NUS Institutional Animal Care & Use Committee

IACUC Newsletter

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Institutional Animal Care and Use Committee
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Message from the IACUC Chair

I know IACUC can be a pain-in-the-neck to PIs with the requirement for the seemingly endless filling of forms and clarifications. We appreciate your sentiments including possibly those expressed in the article by Prof Roebuck of Johns Hopkins University, which we have reprinted in this issue of IACUC E-news (see Special Features). I see IACUC's role as balancing these sentiments and interests of PIs with the regulatory requirements of AVA, the demands of animal rights activist organizations, and the gold standards of animal care and use established by the Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC) International. We strive to achieve a good balance while going for excellence in animal care and use.

Our practice and our application forms are constantly evolving. While we cannot reduce the information content of the form, which is necessary for IACUC review, we can simplify it and make it more user-friendly. We are also working on an on-line application system to streamline the application and reviewing process to facilitate and speed up the process. We also attempt to harmonise practices with those of LAC, IBC/OSHE and IRB.

If you have any difficulties with our forms or any other grievances, please come to our office and our office staff will walk you through the difficulties / issues. If they cannot resolve them, they will bring them up for IACUC attention. We welcome feedback of any kind so that we can constantly review our practice to achieve a golden balance between the best practice in animal care and use and your interests in advancing science and getting research done without undue impediments.

You will be regularly updated on our evolving practice through a number of channels. These are (a) direct revision of form, (b) website updates, (c) newsletter, (d) circular through the HoD and (d) quarterly meetings / dialogue with PIs. The first of the last item will take place on 2 March 09 through the auspices of the Life Sciences Institute (see Special Features).

Lastly, on behalf of the IACUC and office staff, let me thank you for your continued understanding, cooperation and support. IACUC has come a long way since its formation about 4 years ago. Let us work together to build a culture of respect for animal ethics and biosafety while pursuing excellence in science.

Emeritus Professor Lam Toong Jin
Chair, IACUC

Back to Contents

IACUC Forms

Changing for the better – IACUC form revision

Do not be put off by the number of pages. If you would just read through the form, you would find that it actually asks specific and direct questions to guide you to provide the information required by IACUC.

We try to make the form user friendly and easily understood. If you feel otherwise, please tell us your difficulty in understanding or completing the form. We are prepared to revise it for added clarity. Below are 2 examples explaining the rationale for the form revision. You will be regularly updated on revisions made.

1. Editing your answers

One difficulty in filling the form is editing of the text. For example, when you try to block some words or a sentence using the cursor for deletion, the whole text after the position of the cursor will be blocked. Deletion will have to be done letter by letter. This is because the form is protected to enable form filling.

The problem was brought to our attention by several PIs and we have now unprotected several sections of the form to allow for free editing. You can now use all the MS-Word editing tools to edit the text you have typed in the form.

2. Procedure B form

Procedure B form is for you to describe the non-surgical procedure you propose to perform on animals, and if the procedure causes pain and distress to the animals, what you intend to do to minimize the pain and distress.

Very often, PIs who administer substances (drug, cells infectious agents, etc) to animals indicated that the procedure would not cause more than momentary pain and distress, because the substances were administered by simple injection using needles and syringes. What these PIs forget to describe was the pain and distress that might be caused post administration, such as effect of the drugs, tumor formation, infection, etc. Much time was spent on clarifying with the PIs and for requesting these details during the protocol review process.

To help PI better understand the issues and provide the required information, the Procedure B form was revised to break down the original few questions into several simple, direct yes-or-no type of questions.

We have value-added to the IACUC forms, with guiding questions to better facilitate form completion.

Back to Contents

Animal Care And Use Matters

Update on the 2nd Semi-annual Facility Inspection (2008)

The IACUC has just conducted its 2nd Semi-annual Facility Inspection for the year 2008. This visit serves as a follow up inspection as well as to identify deficiencies and areas of improvements in the animal care and use facilities.

Below are areas where deficiencies are commonly reported during IACUC Inspections in the animal housing and research facilities. Please evaluate your facility in preparation for the IACUC Semi-annual Facility Inspection 2009.

SOP, records and recordkeeping	Animal and fish movement, clinical records such as treatment and euthanasia should be properly recorded and documented. Updated SOPs should be readily available and record keeping should be maintained.
Feed and drug label	Feed containers should be labeled with milling, opened and expiry dates. Drugs and other biologics should be labeled with name, concentration, shelf-life, manufacture and expiry dates.
Animal/Fish identification	The cage/ racks/tank cards should contain required information such as animal/fish species/strain, number, PI's name, protocol number, when applicable.
Facility maintenance and house keeping	This includes frequency of bedding change, cleanliness & sanitation, waste & carcass disposal and pest control. These should be properly reflected in the SOP.
Storage	There must be proper storage of food and bedding, supplies, drugs & biologics, waste material, carcass and hazardous agents.
Behavioral enrichment	This should be appropriately available to all animals unless omission is justified and approved in the research protocol.
Observation of all animals	This must occur on a daily basis, including weekends and holidays with provision for accessible contact information, monitoring of backup systems and veterinary care. Daily observation should be properly recorded and documented.
Relative Humidity (RH)	Relative humidity should be controlled. The acceptable range of relative humidity is 30 to 70%.
General safety	The following should be in place: hazard signs, sharps disposal, biohazard/cytotoxic bins, secured gas cylinders, scavenging of anaesthetic gases, drug control and expiration dates.

Contact person for further details:

Cheryl Inguito DALUDADO DVM @ dprdci@nus.edu.sg

Back to Contents

IACUC Compliance Audit on Animal Care & Use
- Avoid These Common Protocol Compliance Pitfalls

Here are a few of the findings noted in investigator laboratories during the latest round of IACUC Compliance Audit on Animal Care and Use. Please review these findings to ensure that these would not be observed in your lab.

When performing survival procedures, aseptic techniques must be used. The IACUC guideline on "Aseptic Surgical Techniques" can provide further details on appropriate techniques. The Laboratory Animal Centre (LAC) also provides refresher training (by request) in surgical procedures to investigators and lab staff. For more information regarding training please contact ahusec@nus.edu.sg.

It is important to keep adequate records on animal use and care. Survival surgical procedures must have a concurrently-recorded log detailing anesthesia data, intra-operative monitoring, and post-procedural care. Forms can be obtained from LAC. Updated records on regular health monitoring, breeding, experimental treatments and monitoring of criteria for humane endpoint should also be kept and be made available upon request.

Changes in the protocol should have prior approval from IACUC. Whether it be a modification of an approved procedure, addition of a new procedure, new drugs or cells to be administered, additional endpoints, new housing and animal use location, additional animals or change in animal species, etc., submission of a protocol amendment for IACUC review and approval should be done first.

Movement of animals should be according to the approved protocol. Animal movement is restricted to minimize the spread of any adventitious pathogen. If you urgently need to move your animals, please ensure that it will be coordinated with the LAC staff.

New personnel should be added to the protocol by submitting an amendment. They should have undergone the Responsible Care and Use of Laboratory Animal (RCULA) course and the relevant species-specific hands-on training. Enrollment in the NUS Occupational Health Programme for Personnel with Laboratory Animal Contact is now also compulsory. A personal reference number will be issued by the occupational health physician after the screening. Please indicate this number in the IACUC form.

All investigators should be familiar with the approved procedures. For quick reference, a copy of the IACUC watermarked approved protocol should be conveniently available to all team members. A hard copy is preferred although a soft copy stored in the lab computer is acceptable as long as team members have access to it.

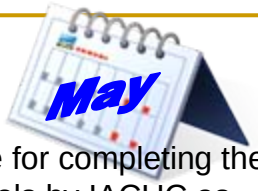
All drugs must be clearly labeled with the name and date of expiration. If drugs are diluted, the secondary container must be labeled with not only name and expiration dates but also the diluent and the date of preparation. Solutions should not be used when a precipitate has been formed.

Contact person for further details:

Mark Vinson VALLARTA DVM CPIA @ vallarta@nus.edu.sg

Back to Contents

IACUC/ Protocol Matters



Early submission of student project protocols to IACUC

It has come to our attention that Honours students have limited time for completing their projects and would therefore require approval of their project protocols by IACUC as soon as possible.

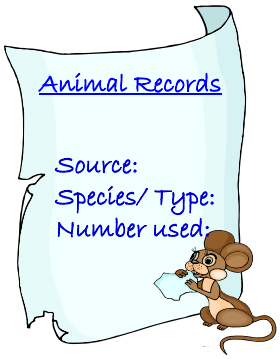
In view of this, PIs intending to offer Honours projects to students are advised to submit the project protocols to IACUC for early processing (e.g. preferably in May or even earlier for projects starting in August), even though the students have not been identified yet.

When the students are eventually identified, the protocols would have already been reviewed. All that is required then is for PIs to complete the student information in the form for IACUC approval.

Please ensure that the students have already received RCULA training and are enrolled in the Occupational Health Programme before starting on the project. These are prerequisites for IACUC approval.

Please refer to IACUC circular dated 21 January 2009

Keeping track of animals used



PIs should keep an updated record of the source(s), species/ type(s) and number of animals used.

IACUC and LAC offices have received PI enquiries relating to information on animal numbers, especially when PIs are due to submit the Annual Protocol Review (APR) forms. This should not have been necessary if PIs keep proper records.

Problems and Pitfalls in Protocol Approval

- Talk jointly organized by LSI, LAC & IACUC

LSI, IACUC and LAC jointly organized a talk on “Problems and Pitfalls in Protocol Approval” on 2 March 2009. Speakers included Emeritus Prof Lam Toong Jin (Chairman, NUS-IACUC) and Dr Patrick Sharp (Director, Laboratory Animal Centre).

This talk addressed PI’s concern on the use of animals for research work and also provided an opportunity for all working on animals to interact with IACUC and LAC colleagues.

LSI, IACUC and LAC plan to organize more of such regular dialogue sessions with the PIs.

Back to Contents

Occupational /Environmental Safety & Health

Occupational Health Programme for Personnel with Laboratory Animal Contact

OSHE, together with LAC and IACUC, has developed a new health surveillance programme for all personnel who come in contact with animals, including students, staff and external collaborators.

The purpose of this medical health surveillance programme is to safeguard the health of all personnel working with animals. This allows NUS to keep a record of the current health status of the personnel.

This health surveillance programme requires the staff to submit a medical questionnaire **directly** to the Occupational Health Nurse (OSHE) for evaluation.

In the event where additional information or medical tests are required, the applicants would be contacted by the Nurse.

Please note that all procedures are **FOC.**

Upon clearance by the Occupational Health Physician, a medical contact card will be issued to the applicant. This card is to be kept in your possession at all times. The card serves as an important source of information in case of emergency.

PI is to quote the unique serial number of the cards issued to personnel in all protocol applications / amendments.

Researchers are advised to enroll early in the OH programme to avoid unnecessary delay in IACUC approval since the average medical evaluation takes about 2 weeks.

Medical Confidentiality for all Occupational Health Programme Applications

There have been instances where PI has inadvertently forwarded the medical records of his / her staff to IACUC.

Please note that all OH programme application forms must be sent by the applicant in a sealed envelope, addressed to OSHE and attention to the Occupational Health Doctor.

Contact person for further details:
Song @ oshsks@nus.edu.sg

Back to Contents

Occupational /Environmental Safety & Health

Use Cytotoxic bag (Purple colored) for disposal of cytotoxic contaminated waste

It is the NUS and national regulatory requirement that cytotoxic wastes be stored in purple bags before disposal by licensed contractor.

OSHE has worked with our NUS Laboratory Supply Store at NUMI, to bring in the purple colored cytotoxic bags for sale to our NUS researchers.

You may find out more in the following OSHE site:

https://share.nus.edu.sg/osh/OSHE%20Alert/012009.pdf

Biosafety guidelines for research, release and importation of genetically modified organisms (GMOs)

The Genetic Modification Advisory Committee of Singapore (GMAC) has developed two sets of biosafety guidelines for research and commercial releases of GMOs:

• The Singapore Biosafety Guidelines for Research on GMOs (the “GMAC Research Guidelines”)
• The Singapore Biosafety Guidelines on the Release of Agriculture-Related GMOs (the “GMAC Release Guidelines”)

You may find the Multi-Agency Joint circular on Biosafety Guidelines for Research, Release and Importation of Genetically Modified Organisms in the following link:

http://www.gmac.gov.sg/pdf/Multi-Agency%20Circular%20on%20Biosafety%20Guidelines%20for%20GMOs_FINAL_7%20Nov%202008.pdf

Back to Contents

Special Features

CAAT Newsletter: Vol. 13, No. 2, Winter 1996

IACUC Review: An Investigator's Perspective

By Bill D. Roebuck, Ph.D.

"Well, I'll be damned! They don't know anything about what I'm doing!"

More than once I have had this reaction to the questioning and criticisms of my own Institutional Animal Care and Use Committee (IACUC). Over several years, I have heard variations upon this reaction from many of my associates. Why does this reaction occur? Need it be this way? How could the communication between the IACUC and the investigators submitting the protocols be improved?

Why Does this Reaction Occur?

I believe that there are two basic reasons for the reaction expressed above. First, the IACUC review process represents something else to do--another form in an endless series of forms that cross our desks. Second, I think that many of us look upon this review as an insult--questioning us from afar or perhaps "big brother" looking over our shoulder.

While the first issue may be irritating, it is rather minor. What tends to make it more important is that the timing may not be particularly good with deadlines for grants, teaching, and meetings. Additionally, the time it takes from submission of a protocol to revising that protocol may be upwards to a month or more. This tends to draw the whole process out. Nonetheless, I believe it is a minor irritation.

I believe that most of the negative reaction to IACUC review results from the investigator's perception of the review as an insult. "A committee is questioning my ideas and methods!" Perhaps the idea of review by a committee, some or most of whom are unknown to the investigator, is more upsetting than if the reviewer were a knowledgeable and respected associate suggesting that the investigator do an experiment differently. Adding to the insult is the almost certain knowledge that the investigator knows far more about the grant or project than anyone on the IACUC.

Need it Be this Way?

Clearly, the answer is no! The trick is to get the investigator to view the IACUC review as an opportunity--a research opportunity. IACUC review offers the investigator the opportunity to review his or her research plans, the opportunity to confront the some difficult scientific choices, and the opportunity to evaluate some new or alternative choices.

My grants and many other grant applications progress from observations and limited data sets to the generation of a new hypothesis. Next, experiments are designed to test that new hypothesis. The design of the experiments comes last. The opportunity provided by an animal protocol review is that the first item is the animal, giving the investigator the opportunity to view the project from a very different perspective. This is like looking at a building from a different angle. Instead of formulating a hypothesis and trying to adequately test it, we ask our first questions about the type and number of animals, and how they will be used and treated. Concerns and positive answers to these questions can only improve the quality of experiments. It is possible that the adequacy of the hypothesis and experiments will be questioned once again. Such a re-examination is an opportunity.
A second opportunity is the opportunity to confront and accept or reject different scientific choices. For example, the use of alternative models, new approaches or new products in the marketplace, or perhaps ways to generate higher quality data can be discovered, thus reducing the number of animals. If the justification questions posed in protocol review forms are viewed as an opportunity, they become much more interesting and ultimately more useful.

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Back to Contents

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How Can Communications between the IACUC and the Investigator Be Improved?

A third opportunity is the opportunity to view (or defend) standard or usual ways of understanding a task. In grappling with this, one must always weigh these tried-and-true procedures with newer ways of generating similar data. In comparison shopping between methods and experimental approaches, some new and better approaches may arise. More often, refinements of existing approaches will develop. The key point is that opportunities to enhance the scientific value of the experiment can be found in such a review process, while meeting the institutional and societal obligations.

There are several approaches to make the process into an opportunity. I believe that the first approach should be to create a dialogue between the committee and the investigator. When completing the protocol review forms, I have often felt that I was being asked to guess the "right" answer on the form, or that little respect was being afforded to the intricacies of my research. I believe that this is largely due to the impersonal nature of committees and forms. Personal interactions among associates would be of considerable aid. Requests from the committee such as "could I come over and help you understand some aspects of the committee's problems with your protocol?" would be better than simply receiving a form letter rejecting the protocol and/or enumerating problems.

I believe that the investigator and his/her team are the best source for solutions to problems raised on IACUC forms. Trust and respect for their knowledge is critical. Committees and the veterinary staff must cultivate these relationships. One approach to this end is to invite investigators to share their ideas and knowledge with the IACUC in the form of informal seminars. Another approach would be to provide support to investigators in need. For example, statistical questions related to a number of animals and replication of experiments are common. Power tests to justify the number of animals are another common need of investigators. Cultivation of statistical services to help with these common needs would be helpful.

I raise a caution here. Intellectual engagement is the key to developing these relationships. Half-hearted efforts or simplistic approaches will not work. For example, experimental alternatives can be a problem. How one searches the literature and formulates the question in searches will determine the outcome. Usually, only the investigator can pose the critical questions in a search. Although investigators commonly undertake searches, the insight of an experienced librarian is most useful.

Finally, it is important to recognize that veterinarians have an awkward role. They work for the institution and are obligated to protect both the institution and its investigators from bad situations. A relationship of trust and respect between veterinarians and investigators is important. As with all relationships, this takes work. I believe that one of the best ways to build such relationships of trust is for the veterinary staff to serve as keepers of important knowledge of techniques and procedures involving animals. This knowledge can only be acquired by working actively with investigators, manually and intellectually.

Bill D. Roebuck, Ph.D.
Dr. Roebuck is Professor of Toxicology and Adjunct Professor of Environmental Studies,
Department of Pharmacology and Toxicology
Dartmouth Medical School.

Back to Contents

Newsworthy Articles

Selection of anaesthetics for Diabetic Research

Anaesthetic agents such as ketamine+xylazine, isoflurane produced acute hyperglycaemia, on blood glucose levels in fed rats. But, none of these anesthetic agents produced hyperglycaermia in fasted rats. Barbiturates such as pentobarbital sodium did not produce hyperglycaemia in either fed or fasted rats. Based on these findings, it is suggested that caution needs to be taken when selecting anesthetic agents, and fed or fasted state of animals in studies of diabetic disease or other models where glucose and/or glucoregulatory hormone levels may influence outcome and thus interpretation.

Source: Experimental Biological methods 230:777-784, 2005

Read more

http://www.ebmonline.org/cgi/content/full/230/10/777

NIH Press Release (June 23, 2008): Newly Approved Ocular Safety Methods Reduce Animal Testing

On October 25, 2007, ICCVAM forwarded its first recommendations for the use of *in vitro* methods for ocular safety testing to Federal agencies. ICCVAM recommended that the four alternative test methods included in their evaluation should be considered before using animals for ocular safety testing, and that the methods should be used when determined appropriate. The recommendations were communicated to Federal agencies in letters from Dr. Samuel H. Wilson, Acting Director, NIEHS, to each agency head. Links to these letters, and to the responses received from the agency heads, can be found below. The ICCVAM recommendations were accepted by the Federal agencies, and *in vitro* test methods may now be used instead of conventional tests for certain regulatory testing purposes.

Two of the methods, the Bovine Corneal Opacity and Permeability (BCOP) assay and the Isolated Chicken Eye (ICE) assay, are considered to have sufficient performance to substantiate their use for regulatory hazard classification testing of some types of substances. The two other methods, the Isolated Rabbit Eye (IRE) assay and the Hen's Egg Test – Chorioallantoic Membrane (HET-CAM) assay, are not considered to currently have sufficient performance and/or sufficient data to substantiate their use for regulatory hazard classification purposes, but may have applicability for other uses. ICCVAM recommends that the test methods should be used in a tiered-testing strategy, where positive substances can be classified as ocular corrosives or severe irritants without the need for animal testing.

Read more

http://www.niehs.nih.gov/news/releases/2008/ocular.cfm

Back to Contents