must be approved by the AEC before implementation;
(ii) SOPs must include in the title the date on which they were last approved or reviewed and be reviewed regularly by the AEC at least every three years;
(iii) AEC members must have ready access to copies of all current SOPs;
(iv) investigators and teachers named on a proposal must have the necessary skills to implement an SOP; and
(v) minor variations to an SOP may be acceptable to the AEC. These must be detailed in the proposal.

Assessing proposals

2.2.18 Only those scientific activities which conform to the requirements of all relevant sections of this Code and of legislation may be approved.

2.2.19 Pilot studies should be regarded as integral to the overall project and should be assessed by the AEC according to the usual criteria applied to project approval.

2.2.20 New proposals and the renewal of existing projects, must be considered and approved only at quorate meetings of the AEC.
2.2.21 Decisions by the AEC with regard to approval, modification or rejection of a proposal, or withdrawal of approval for a project, should be made on the basis of consensus. Where consensus cannot be reached after reasonable effort to resolve differences, the AEC should explore with the applicant(s) ways of modifying the project that may lead to consensus. If consensus is still unachievable, the AEC should only proceed to a majority decision following further discussion after the cooling-off period stipulated in the AEC’s operating procedures.

2.2.22 Decisions must be made as promptly as possible.

2.2.23 AECs must advise investigators and teachers of their decisions in writing as promptly as possible. Projects may not commence until written approval has been received.

2.2.24 A register of all applications to the AEC, including the outcomes of the committee’s deliberations, must be maintained.

2.2.25 In determining the duration of approval for individual projects, AECs should take into account the number of years for which the project is funded, any milestones or stages outlined in the project and any Deeds of Agreement between the institution and the funding bodies. Regardless of the duration approved, the continuation of all projects will be subject to review by the AEC of an annual report for the project (see 2.2.37).

**Monitoring of approved projects**

2.2.26 AECs must ensure that detailed records are kept by the responsible investigator or teacher and animal facility management on the acquisition, breeding, health, care, housing, use and disposal of animals to be used for scientific purposes. (See 4.5.8) In general, the animal facility manager would have responsibility for records related to acquisition of animals, their day-to-day care and any breeding programs, while the investigator or teacher would keep records of care and use once animals have been allocated to a project (See 3.1.11). In the absence of an animal facility, the investigator or teacher will be solely responsible for all aspects of animal usage.

2.2.27 Members of the AEC should inspect all animal housing and laboratory areas regularly and record their findings. Records of inspections should include the names of those who attended, observations, any identified problems, follow-up and outcomes. Inspections of fieldwork conducted at extremely remote sites may be performed by an agent or delegate and can be facilitated or corroborated with still or video imaging. (See 2.2.9(iii))

2.2.28 Any projects likely to cause pain or distress, such as the study of pain or responses to physical stress, certain animal models of human diseases or attempts to change behaviour by physical or chemical means, should be subject to early inspection by the AEC as a condition of approval.

2.2.29 The frequency and timing of inspections will be determined by factors such as the number of sites, accessibility of sites, the amount, type and variety of scientific activities and whether inspections can be combined with scheduled AEC meetings. As a guide, AECs should routinely inspect animal holding areas at least annually. Certain projects may necessitate more frequent inspections, even daily for a period.

2.2.30 Where inspections detect activities in breach of the Code, the AEC must ensure that such activity ceases immediately and that remedial action is initiated. The institution and the AEC should prepare written procedures for handling breaches of the Code and any grievances related to the AEC process. These procedures should include a clear indication of where responsibilities lie [see 2.1.1 (xiii)].

2.2.31 Institutions should consider appointing a suitably qualified person with the authority to ensure compliance with both the Code and decisions of the AEC.

2.2.32 On each site where animals are used, including the location where fieldwork is undertaken, the AEC should nominate a person authorised to respond to emergencies including unexpected adverse outcomes. Where possible, this person should be a member of the AEC.

2.2.33 In cases of emergency, before an animal is treated or killed, all reasonable steps must be taken to consult with the responsible investigator or teacher. Any such action must be reported promptly to
the responsible investigator or teacher and the AEC with reasons for the action taken, and confirmed in writing.

2.2.34 Investigators and teachers must inform the AEC when an approved project is completed or discontinued. At that time, the AEC should be provided with a report which details:

(i) whether the stated aims were achieved and, if not an explanation as to why this occurred;
(ii) the number of each species of animal which were approved and used and an explanation of any major discrepancies;
(iii) conclusions as to how procedures in future projects could be modified so as to reduce any impact on animal welfare; and
(iv) details of publications and presentations which have resulted from this project.

2.2.35 Investigators and teachers should promptly notify the AEC of any unexpected or adverse effects which occur during the period of the approved project and which impact on the welfare of the animals.

Annual review of approved projects

2.2.36 Approved projects of long duration and the long-term continuing use of individual animals must be reviewed at least annually by the AEC (See 2.2.1 (xiii).

2.2.37 Investigators and teachers should submit to the AEC annually a written report on approved projects. It should provide a strong basis for the AEC to decide to allow continuation, or discontinuation of the project. It should advise on:

(i) what progress has been achieved;
(ii) the species and total number of each approved for use in the project and the species and numbers used in that part of the project which is the subject of this report;
(iii) reference to any previously reported or unforeseen or adverse impacts on the welfare on the animals, giving details of how they were subsequently managed;
(iv) any other problems that arose, such as equipment failure, and how they were managed;
(v) whether it was necessary to discontinue any elements of the project and why;
(vi) the outcome of any approved modifications in the course of the project with implications for animal welfare;
(vii) any steps being taken to ensure the welfare of individual animals in long-term and continuing use; and
(viii) a list of the locations and dates of repetitive activities for example, in teaching or wildlife projects, where this information was not available at the time of application to the AEC. For each of those locations and dates, the number and type of animals used and where relevant, the number of students and teachers.

Report to institution

2.2.38 The AEC must submit a written report on its activities at least annually to the governing body of the institution, on:

(i) numbers and types of projects approved;
(ii) the physical facilities for the care and use of animals within the institution;
(iii) administrative or other difficulties being experienced; and
(iv) any requirements for training staff.

Projects at more than one institution in Australia

2.2.39 Where projects are to be conducted at more than one institution, procedures must be in place to ensure:

(i) that animals will be well cared for in all phases of the project;
(ii) that the responsible AECs are in a position to inspect the animals at all phases of the project;
(iii) that before any work commences, each AEC approves, or delegates approval of, scientific activities being conducted by members of its institution;

(iv) that clear communication channels are established between all involved AECs and investigators and teachers; and

(v) such arrangements between institutions should be as a formal agreement which ensures that all parties involved are aware of and can meet their respective responsibilities under the requirements of the Code and relevant legislation.

2.2.40 Where parts of a project take place at different institutions, each AEC may choose to approve and monitor only those parts that take place at their institution. Notwithstanding this arrangement, it is essential that each AEC considers the entire proposal to ensure that all aspects of the project can be assessed, including the cumulative impact of procedures on animals. Such arrangements must be part of a formal agreement between the institutions involved.

Non-Institutional applicants and AEC responsibility

2.2.41 AECs may be approached by individuals or organisations who do not have direct access to an institutional AEC, yet require AEC approval before proceeding to use animals for scientific purposes. The AEC must decide on an individual case basis whether it is prepared to assess the application and oversee the project. In such cases, proposals from non-institutional applicants must clearly address the points below in addition to the information normally required (See 2.2.16):

(i) who is liable and responsible for the project;

(ii) how the impact of the project on the animals will be monitored and by whom; and

(iii) the qualifications and experience of the applicant(s).

2.2.42 Arrangements between an institutional AEC and non-institutional applicants must be as a formal agreement between the institution and the applicants and should enable the institution to withdraw from this agreement if the non-institutional applicant fails to comply with the directions of the AEC.
Section 3: Responsibilities of investigators and teachers

3.1 General

3.1.1 Investigators and teachers have direct and ultimate responsibility for all matters related to the welfare of their animals and must act in accordance with all requirements of this Code. This responsibility begins when the animal is allocated to the approved project and ends at the time of disposal of the animal.

3.1.2 In order to ensure the welfare of animals used in their projects, investigators and teachers must ensure that the level of supervision of people involved in the care and management of the animals in their projects takes into account the levels of competence of each person and the responsibilities they are given.

3.1.3 Before any scientific activities involving the use of animals begins, investigators and teachers must submit a proposal to the AEC which complies with Clauses 2.2.15 and 2.2.16 of this Code, and which indicates that the design of the projects complies with the Code and relevant legislation.

3.1.4 Investigators and teachers must not begin a scientific or teaching activity involving the use of animals before written AEC approval is obtained, and must adhere to all requirements of the AEC.

3.1.5 When seeking approval for a project, investigators and teachers must inform the relevant AEC of other scientific and teaching institutions relevant to the project (See also 2.2.39).

3.1.6 Investigators and teachers must notify their institutional AEC in writing when seeking approval to participate in scientific activities at another institution through that institution’s AEC.

3.1.7 Investigators and teachers must make arrangements for contacting them and other responsible persons in the event of emergencies.

3.1.8 In choosing animals investigators and teachers must ensure that the choice of species is appropriate for the scientific purpose. Requirements for known genetic constitution; freedom from specific diseases; documented health, nutritional and environmental histories and other relevant factors should be taken into account.

3.1.9 Investigators and teachers must ensure that records of the use and monitoring of animals used for scientific purposes are maintained. Under a particular AEC approval, records should include the origin and fate of issued animals, details of how animal welfare was assessed and any unexpected negative impact on animal wellbeing and notation of procedures. The AEC should advise investigators and teachers of any additional information to be recorded. These records should be available for audit.

3.1.10 When privately-owned animals such as livestock or companion animals are to be used for a scientific purpose and when the owner, their staff or other people retain day-to-day responsibility for the treatment, care and welfare of those animals, the details and duration of the specific responsibilities of the investigator or teacher and the owner must be clearly set out in the proposal.

3.1.11 Investigators and teachers must make such reports to the AEC as requested including, prompt notification of any adverse or unexpected effects which impact on the animal’s wellbeing (2.2.35),
advice when a project is completed or discontinued (2.2.34) and the information required for annual review of on-going projects (2.2.37).

3.2 Planning projects

3.2.1 Before submitting a proposal to the AEC, investigators and teachers must consider the following questions during the planning stages of a project (see 2.2.16 and 2.2.17):

(i) Do the potential benefits outweigh any ethical concerns about the impact on animal welfare?
(ii) Can the aims be achieved without using animals?
(iii) Has the most appropriate species of animal been selected?
(iv) Is the biological status (genetic, nutritional, microbiological, general health) of the animals appropriate?
(v) Are suitable animal holding facilities, equipment and staff available?
(vi) Have all involved staff been informed of the planned procedures?
(vii) Do these staff have the skills and experience to perform these procedures?
(viii) Are the environmental conditions (including type of enclosure, noise, photoperiod, temperature, humidity, ventilation, density of housing, and social structures) appropriate?
(ix) Are the studies designed so that statistically valid results can be obtained or educational objectives achieved using the minimum number of animals?
(x) If the potential impact on the animal of a new procedure is unknown, is it appropriate to incorporate a pilot study into the project design to allow a staged assessment of the impact on animal welfare and how it will be managed? Pilot studies should be regarded as integral to the overall project and should be assessed by the AEC according to the usual criteria applied to project approval.
(xi) Will any aspects of the project adversely impact on the wellbeing of animals and if so what will be done to minimise or avoid this?
(xii) What arrangements will be made for the regular assessment of the animals’ welfare?
(xiii) Have any of the studies been performed previously? If so, why should they be repeated?
(xiv) Are permits required for the importation, capture, use, destruction or release of the animals?

3.2.2 When the biological status of animals must conform to defined requirements, investigators and teachers must ensure that the supplier can provide documentation of biological status. Where relevant, species and individual animals should be chosen on the basis that the proposed studies will result in the least pain or distress. In making this decision, investigators and teachers should consider all aspects of the biological nature of the animals, including their behavioural characteristics and their cognitive development.

3.3 Conduct of studies

General considerations

Detecting signs of pain or distress

3.3.1 Investigators and teachers should be familiar with the normal behaviour of the animal species chosen and knowledgeable about signs of pain or distress specific to that species and must assess their animals regularly for these signs.
3.3.2 Animals must be observed for deviations from normal behavioural patterns which are often the first indications that animals are experiencing pain or distress. Changes in patterns of sleeping, feeding, drinking, grooming, exploratory behaviour, performance in learning or discriminatory tasks, reproduction or social behaviour should be noted and recorded.

3.3.3 Animals must be regularly assessed for clinical signs of pain or distress. These may include one or more of the following: aggressive or abnormal behaviour (some species may become unduly submissive), abnormal stance or movements, abnormal sounds, altered cardiovascular or respiratory function, abnormal appetite, rapid decline in body weight, altered body temperature, vomiting and abnormal defecation or urination. Indicators of sustained pain or distress may include loss of body weight, failure to thrive, impaired reproductive ability and reduced resistance to disease.

Limiting pain and distress

3.3.4 Pain and distress cannot be evaluated readily in animals and therefore investigators and teachers must assume that animals experience pain similar to that perceived by humans. Decisions regarding the animal’s welfare must be based on this assumption unless there is evidence to support a different approach.

3.3.5 The investigator or teacher must anticipate, and take all possible steps to avoid or minimise, pain and distress including:

(i) choosing the most humane method for the conduct of the project;
(ii) ensuring the technical skills and competence of all persons involved in animal care and use;
(iii) checking and assessing animals regularly for evidence of pain or distress throughout the course of the project;
(iv) acting promptly to alleviate pain or distress;
(v) using anaesthetic, analgesic and tranquillising agents appropriate to the species and the scientific or educational aims;
(vi) determining criteria for withdrawal of animals from the project including humane endpoints;
(vii) conducting studies over the shortest time practicable; and
(viii) using appropriate methods of euthanasia.

3.3.6 The use of local or general anaesthetics, analgesics or tranquillisers must be appropriate to the species, and should at least parallel their use in current medical or veterinary practice.

3.3.7 Scientific activities that are liable to cause pain of a kind and degree for which anaesthesia would normally be used in medical or veterinary practice must be carried out under anaesthesia.

3.3.8 Distress can sometimes be avoided or minimised by non-pharmacological means. Before commencing a project, investigators and teachers should condition animals to the project environment and procedures and the staff involved with the project. During and after procedures, animals must be nursed in a way that minimises pain or distress and promotes their welfare.

3.3.9 If animals develop signs of severe pain or distress despite the precautions outlined above, the pain or distress must be alleviated promptly or they must be killed humanely and without delay. Alleviation of such pain or distress must take precedence over continuing or finishing the study.

Repeated use of animals for scientific purposes

3.3.10 Individual animals must not be used in more than one study either in the same or different projects without the express approval of the AEC. When considering approval for the re-use of animals, the AEC must take into account:

(i) pain or distress and any potential long-term effects caused by any previous procedure;
(ii) the total time that the animal will be used;
(iii) the pain or distress likely to be caused by the next and subsequent procedures, examples of which may be dietary modifications, taking a series of blood samples and non-invasive recording procedures; and
(iv) that the animals have recovered fully from the previous project before being used in the next.

**Duration of scientific activities**

3.3.11 Scientific activities, particularly those that cause any pain or distress, should be as brief as practicable. AEC approval must be sought for the continued long-term use of individual animals. The decision to continue must be based on the clinical well-being of the animal and the absence of aversion to the situation.

**Handling and restraining animals**

3.3.12 Animals must be handled only by persons instructed and competent in methods which avoid pain or distress.

3.3.13 When the use of restraint devices appropriate to the animal is necessary for the welfare of the animal and the safety of the handler, it should be for the minimum period required to accomplish the purpose of the project.

3.3.14 Tranquillisers or anaesthetics may aid restraint but may prolong recovery from the procedure. When these agents have been used, greater attention may be required in assessing the recovery of the animals.

3.3.15 Where animals are necessarily restrained for long periods, consideration must be given to their biological, including behavioural, needs and they must be assessed regularly by a veterinarian or other qualified person not otherwise involved in the project. If any negative impact on animal welfare is detected, the animal must be removed from the restraint or the method of restraint must be modified to minimise the impact.

**Completion of projects**

3.3.16 Upon completion of the project, animals must be returned promptly to normal husbandry conditions or their natural habitat if appropriate and permitted, or killed humanely.

**Humane killing of animals**

3.3.17 When it is necessary to kill an animal, humane procedures must be used. These procedures must avoid pain or distress, be reliable and produce rapid loss of consciousness until death occurs.

3.3.18 The procedures must only be performed by persons approved as competent by the AEC, or under the direct supervision of a competent person.

3.3.19 Animals should be killed in a quiet, clean environment, away from other animals where possible. Death must be established before disposal of the carcass.

3.3.20 Where practicable, tissue from animals being killed should be shared among investigators and teachers.

3.3.21 Dependent neonates of animals being killed must also be killed or provision made for their care.

3.3.22 Procedures for the disposal of fertilised eggs must ensure the death of the embryo.

**Autopsy**

3.3.23 Autopsy should be performed when animals die unexpectedly.

**Surgery**

3.3.24 For any surgical procedure a pain management plan appropriate for the procedures and the species, must be developed and implemented and reviewed as necessary.
3.3.25 Surgery must only be performed by staff approved as competent by the AEC with appropriate training and experience. Instruction in surgical or anaesthetic techniques must be under the direct and constant supervision of such persons.

3.3.26 Surgical procedures must be carried out under appropriate local or general anaesthesia. The depth of anaesthesia must be assessed by means that will detect side effects such as hypothermia, and cardiovascular and respiratory depression.

3.3.26 The choice and administration of anaesthetic, analgesic and tranquillising agents must be suitable for the species, appropriate for the purpose of the study and these agents must be used within the context of the pain management plan.

3.3.28 When more than one surgical procedure is to be performed on an individual animal, the time between each procedure must allow a recovery to good general health. (See 3.3.10, 3.3.11)

3.3.29 For non-recovery surgery, the animal must remain unconscious throughout the procedure.

3.3.30 When the animal is to recover from the anaesthetic, surgical procedures must conform to accepted standards in human and veterinary practice. Analgesics and tranquillisers must be used when required and their use should at least be consistent with current medical and veterinary practice.

Post-operative care

3.3.31 The comfort of animals must be promoted throughout the post-operative period. Attention should be given to warmth, hygiene, fluid and food intake, and control of infection. The use of analgesics and tranquillisers may be needed to minimise post-operative pain or distress. Care should be taken to minimise injury to animals recovering from anaesthesia through their uncoordinated movements or from attack by other animals in the same enclosure.

3.3.32 Clinical records of the animal’s state must be kept and made accessible to all staff involved in the post-operative care of the animal.

3.3.33 Investigators and teachers must ensure that the welfare of post-operative animals is assessed as a basis for their appropriate treatment and care and must be fully informed of the animals’ condition.

3.3.34 The duties of all staff must be clearly defined and ways of dealing with post-operative emergencies or unexpected increases in pain or distress of post-operative animals must be established.

3.3.35 Any post-operative animal observed to be in a state of severe pain or distress which cannot be alleviated quickly must be killed humanely without delay.

3.3.36 Surgical wounds must be inspected regularly for the progress of healing and any problems must be attended to immediately.

Implanted devices

3.3.37 Skilled and specialised attention is required in the care of animals following an operation in which recording or sampling devices have been implanted, or a fistula created. Animals should be assessed frequently for signs of pain or distress or infection and treated immediately where signs occur.

Neuromuscular paralysis

3.3.38 Neuromuscular blocking agents may only be used with adequate general anaesthesia or an appropriate surgical procedure which eliminates sensory awareness. Immobilisation of an animal solely with a neuromuscular blocking agent is not acceptable. When these agents are used with an anaesthetic, special care must be taken to ensure the maintenance of an adequate plane of anaesthesia. Since criteria such as the character of respiration and corneal and flexor withdrawal reflexes cannot be used, continuous or frequent intermittent monitoring of physiological variables such as heart rate, blood pressure, pupil size and the electroencephalogram is necessary, together with the effects on these of mild sensory stimuli. Care is required to ensure that drugs used during procedures do not interfere with assessment of the depth of anaesthesia.

Electroimmobilisation

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Draft Australian code of practice for the care and use of animals for scientific purposes

March 2003
3.3.39 Electroimmobilisation must not be used as an alternative to analgesia or anaesthesia. It should not be used for restraint unless there is published evidence showing that electroimmobilisation causes less distress than traditional methods.

Animal models of disease

3.3.40 The scientific validity of animal models of human disease rests in part on how closely a given model resembles a particular disease, which may include the animals experiencing the attendant pain or distress of the human disease state. Investigators and teachers must take steps to minimise such pain or distress. The use of painful, distressful or lingering death as an end-point in these studies must be avoided wherever possible.

Modifying animal behaviour

3.3.41 Positive reinforcement is the preferred procedure to motivate an animal to modify its behaviour or to perform specific tasks, but in some cases the inducement may need to be some form of biological stress in which case it must be as mild as possible. Severe deprivation of water, food, social interaction or sensory stimuli must not be used. Painful or noxious stimuli should be avoided. If their use is necessary, then the level and duration of the stimulus must be minimised and escape from the stimulus must be available. (See 3.3.72)

Toxicological studies

3.3.42 The end-point of toxicological studies must be as early as is compatible with reliable assessment of toxicity, and must minimise the extent of any pain or distress.

3.3.43 Investigators and teachers must not allow the painful or distressful or lingering death of animals unless no other end-point is feasible and the goals of the project are the prevention, alleviation, or cure of a life-threatening disease or situation in humans or animals.

3.3.44 When death as the end-point is unavoidable, the project must be designed to result in the deaths of as few animals as possible.

Scientific activities involving hazards to humans or other animals

3.3.45 Hazards may arise from sources including viruses, bacteria, fungi, parasites, radiation, radioactivity, corrosive substances, toxins, allergens, carcinogens, recombinant DNA, anaesthetic gases and physical injuries.

3.3.46 Any potential pathogenic effects of these hazards when used in studies must be explained as far as possible to all staff. Tests before, during and after the project may be required for staff.

3.3.47 The AEC should require evidence that the institution’s biosafety committee has been consulted and that appropriate measures for containment, disposal and decontamination of biohazardous material have been established.

3.3.48 Procedures for quarantining animals administered infectious organisms should take into account risks to other animals and to people.

3.3.49 Regarding the end-point of studies involving hazardous agents, 3.3.43 to 3.3.45 apply.

Animal welfare and animal health research

3.3.50 When studying ways of improving the health or welfare of animals, investigators and teachers may need to replicate the problem, such as injury, trauma, nutritional disorder, physical exertion, disease or environmental stress. Thus, the attendant pain or distress may also be replicated. When such studies are necessary, the investigator or teacher must ensure that:

(i) the principal aim of the project is to improve animal welfare or health;

(ii) the outcome of the project cannot be achieved by alternative methods;
(iii) all possible steps are taken to minimise any pain or distress; and
(iv) the end-point of studies conforms to the requirements for toxicological studies (Refer to Clauses 3.3.43, 3.3.44 and 3.3.45).

Genetic modification of animals

3.3.51 All work involving the introduction of foreign DNA into mammalian cells or whole animals must be conducted in accordance with any requirements of the Office of the Gene Technology Regulator and the relevant biosafety committee of the institution.

3.3.52 Application must be made to the AEC for the production of a new strain or hybrid of GM animal to allow the AEC to consider the potential impact on the animal of introducing a new gene or altering the expression of existing genes, and the reason for creating the GM animal.

3.3.53 In the proposal, the investigator or teacher must inform the AEC of any potential side effects of genetic manipulation that may have a negative impact on the welfare of the parent animal or their offspring and of the means that will be used to deal with such eventualities.

3.3.54 Proposals for the creation of GM animals which are expected to suffer pain or distress must define any special needs and give details of specialist care that will be provided to minimise such pain or distress. Humane endpoints must also be defined.

3.3.55 The breeding procedures used to establish a GM animal colony, either from newly-created GM animals or those from an outside source, should be considered as a scientific purpose, at least until detailed information regarding the phenotype of the animals and any adverse side effects of the genetic manipulation have been documented by the investigator or teacher and forwarded to the AEC.

3.3.56 The clinical status of GM animals may deviate unexpectedly from the predictions made in the application to the AEC. Investigators and teachers must assess through detailed monitoring the welfare and genetic stability of newly-created GM animals and their offspring across a number of generations and forward a summary of their observations to the AEC.

3.3.57 For projects involving the creation or use of genetically modified animals, records of the number of animals bred to support that project must be maintained by the animals facility or the investigator or teacher.

3.3.58 Invasive procedures used to determine the genotype of transgenic animals, such as tail cutting of mice, must be performed by, or closely supervised by, experienced practitioners. Proposals should identify who will perform these procedures and include details of their experience. The method for the collection of tissue for genotyping of animals may be approved by the AEC in the form of an SOP (see 2.2.17)

Cloning of animals

3.3.59 Cloned animals may or may not be genetically modified.

3.3.60 Clauses 3.3.54-3.3.60 should be taken into account when projects involving the cloning of animals are considered.

Induction of neoplasia

3.3.61 The site for induction of tumors (neoplasia) must be chosen carefully. Subcutaneous, intradermal and flank sites should be chosen when possible. Footpad, brain and eye sites must not be chosen unless there is no alternative.

3.3.62 Investigators and teachers must monitor their animals closely for signs of pain or distress, especially sudden changes in body weight.

3.3.63 Animals with induced tumors must be killed humanely before predictable death occurs, cachexia becomes advanced, or the tumor becomes large enough to cause ulceration or severely limit normal behaviour.
3.3.64 In vitro methods should be used for the routine production of monoclonal antibodies in the scale-up phase (see the NHMRC Guidelines on Monoclonal Antibody Production 2001). Applications for use of the ascites method must be supported by strong evidence of why in vitro methods cannot be used. With ascitic tumors, including hybridomas, investigators must ensure that the animals are not distressed by excessive abdominal distension caused by fluid accumulation or growth of solid tumors, or by excessive loss of body weight, which may be difficult to discern due to overall weight gain from ascites fluid accumulation or growth of solid tumors.

3.3.65 In tumor therapy studies, end-points compatible with reliable assessment of the therapy must be as early as possible. Weight changes must be monitored closely. Death from the tumor must not be an end-point.

Lesions of the central nervous system

3.3.66 Projects involving anatomical or chemical lesions of the central nervous system demand special consideration when the lesion produces loss or impairment of limb or trunk movements, loss of sensibility to touch, temperature or pain, impairment of the animal’s awareness of its surroundings or impairment of appetite or thirst. Special animal care, caging and other facilities may be needed.

Withholding food or water

3.3.67 Projects involving the withholding or severe restriction of food or water must be designed to produce no continuing detrimental effect on the animal. In these studies, the changes in fluid balance or body weight must be monitored, recorded and maintained within the limits approved by the AEC.

Fetal experimentation

3.3.68 When fetal experimentation or surgery compromises the ability of the neonate to survive or there will be unrelievable pain or distress, it must be killed humanely before or immediately following birth.

3.3.69 Investigators and teachers must assume that fetuses have the same requirements for anaesthesia and analgesia as adult animals of the species, unless there is specific evidence to the contrary.

3.3.70 During surgery to the mother, consideration must be given to any special requirements for anaesthesia of the fetus.

3.3.71 Eggs must be destroyed before hatching, unless hatching is a requirement of the project.

Research on pain mechanisms and the relief of pain

3.3.72 If unanaesthetised animals are to be subjected to stimuli designed to produce pain, investigators and teachers must:

(i) attempt to limit pain to levels below those that would be expected to cause distress to humans;

(ii) ensure that the animals are exposed to the minimum pain necessary for the purpose of the procedure; and

(iii) provide treatment for the relief of pain or when possible allow self-administration of analgesics or escape from repetitive, painful stimuli.
Section 4: Acquisition and care of animals in breeding and holding areas

Animals should be obtained from breeding and supply facilities which maintain conditions consistent with this Code or relevant industry Code.

4.1 Animals obtained from interstate or overseas

It is the responsibility of the investigator or teacher to consult the relevant State and Territory authorities to ensure compliance with all requirements governing the import, capture, handling and transport of animals and to include details of this in the proposal. Some requirements are listed below. It should be noted that this list is not comprehensive.

4.1.1 Under quarantine and fauna laws and formal agreements, the Commonwealth and individual States and Territories regulate the movement of animals or animal tissues into Australia and across State and Territory borders within Australia.

4.1.2 A Certificate of Health, normally issued by State or Territory Departments of Agriculture or their equivalent, may be required to accompany animals travelling interstate.

4.1.3 For native fauna, the appropriate State or Territory fauna authority may require certification that animals will be taken legally.

4.1.4 Permits must be obtained from Environment Australia for the importation of live animals, except for those species which are specifically exempt. The Australian Quarantine and Inspection Service (AQIS) should also be contacted.

4.1.5 Permits must be obtained from Environment Australia for the export of all specimens of native Australian fauna, whether alive or dead. Prior approval is also required from Environment Australia for export of some animal species not native to Australia (eg non-human primates).

4.2 Transport of animals

4.2.1 Transportation can cause animals distress due to confinement, movement, noise and changes in the environment and personnel.

4.2.2 The extent of any distress will depend on the animals’ health, temperament, species, age, sex, the number travelling together and their social relationships, the period without food or water, the duration, the mode of transport, environmental conditions, particularly extremes of temperature, and the care given during the journey.

4.2.3 The conditions and duration of the transport must ensure that the impact on animal health and welfare is minimal.

4.2.4 Containers must be escape- and tamper-proof. There must be adequate nesting or bedding material and animals must be protected from sudden movements and extremes of climate.

4.2.5 Food and water must be provided when necessary.

4.2.6 Transport by air should be in accord with IATA regulations and domestic transport of livestock must be in accord with the relevant Codes of Practice (see Information Sources).
4.27 Both the suppliers and recipients of animals must ensure that there are satisfactory delivery procedures, with animals received by a responsible person.

4.3 Admission of new animals into holding areas

4.3.1 When new animals are being admitted into animal holding areas, they should be quarantined and inspected by a qualified person. Their health should be evaluated and treatment instigated if required. The suitability of the animals for the projects in which they are to be used should be assessed.

4.3.2 Animals should be acclimatised to the holding facility and staff before their use in a project and those which do not adapt satisfactorily should not be kept.

4.4 Care of animals in holding and production facilities

4.4.1 Facilities are defined as the yards, paddocks or buildings in which animals are kept.

4.4.2 Investigators and teachers, AECs and the institutions must ensure that facilities are appropriately staffed, designed, constructed, equipped and maintained to achieve a high standard of animal care and fulfil scientific requirements.

4.4.3 The design and management of facilities will depend on the type of animals to be kept and the studies to be undertaken. The overall condition and management of facilities must be compatible with maintaining the good health and wellbeing of the animals.

Outdoor holding areas

4.4.4 Outdoor holding areas must meet the needs of the species, including access to adequate shelter, food and water protection from predation, and their behavioural and social requirements.

Indoor housing

4.4.5 Buildings should be compatible with the needs of the animals to be housed and the projects in which they are used.

4.4.6 Buildings should be designed and operated to control environmental factors appropriately, to exclude vermin and to limit contamination associated with the keeping of animals, the delivery of food, water and bedding, and the entry of people and other animals.

4.4.7 Buildings must be maintained in good repair. Walls and floors should be constructed of durable materials that can be cleaned and disinfected readily.

4.4.8 Buildings must be kept clean and tidy.

4.4.9 There must be adequate storage areas for food and equipment.

4.4.10 The choice of detergents, disinfectants, deodorants and pesticides must avoid contamination of the animals' environment and should be made in consultation with investigators and teachers.

4.4.11 There should be a reticulated water supply and proper facilities for drainage, if appropriate.

4.4.12 There must be suitable plans to cover such emergencies as the breakdown of lighting, heating or cooling.

4.4.13 Precautions should be taken to prevent the entry of unauthorised persons.

Environmental factors

4.4.14 Animals must be provided with environmental conditions which suit their behavioural and biological needs unless other conditions are approved by the AEC for a particular project.

4.4.15 Air exchange, temperature, humidity, light and noise should be maintained within limits compatible with the health and well-being of the animals.
4.4.16 Effective ventilation is essential for the comfort of animals and the control of temperature, humidity, and odours. Ventilation systems should distribute air uniformly and achieve adequate air exchange.

4.4.17 Noxious odours, particularly ammonia, must be kept to a level compatible with the health and comfort of the animals and staff. The adequacy of the ventilation system, the design, construction and placement of cages and containers, population densities both within cages and within a room, the effectiveness of the cleaning and the frequency of bedding changes, will all influence the level of noxious gases. Attention should be given to the balance between the need for cleanliness and the potential impact of cleaning procedures on the animals.

4.4.18 Environmental factors potentially affect the welfare of the animals and may affect the results of scientific activities. Investigators and teachers should be informed in advance of planned changes to the environmental conditions of their animals.

Food and water

4.4.19 Animals must receive appropriate, uncontaminated and nutritionally-adequate food of a quantity and composition that maintains normal growth of immature animals or normal weight of adult animals as well as the requirements of pregnancy or lactation.

4.4.20 Where possible, animals should be given variety in the composition and presentation of food suitable for the species. Uneaten perishable food should be removed promptly unless contrary to the needs of the species.

4.4.21 Clean, fresh drinking water should be available constantly as suitable for the species.

4.4.22 Variations to these requirements as part of a project must receive prior AEC approval.

Pens, cages and containers and the immediate environments of the animals

4.4.23 Animal accommodation should be designed and managed to meet species-specific needs. Pens, cages and containers should ensure the comfort and well-being of the animals. The AEC may take into account that commercial consideration necessary for a project may mean that species-specific needs may not always be met. In addition, the following factors should be taken into account:

(i) species-specific behavioural requirements, including the availability and design of space to enable free movement and activity, sleeping, privacy, contact with others of the same species, and environmental enrichment;

(ii) provision of single housing for animals when it is appropriate for the species and if necessary for the purpose of the project, eg during recovery from surgery or collection of samples;

(iii) species-specific environmental requirements such as lighting, temperature, air quality, appropriate day/night cycles and protection from excessive noise and vibrations;

(iv) the need to provide ready access to food and water;

(v) the need to clean the pen, cage or container;

(vi) protection from spread of pests and disease;

(vii) requirements of the project; and

(viii) the need to observe the animals readily.

4.4.24 Pens, cages and containers must:

(i) be constructed of durable, impervious materials;

(ii) be kept clean;

(iii) be maintained in good repair;

(iv) be escape-proof;

(v) protect the animals from climatic extremes;
(vi) not cause injury to the animals;
(vii) be large enough for the species and the number of animals held; and
(viii) be compatible with the behavioural needs of the species.

4.4.25 The number of animals in cages, pens or containers and the placement of these in rooms must enable social and environmental conditions for the species to be maintained. Where it is necessary to house individually animals of a species that normally exists in social groups, the impact and time of social isolation should be kept to a minimum.

4.4.26 Bedding and litter must be provided if appropriate to the species and should be comfortable, absorbent, safe, non-toxic, able to be sterilised if needed, and suitable for the particular scientific or educational aims. Pregnant animals must be provided with nesting materials where appropriate.

4.4.27 The AEC, investigators and teachers should be informed in advance of planned changes to these conditions, since these may affect the welfare of the animals and the results of the scientific and teaching activities.

4.5 Management and staff

Person-in-charge

4.5.1 Animal acquisition, breeding and holding facilities must be supervised by persons with appropriate veterinary or animal care qualifications or experience.

4.5.2 The person-in-charge should be responsible for:
(i) the management of the day-to-day care of the animals in holding and breeding facilities;
(ii) supervising the work of other staff in the facility; and
(iii) liaising between investigators and teachers and facility staff.

4.5.3 The person-in-charge should be knowledgeable about signs of pain, distress and illness specific to each species housed and should ensure that the well-being of all animals is regularly checked by staff. After animals are allocated to an approved project the investigator or teacher has primary responsibility for ensuring adequate monitoring of the animals’ well-being.

4.5.4 The person-in-charge must ensure that ill or injured animals which are not assigned to approved projects are treated promptly and that animals which die unexpectedly are subjected to autopsy.

4.5.5 The person-in-charge should contribute to the development and maintenance of the institution’s animal care policies and procedures.

4.5.6 The person-in-charge must ensure that staff receive appropriate protective clothing, maintain high standards of personal hygiene, do not eat, drink or smoke in animal areas, and have all required vaccinations, particularly against tetanus and other zoonoses.

4.5.7 The person-in-charge must establish written procedures for use in the management of holding and breeding facilities. These procedures should be submitted to the AEC for approval. They should take into account the requirements of the species held, the studies being conducted and the health and safety of the staff. and include:
(i) transport, quarantine and disposal of animals;
(ii) routine husbandry;
(iii) prevention, diagnosis and treatment of disease;
(iv) assessment of health status and genetic constitution of the different species; and
(v) physical environmental factors.

These procedures should be made known to all staff involved in the care and use of the animals and should be reviewed regularly.
4.5.8 The person-in-charge must maintain adequate records to allow the effective management of the colonies, including the detection of the origin and spread of disease. Records must include:

(i) the source, care, allocation, movement between locations, use and disposal of all animals;
(ii) details of any diseases;
(iii) the fertility, fecundity, morbidity and mortality in breeding colonies; and
(iv) when required, the health status, genetic constitution and the physical environment of the animals.

4.5.9 Records maintained by the person-in-charge must be made available to investigators and teachers.

4.5.10 The person-in-charge should ensure that investigators and teachers are informed of any changes to the conditions under which animals are held and which may affect the results of their studies.

Staff

4.5.11 The most important factor contributing to high standards of animal care is the number of well-trained, committed staff. Personnel working with animals in a holding facility should be instructed in the detailed care and maintenance of those animals, how they may affect the animals’ well-being and how their actions may affect the outcome of scientific activities.

4.5.12 Institutions should encourage and promote formal training in animal science or technology.

4.5.13 Personnel employed in the care of animals should be instructed in how to recognise at an early stage changes in animal behaviour, performance and appearance.

4.5.14 New appointees who will care for animals must be appropriately instructed in their duties and in institutional policy.

4.5.15 Staff should be informed of the important zoonotic diseases of animals under their care and of precautions that should be taken. Regular health checks of staff who handle animals are recommended in the interests of both staff and animals.

4.6 Routine husbandry procedures

4.6.1 Husbandry procedures which are not part of an approved project (e.g. clipping coats and nails, vaccinations) must be performed by competent personnel.

4.6.2 Routine husbandry procedures on livestock should be carried out in accordance with relevant Codes of Practice and legislation.

4.6.2 In general, the procedures applied to the maintenance of breeding colonies and supply of animals are viewed as routine husbandry. When special breeding requirements are integral to a research or teaching project such as in the creation of a new strain of GM animal, then procedures applicable to breeding must be regarded as part of the project and should be included in the application to the AEC.

4.7 Identification of animals

4.7.1 Animals must be identifiable, whether individually or in groups. Where possible, animals should be identified by the attachment of a label to the cage, container, pen, yard or paddock in which they are kept. Otherwise, identification of individual animals may require a tattoo, neckband, individual tag, electronic numbering device such as a microchip or a physical mark. It is essential that the more invasive procedures be performed by, or be closely supervised by, experienced practitioners. The method chosen should be the most appropriate for the species and that which will result in the least pain or distress.

4.7.2 The person-in-charge of the facility is responsible for ensuring that animals are identified before allocation to an approved project, after which time the investigator or teacher is responsible.
4.8 Disposal of animal carcasses and waste

4.8.1 Prompt and sanitary disposal of animal carcases and waste material must be in accordance with any Commonwealth, State or Territory legislation, local council by-laws and community standards.
Section 5: Wildlife studies

Section 5 makes particular reference to free-living vertebrates and those captured from free-living populations, including native, non-indigenous and vertebrate pest species. It should be read in conjunction with the rest of this Code.

All scientific activities involving wildlife require AEC approval.

5.1 Wildlife from natural habitats

5.1.1 Many species of wildlife are protected by State laws. Officers of State and Territory conservation authorities must be consulted when these species are required. Permits incorporating conditions are usually necessary to collect, keep, release and kill protected fauna, and to import or export such species between States.

5.1.2 Observational studies of free-living animals must be designed to minimise any impact on animal wellbeing of interfering with their normal behaviour, particularly if they are rearing young.

5.1.3 Animals should not be taken from natural habitats unless animals bred in captivity are unavailable or unsuitable for the scientific purpose.

5.1.4 Investigators and teachers must recognise that field studies may cause disturbance to the habitat and adversely affect the resources available to both target and non-target species. Efforts must be made before and during the project to minimise such potential disturbance.

5.1.5 Studies must not be repeated unnecessarily. Where repeated studies are proposed, AECs must decide whether repetition is necessary for enhancing the understanding and management of the species or ecosystem.

5.1.6 Re-use of individual animals requires AEC approval (see clause 3.3.10). However, the nature of wildlife field studies may result in the recapture of individual animals. AECs must be made aware of this possibility by the investigator or teacher.

5.1.7 The capture, holding, transport, handling and release of animals from their natural habitat must be in accordance with the following:

(i) investigators and teachers must be aware that the effects of a series of stressors, such as trapping, handling, transportation, sedation, anaesthesia, marking and sampling can be cumulative;

(ii) an assessment of the potential sources of stress and how they will be eliminated or minimised must form part of the proposal; and

(iii) all materials and equipment used in the capture, holding, transport and manipulation of animals must be cleaned and maintained in a way that minimises the assessed risk of disease transmission.

5.2 Capture of wildlife

General

5.2.1 As capture is stressful to animals, alternatives to capture should be considered. Steps must be taken to minimise any distress caused to the captured animals and to the populations from which they are taken. The following conditions apply to capture:
(i) there must be careful choice of suitable capture techniques;
(ii) personnel must be skilled in the capture techniques;
(iii) if animals are to be retained after capture, they must be provided with safe enclosures or
caging suitable for the species; and
(iv) the wellbeing of the animals must be protected by regular assessment of signs of distress and
remedial action as necessary.

5.2.2 For catching and killing fish, practices that ensure a rapid loss of consciousness should be used
wherever possible

Use of traps

5.2.3 If capture is to be by trapping, the proposal must include details of the suitability of the trapping
technique for the species and how the traps will be managed to minimise the impact on both target
and non-target species, taking into account issues such as:
(i) the time animals will spend in the traps;
(ii) protection of animals from predators or parasites;
(iii) protection from environmental effects such as dehydration, hyperthermia, hypothermia and
drowning;
(iv) deprivation of food and water;
(v) potential for impact via disruption of social structure;
(vi) potential for impact on dependent young;
(vii) deactivation of traps when not in use or no longer required;
(viii) size of trap;
(ix) construction of trap - conformation of the walls, lids, covers or grids; and
(x) any available guidelines on minimising the trapping of non-target species.

5.2.4 Traps or nets used to capture animals in water must be arranged so as to prevent drowning.

5.2.5 Wet pitfall traps must not be used for the capture of vertebrates. If they are used for the capture of
invertebrates, they must be managed so as to minimise the inadvertent capture of vertebrates.

Non-trap capture

5.2.6 Principles applicable to non-trap capture techniques are similar to those detailed above for traps.
The skill of the operator is essential to ensure minimal impact on target and non-target species.

Electrofishing

5.2.7 Electrofishing may be used as a capture technique only by people with approved or recognised
training which covers both animal welfare and human safety aspects, or under the direct supervision
of these people.

5.3 Handling and restraint of wildlife

5.3.1 Captured free-living animals are to be handled using techniques and timing appropriate to the
species. They should incorporate the following to minimise the risk of injury or stress-induced
disease:
(i) firm, controlled handling in a quiet environment;
(ii) limiting the time of handling and restraint to the minimum needed to achieve the scientific or
educational objectives;
(iii) using sufficient competent persons to restrain animals and prevent injury to either animals or handlers; and
(iv) using chemical restraint such as sedation/tranquillisation where appropriate if the period of handling is likely to cause undue stress to animals.

5.3.2 Wherever possible, the long-term and short-term consequences of capture, handling and restraint should be recorded.

5.4 Holding and release of wildlife

5.4.1 The time for which an animal is held should be minimal, consistent with the achievement of scientific or educational objectives.

5.4.2 Animals must be held in a way that minimises stress or injury. Investigators and teachers must base management practices for captured animals on available information about the normal behaviour of the species and the likely response to captivity.

5.4.3 Holding areas and containers must be safe, quiet and hygienic.

5.4.4 Close confinement devices such as bags and crates must:
   (i) allow animals to rest comfortably;
   (ii) minimise the risk of escape or injury;
   (iii) be adequately ventilated;
   (iv) maintain animals within appropriate levels of ambient temperature and humidity; and
   (v) minimise the risk of disease transmission.

5.4.5 Animals should be released at the site of capture unless the AEC approves a proposal outlining reasons why an alternative site is preferred.

5.4.6 Time of release must be consistent with the usual active time of the species.

5.4.7 All reasonable steps must be taken at the time of release to protect animals from injury and predation.

5.5 Transport of wildlife

5.5.1 Animals captured in the wild are particularly susceptible to transport stress and all reasonable steps must be taken to minimise that stress. The general principles for transport detailed in section 4.2 of this Code apply, and particular reference should be made to the International Air Transport Association Live Animals Regulations (IATA).

5.5.2 Stress during transport should be minimised by:
   (i) the use of appropriately-sized, designed and constructed transport containers;
   (ii) limiting exposure of animals to extremes of temperature, noise, visual disturbance and vibration;
   (iii) providing, if appropriate for the species, an inner shelter within the transport container;
   (iv) ensuring that animals are separated where there is incompatibility of species, age, size, sex or reproductive status;
   (v) preventing unnecessary handling; and
   (vi) the administration of tranquillisers by skilled persons when appropriate.

5.6 Identification of wildlife
5.6.1 The method chosen to identify individual animals must be that which causes the least distress within the context of the scientific purpose and the least interference with the normal functioning of the animal. Identification of individual animals by wildlife carers requires AEC approval if performed for scientific purposes, but not if performed for routine husbandry.

5.7 Field techniques

5.7.1 Minor procedures used in the field often involve only capture and release, possibly facilitated by tranquillisers or short-acting anaesthetics. Such procedures include identification (eg leg banding, ear tagging, microchipping, radio-tracking devices), examination, measurement and sampling (eg hair, feathers, scales, blood, stomach contents of birds). Such procedures may be carried out, subject to AEC approval, but only if the following requirements are met:

(i) they must be performed in an uncontaminated area by competent persons, using clean equipment in each instance;
(ii) equipment and agents necessary to provide for the health and welfare of the animals and relief of pain or distress must be readily available;
(iii) sedated or anaesthetized animals should experience uneventful recovery to full consciousness in an observation area where they are able to maintain normal body temperature and are protected from injury and predators;
(iv) the potential impact of the procedures on dependent young is minimised; and
(v) the methods and equipment used are appropriate to the species and cause least distress and interference with normal behaviour.

5.8 Voucher specimens

5.8.1 Optimal use of voucher specimens requires that they become part of a publicly accessible reference collection. Therefore:

(i) consultation with a museum or similar institution must take place before collection to ensure the use of proper preservation and holding techniques, the availability of necessary equipment and the collection of essential data;
(ii) voucher specimens should be lodged with a museum or similar institution where they are made available for further study; and
(iii) proper documentation of the specimens, including reasons for collection, is essential. Data should be maintained with the specimens.

5.9 Studies of wildlife interaction

5.9.1 Studies of wildlife interaction may involve work in the field or the laboratory and can include interaction between species (eg predator-prey), within species (eg competition) or between species and habitat.

5.9.2 The primary ethical considerations with studies of wildlife interaction are the degree of manipulation required to set up the interaction and the effect of the observer(s) on the interaction.

5.9.3 Efforts should be made to reduce animal usage by employing, for example, modelling theory.

5.9.4 Field studies should include an assessment of the wellbeing of animals outside the project, including other species, that may be influenced by the manipulation.

5.9.5 In studies of predatory encounters, unstaged natural encounters in the field should be used wherever possible.
5.9.6 Models should be used wherever possible instead of live animals if staging is required in studies of predatory encounters.

5.10 Studies of vertebrate pest animals

5.10.1 All of the principles set out in this Code apply equally to animals considered to be pests.

5.10.2 The primary purpose of studies involving vertebrate pest animals is often to measure the efficacy of methods of killing or control. Proposals to an AEC to perform such studies must include sufficient information for the AEC to assess the potential benefits in relation to the adverse impact on both the target and non-target animals.
Section 6: Care and use of livestock for scientific purposes including demonstrations

This section is intended to clarify when AEC approval is required for the use of livestock for scientific purposes and should be read in conjunction with the rest of this Code.

6.1 General Principles

6.1.1 Unless specifically exempted by an AEC, the care of livestock managed by institutions must comply with the Model Codes of Practice for the Welfare of Animals, listed in the section titled Information Sources.

6.1.2 AEC approval is required when livestock are used to acquire, develop or demonstrate knowledge and techniques. This requirement covers standard husbandry procedures and normal farming practices such as mulesing, tail docking and beak trimming when these activities are performed for scientific purposes. It also includes their use for the production of biological products other than food or fibre. (The only exceptions are defined in clause 6.1.3.)

6.1.3 AEC approval is not required for agricultural extension work and formal work experience involving routine procedures if all of the following apply:

(i) the animals are on their home property;

(ii) the procedures would occur normally as part of routine management;

(iii) the animals are not subjected to anything additional to that which would occur in routine management; and

(iv) the teacher is competent to carry out the procedure.

6.2 AEC Applications

6.2.1 AEC approval based on submission of a complete proposal (See clauses 2.2.15 and 2.2.16) is required for teaching or demonstrating routine procedures that are not exempt as defined in clause 6.1.3.

6.2.2 For routine procedures, institutions may develop and use standard operating procedures (SOPs) (See 2.2.17). Once approved by the AEC, the SOPs may be referred to in a proposal as a means of providing required information on techniques. When an SOP is used, all of the other information required in Clauses 2.2.16, 2.2.17 and 7.3.1 must still be included in the proposal.

6.2.3 The investigator or teacher must possess the appropriate skills and experience to carry out the procedures described in the proposal.
6.3 Teaching and demonstration requirements for all livestock

6.3.1 Teaching and demonstration requirements for all livestock includes commercial ventures held on private property for teaching livestock techniques.

6.3.2 In the event of injury to animals, treatments ranging from a minor procedure to euthanasia must be available.

6.3.3 Animal handling must be overseen by a competent person present to minimise the risk to animals of pain or distress.

6.3.4 Animals which do not adapt to the situation should be removed.
Section 7: The use of animals in teaching

This section refers to the special ethical considerations and issues of responsibility that must be addressed when animals are used for teaching activities.

Teachers should note that all parts of this Code are applicable to teaching activities and that this section emphasises the principles of most relevance to schools and tertiary institutions. It should be read in conjunction with the rest of the Code.

7.1 General Principles

7.1.1 Animals are not to be used for teaching activities unless there are no suitable alternatives for achieving the educational objectives.

7.1.2 All teaching activities involving the use of animals must first be approved by an AEC which is satisfied that there is no suitable alternative, and that the number of animals involved and the impact on them is minimised.

7.1.3 Students should be given the opportunity to discuss the ethical, social and scientific issues involved in the use of animals for scientific purposes. Where students use animals as part of their professional training, the relevant curricula should include material on such issues.

7.1.4 The use of non-animal models to achieve educational outcomes is still evolving and therefore should be kept under constant review. The institution will therefore need to ensure that procedures as required by 2.1.1 (xi) are established.

7.1.5 In the case of vocational training involving procedures that may cause adverse impacts on the animals used, the need for students to carry out such procedures should be justified to the AEC on a case-by-case basis.

7.2 Responsibilities of Teachers

7.2.1 The person in charge of the students has responsibility for the care and use of the animals from their time of acquisition to the time of disposal. That person must:

(i) ensure that all care and use of the animals is in accord with the provisions of this Code and all relevant provisions of Commonwealth, State or Territory legislation;

(ii) have relevant training and qualifications;

(iii) incorporate into the proposed activities any methods that replace, reduce or refine the use of animals, provided such methods are compatible with the educational objectives;

(iv) obtain AEC approval before the activities commence and ensure that activities are conducted as directed and approved by the AEC;

(v) where available, use alternative methods to prepare students for teaching activities involving animals; and

(vi) ensure that there is close, competent supervision of all students.

7.2.2 The teacher responsible must ensure that before commencing work with animals:

(i) students are instructed in the appropriate methods of handling and caring for animals, and
(ii) students have demonstrated that they are able to perform the necessary tasks with care and competence.

7.2.3 Persons supervising students who are undertaking research must ensure that prior to using animals, the students receive instruction in the ethical and legal responsibilities involved in the use of animals for scientific purposes as well as in the appropriate methods for animal care and use. The proposal must specify whether the student or the supervisor is responsible for the welfare of the animals at each stage of the project.

7.3 Proposals for teaching activities

7.3.1 All proposals for animal use in teaching in which students are to interact with or handle animals or carry out a procedure on an animal must include details of:
(i) The maximum number of students to be supervised by each teacher;
(ii) The minimum and maximum number of animals to be used by each student;
(iii) The maximum number of times each animal will be used by a student; and
(iv) How the attainment of the educational objectives will be assessed.

7.3.2 Animals must not be used in schools for teaching (ie to acquire, develop or demonstrate knowledge of techniques in any scientific discipline) unless their use has been approved by an AEC.

7.3.3 A school or group of schools may streamline the AEC application process by requesting approval to repeat a particular animal use activity with different animals, students, times and locations.

7.3.4 Teachers must not vary any aspect of a project which has such repetitive approval unless approved by the AEC.

7.3.5 Such repetitive approval may be granted for a maximum of three years subject to, or conditional on, an annual review. If the same project is the subject of subsequent proposals, the applicant must include modifications to implement the 3Rs or justify why this cannot be done.

7.3.6 It is recognised that in teaching situations the number of animals to be used may not be known in advance, especially for ‘repeating approval applications’.

7.3.7 Teachers must keep a diary of the number of animals and of students used in each teaching activity.

7.4 Animals in Schools

7.4.1 All schools must have access to an AEC which may best be achieved by the establishment of regional or central State AECs for schools.

7.4.2 The Head of the school is responsible for ensuring that school activities involving animals are in compliance with this Code.

7.4.3 The following activities should not be carried out in schools:
(i) surgical procedures other than normal animal husbandry operations;
(ii) induction of infectious diseases;
(iii) production of nutritional deficiency giving rise to distress;
(iv) exposure to stimuli which cause distress; and
(v) administration of toxins, ionising radiation or other bio-hazardous materials.

7.4.4 When the purpose of the activity is for students to interact with animals, consideration should be given to alternatives to the temporary introduction of animals to the school, such as observing animals in purpose-built facilities, in their natural environment or under field conditions.
7.4.5 Mechanisms must be put in place to ensure that all use of animals in schools complies with the principles of this Code. They may include:

(i) the establishment of a policy committee;
(ii) the designation of a person who is responsible for promoting awareness of these principles;
(iii) the acquisition or development of detailed guidelines; and
(iv) appropriate teacher training.

7.4.6 Animals must be well cared for at all times, including on weekends and vacations.

7.4.7 Detailed animal care guidelines and complete animal care records must be available in schools for inspection by AEC members and regulatory authorities.

7.4.8 Students must not be allowed to take animals home unless there is a clear, written undertaking from a parent or guardian that the animals will be cared for adequately and responsibly.

7.4.9 Animals should not be held for longer than necessary.

7.4.10 Holding facilities must be secure at all times against human or animal interference.
Information Sources

The National Health and Medical Research Council (NHMRC) Animal Welfare Committee

Postal Address:
The Secretary, Animal Welfare Committee
NHMRC
MDP 33
Department of Health and Ageing
GPO Box 9848
Canberra ACT 2601

Tel: 61 02 6289 9179
Fax: 61 02 6289 9132

Publications:
• A Guide to the Use of Australian Native Mammals in Medical Research. (Sections 1-4)
• NHMRC Policy on the Care of Dogs Used for Scientific Purposes. (1997)
• Ways of Minimising Pain and Distress in Animals in Research: Practical Information for Research Scientists and Animal Experimentation Ethics Committees.
• Animals Scientists and You. Resources for Primary School Students.

Australian and New Zealand Council for the Care of Animals in Research and Teaching (ANZCCART)

Executive Officer: Dr R. Hope

Postal Address:
The Director
ANZCCART
Room 128, Darling Building
Department of Environmental Biology
Adelaide University SA 5005

Tel: 61 8 8303 7393
Fax: 61 8 8303 7113
E-mail address: anzccart@adelaide.edu.au
Other relevant Australian codes of practice or guidelines

Model codes of practice for the welfare of animals are sponsored by the Standing Committee of Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) and cover the transport, handling and husbandry of livestock. The following Codes are available from CSIRO Publishing, PO Box 1139, Collingwood, Victoria 3066:

- *Animals at Saleyards* (1991)
- *Destruction or Capture, Handling and Marketing of Feral Animals* (1991)
- *Cattle* (1992)
- *The Pig 2nd Ed* (1998)
- Land Transport of Horses (1998)
- Land Transport of Pigs (1997)
- Land Transport of Cattle (1999)
- Land Transport of Poultry (1998)

The Codes listed below are currently being reviewed:

- *Road Transport of Livestock* (1983)
- *Air Transport of Livestock* (1986)
- *Sea Transport of Livestock* (1987)

The Model Code listed below is a new Code to be published in the near future:

- Land Transport of Goats

Office of the Gene Technology Regulator (OGTR)

OGTR
Department of Health and Ageing
GPO Box 100 Woden ACT 2606
Tel: 1800 181 030
Fax: 61 02 6271 4202
Publications:

- Guidelines for Large Scale Genetic Manipulation Work (1994)

The Australian Quarantine Inspection Service (AQIS)


Animal Welfare Information Center (AWIC)

US Department of Agriculture
Agricultural Research Service National Agricultural Library,
10301 Baltimore Boulevard 4th Floor
Beltsville, Maryland 20705-2351
Tel: 301 504 6212
Fax: 301 504 7125
Internet address: www.nal.usda.gov/awic/
Email: awic@nal.usda.gov

The International Air Transport Association (IATA)

*The International Air Transport Association (IATA) Rules Book for the Carriage of Live Animals may be obtained through State Departments of Agriculture or their equivalent, or from IATA, 2000 Peel Street,*