Ethically-Sourced Cadaver Surgery

A Submission to Murdoch University's Division of Veterinary & Biomedical Sciences

Andrew Knight
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26th Jul. 2000

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26th Jul. 2000

Associate Professor Peter Dorling
Acting Chair
Programme Committee
Division of Veterinary & Biomedical Sciences
Murdoch University
Murdoch WA 6150

Dear Associate Professor Dorling,

Ethically-sourced cadaver surgery

As you know I am currently a 4th year veterinary science student at Murdoch University with conscientiously held objections to participating in terminal surgical laboratories, and have been granted alternatives to the terminal surgical laboratories I have so far encountered in the Murdoch veterinary course. The alternative surgical requirements I have been granted to date comprise the following 3 elements:

1. I must attend all of the terminal surgery laboratories as an observer, participate in the discussions, and write reports from the points of view of the surgeon, assistant surgeon and anaesthetist, as all students do.

2. I must gain external experience assisting with or participating in surgery and anaesthesia, for example, in private clinics or shelters.

3. I must bring animals, for example, from shelters, to Murdoch and sterilise them under supervision and for assessment, variously performing both the surgeon's and anaesthetist's roles.

I have so far satisfied requirements (1) and (2) above. With respect to requirement (1) above, whilst I have so far attended the terminal surgery laboratories as an observer, and participated in the discussions and written the required reports, I have found myself frustrated by the lack of opportunity to take advantage of the available time and supervising staff members to learn more, within my ethical constraints. Not even models such as the Dog Abdominal Surrogate for Instructional Exercises ("DASIE") have been provided, despite their relatively low cost (US$15 each in 1996), their reusability, and their successful integration into courses elsewhere. Instead I and a conscientiously-objecting classmate are able to do little more than simply stand and observe, for hours at a time.

Models such as the DASIE allow practice of skills such as surgical draping, incision techniques, vessel ligation, abdominal suture patterns, and even intestinal anastomosis procedures. An article on the DASIE is included in the appendices. Whilst such models would provide an excellent starting point, the performance of simulated surgeries on ethically-sourced cadavers would provide invaluable added realism for students like myself.

With this in mind I wrote to Associate Professor Len Cullen and Associate Professor Rick Read on the 2nd May 2000 requesting coolroom space in the event that I was able to obtain any ethically-sourced cadavers for performing simulated surgeries on. Associate Professors Cullen and Read replied on the 17th May 2000 refusing my request and directing me not to approach anyone to request cadavers for this purpose.

I am, unfortunately, well aware that some academics within Murdoch University's Division of Veterinary & Biomedical Sciences are opposed to the introduction of humane alternatives into its teaching program. Nevertheless I do appreciate the legitimate concerns of academics such as Associate Professors Cullen and Read about the limitations of working with cadavers, and would value any insights their past experiences of working with them might provide. As stated in my letter of the 2nd May 2000, I am under no illusions that cadaver surgery would be identical to surgery performed on live animals.

However I also believe that simulated surgeries on cadavers would allow conscientiously objecting veterinary students to practice many of their surgical skills, and would be particularly useful as "dress rehearsals" before performing recovery surgeries on live patients.

In support of my position I have included in the following submission 19 documents including published papers, brochures, booklets and client consent forms, describing successful ethically-sourced cadaver surgical programs in North American veterinary schools; as well as the May 2000 *Working Party on the Use of Animals for Teaching Applied Anatomy, Small Animal Surgery and Anaesthesia - Final Report*, from the University of Sydney Faculty of Veterinary Science. This report proposes the significant reliance on ethically-sourced cadavers within the future veterinary surgical training program at the University of Sydney. Summaries of these papers and this report are provided for your convenience. The full versions are provided in the appendices.

The following 3 points seem clear to me from these documents, the limitations of cadaver surgery notwithstanding:

1. Ethically-sourced cadaver surgery is an integral component of alternative veterinary surgical courses worldwide.

2. Ethically-sourced cadaver surgery can provide important advantages in preparing students for performing surgery on live patients, and several published studies have affirmed the teaching efficacy of such simulated surgeries.

3. Obtaining and utilising cadavers for surgical training is a very sensitive issue, and programs already in place at the Tufts University School of Veterinary Medicine and other veterinary schools offer useful guidance about the most appropriate way to proceed.

The number of students desiring humane alternatives to traditional terminal surgery laboratories is continuing to increase worldwide, and Murdoch is likely to experience no exception to this trend. Given these points I therefore formally request that Murdoch's Division of Veterinary and Biomedical Sciences take steps to implement an ethically-sourced cadaver surgical program as a component of its alternative program for students who are unwilling to participate in terminal surgical laboratory classes. In requesting such a program I will clearly specify that I consider **ethically-sourced cadavers** to be only those obtained from animals that have died naturally or in accidents or been euthanased for medical reasons.

In my letter of the 2nd May 2000 I expressed my willingness to organise such a program myself. In their reply of the 17th May 2000 directing me not to attempt to obtain any cadavers, Associate Professors Cullen and Read stated that *"If it is to be done, the approach should be made by senior people within the Veterinary School and not by students"*. I therefore now formally request that those senior people referred to by Associate Professors Cullen and Read organise an ethically-sourced cadaver surgical program as a matter of urgency, given that I and another student unwilling to participate in terminal surgical laboratories are already well into our surgical training.

An ethically-sourced cadaver surgical program is perhaps not an essential component of an alternative surgical program. However it can clearly provide important advantages in preparing students for performing surgery on live patients. I would be deeply disappointed if I was forced to conclude that Murdoch University was not interested in providing the best surgical training it was capable of for students unwilling to participate in terminal surgery laboratories, despite the clear willingness of numerous other veterinary schools both overseas and within Australia to take very proactive steps in this area.

I look forward to the response of the Division of Veterinary and Biomedical Sciences to this submission as soon as possible.
Thank you and sincerely,

Andrew Knight
4th year veterinary student
Murdoch University

Cc:

- Associate Professor Len Cullen
- Associate Professor Rick Read
- Associate Professor Ian Robertson

CONTENTS

Anonymous (1996), "Accent on an alternative: DASIE", *Alternatives in Veterinary Medical Education,* Issue 2, p. 2-3.

Anonymous, (2000), "Comparison of alternatives offered by veterinary schools", *Alternatives in Veterinary Medical Education,* Issue 14, pp. 6-7.

Bauer, M., Glickman, N., Glickman, L., Toombs, J., & Bill, P., (1992), "Evaluation of the effectiveness of a cadaver laboratory during a 4th year veterinary surgery rotation", *Journal of Veterinary Medical Education,* Vol. 19, No. 3, pp. 77-84.

Hart, L., Anderson, D., & Zasloff, R., (1993), "Alternatives to the use of live animals in veterinary school curricula", *Humane Innovations & Alternatives,* Vol. 7, pp. 499 – 503.

Jennings, P., (1986), "Alternatives to the use of living animals in the student surgery laboratory", *Journal of Veterinary Medical Education,* Vol. 13, No. 1, pp. 14-16.

Kahler, S., (2000), "Will recovery surgery courses survive?", *Journal of the American Veterinary Medical Association,* Vol. 216, No. 8, pp. 1201, 1204.

Kumar, A., Murtaugh, R., Brown, D., Ballas, T., Patronek, G., & Clancy, E., [In Press], "Client donation program for acquiring dogs and cats to teach veterinary gross anatomy", *Journal of Veterinary Medical Education.*

Carpenter, L., Piermattei, D., Salman, M., Orton, E., Nelson, A., Smeak, D., Jennings, P., & Taylor, R., (1991), "A comparison of surgical training with live anesthetized dogs and cadavers", *Veterinary Surgery,* pp. 373-378.

Pavletic, M., Schwartz, A., Berg, J., & Knapp, D., (1994), "An assessment of the outcome of the alternative medical and surgical laboratory program at Tufts University", *Journal of the American Veterinary Medical Association,* Vol. 205, No. 1, pp. 97-100.

White, K., Wheaton, L., and Greene, S., (1992), "Curriculum change related to live animal use: A four-year surgical curriculum", *Journal of Veterinary Medical Education,* Vol. 19, No. 1, pp. 6-10.

Anonymous, (2000), "Alternative to live animal labs – for an ethically and educationally sound veterinary education", [brochure], Boston, US: New England Anti-Vivisection Society.

Anonymous, (1999), "Veterinary students create their own alternative surgery lab, AVAR assists", *Alternatives in Veterinary Medical Education,* Issue 12, p. 3.

Loew, F., (Dean, Tufts University School of Veterinary Medicine), (1989), "Tufts develops alternative program for teaching surgery", *Journal of the American Veterinary Medical Association,* Vol. 195, No. 7, pp. 868 – 870.

Patronek, G., (Director, Tufts Center for Animals and Public Policy), (1999), "Tufts University School of Veterinary Medicine Client Donation Program", *Alternatives in Veterinary Medical Education,* Issue 11, pp. 2-3.

Anonymous, (undated), "Euthanasia and the body donation program", [brochure], Texas: Texas Veterinary Medical Center, College of Veterinary Medicine, Texas A&M University.

Anonymous, (undated), "Euthanasia and body donation consent form", [form], Texas: Texas Veterinary Medical Center, College of Veterinary Medicine, Texas A&M University.

Anonymous, (undated), "When it's time to say "goodbye"", [brochure], California: UC Davis School of Veterinary Medicine Student Animal Welfare Committee.

Anonymous, (undated), “Animal use in veterinary medical education”, [booklet], Wisconsin: University of Wisconsin-Madison School of Veterinary Medicine.

Anonymous, (undated), “Animal anatomical gift form”, [form], Wisconsin: University of Wisconsin-Madison School of Veterinary Medicine.

Appendix II: University of Sydney documents

Hunt, G., (2000), “Working party on the use of animals for teaching applied anatomy, small animal surgery and anaesthesia – Final report”, Sydney: University of Sydney Faculty of Veterinary Science.

Jun. 2000 email exchange between Andrew Knight and Dr Geraldine Hunt, Head of Department, Department of Veterinary Clinical Sciences, University of Sydney, re: ethically-sourced cadavers obtained for use by University of Sydney conscientiously-objecting vet students.

Part A: Cadaver surgery in North American veterinary schools

The most recent survey presently available of animal usage and teaching alternatives offered in North American veterinary schools is provided in the following article dated April 2000:

> **Anonymous, (2000), "Comparison of alternatives offered by veterinary schools", *Alternatives in Veterinary Medical Education,* Issue 14, pp. 6-7.**
>
> 22 of the 31 North American veterinary schools responded to this survey. Of those 22, 18 were offering alternatives to terminal surgeries for students who requested them, and 16 of those were offering alternatives in core surgeries. 16 schools were offering cadaver surgeries as part of their alternative surgical programs, including all but one of those schools offering alternatives to core surgeries. Client donation programs and humane societies/animal shelters featured prominently in the sourcing of cadavers, with 12 schools utilising client donation programs, and 16 schools utilising humane societies/animal shelters.

A significant number of papers have examined in detail the use of cadavers in alternative surgical or other veterinary training. Examples include:

> **Bauer, M., Glickman, N., Glickman, L., Toombs, J., & Bill, P., (1992), "Evaluation of the effectiveness of a cadaver laboratory during a 4th year veterinary surgery rotation", *Journal of Veterinary Medical Education,* Vol. 19, No. 3, pp. 77-84.**
>
> This paper described the cadaver surgical laboratories made available to 4th year veterinary students at Purdue University in 1988 - 1989, with one group of 29 students having access to cadaver surgical laboratories in order to supplement their small animal surgical rotations, and a control group of 28 students who began their clinical rotations previously not having access to the cadaver laboratories. The authors found that student attitudes towards learning and participation were more favourable in the group with access to the cadaver surgeries. They asked:
>
> *"Why is it then that students in the experimental group developed and maintained more positive attitudes, regardless of caseload? The cadaver laboratory probably simulated not only relevant situations, but relevant situations of appropriate difficulty. This setting allowed the opportunity for instructor, peer, and self-reinforcement following task accomplishment. … Students in the experimental group were more self-confident in performing basic surgical procedures. … Practise leads to the acquisition of skills which are directly related to the development of self-confidence."*
>
> **Hart, L., Anderson, D., & Zasloff, R., (1993), "Alternatives to the use of live animals in veterinary school curricula", *Humane Innovations & Alternatives,* Vol. 7, pp. 499 – 503.**
>
> *"To further expand the non-interventive options available to students, in 1991 the School of Veterinary medicine at UC Davis formally implemented a short term program for those students who selected an alternatives approach. This transition program built on a course offered at Washington State University that emphasized psychomotor skills, surgical and anaesthesia techniques using cadavers of dogs and cats that died natural deaths, and ovariohysterectomy operations (spaying) on live animals from a humane society. Students also participated in a specially tailored clinical course in anaesthesia skills, and some laboratory and clinical experiences in ocular surgery and ophthalmology.*
>
> *In the fall of 1992, alternatives were fully implemented into the veterinary curriculum with two major innovations. First, the ten laboratory sessions for the surgery classes were modified (J. Pascoe, personal communication, 1993). The initial laboratory requires no animals. Only three laboratories now involve terminal surgeries. For these laboratories, as an alternative to the terminal surgeries, all students have the option of performing surgical procedures on a cadaver rather than a live animal. The remaining six of the ten laboratories are nonterminal ovariohysterectomy surgeries. Dogs and cats are transported from local animal shelters to the veterinary school where the supervised surgeries are performed, and after which the animals are returned to the shelters to be placed for adoption. (The subsequent adoption rate exceeded 90 percent.)"*
>
> **Jennings, P., (1986), "*Alternatives* to the use of living animals in the student surgery laboratory", *Journal of Veterinary Medical Education,* Vol. 13, No. 1, pp. 14-15.**

"At present, there are no real limitations on the use of small animal cadavers in surgical training. … Isolated cadaver limbs are frequently used for orthopaedic procedures, for example, and are satisfactory training models. These allow each student to have his or her own limb to fracture, stabilise, and radiograph in order to evaluate the results of the fracture fixation."

Kahler, S., (2000), "Will recovery surgery courses survive?", *Journal of the American Veterinary Medical Association,* Vol. 216, No. 8, pp. 1201, 1204.

"For the past eight years, UC-Davis has had three nonsurvival surgical exercises in its core curriculum, although students can opt for a cadaver alternative for these exercises. The other six laboratory sessions in the core involve spaying and neutering animals from five area shelters. The faculty, in consultation with students, has decided to replace the nonsurvival surgical exercises with cadaver exercises beginning this next academic year."

"The University of Illinois College of Veterinary Medicine has been a leader in pioneering its surgery instruction program. Those innovations were faculty driven. In 1989 Drs. Ann Johnson and Cathy Greenfield of the Department of Veterinary Clinical Medicine were among the U of I faculty who started looking at other ways of teaching surgery. Dr. Johnson said, "As surgeons, we were tired of teaching a lab where dogs were euthanized. We started looking at bone models and cadavers for teaching orthopedic surgery. Our conclusion was that it was maybe even better that students were first learning on this equipment. We also looked at how to do the same thing with soft tissue surgery. Our students learn the basics on chicken from the grocery store, learn the instruments, use cadaver parts, and then do survival surgery. The last step was to organise a spay/neuter program for the students with the local humane society." "

"In the U of I large animal surgery program, Dr. David Freeman, associate professor of equine medicine and surgery, is working with students to find alternatives to third-year surgery laboratories using live animals. The third-year program includes a goat gastrointestinal laboratory that is survival, as are a castration laboratory and an exploratory celiotomy on ponies. The second gastrointestinal laboratory on goats is nonsurvival. Dr. Freeman said, "Students who don't want to participate in the live animal surgery can take the cadaver lab, which is an equine orthopedic laboratory, and it counts as their surgery. Or we can arrange to get them a stillborn calf or foal for abdominal surgeries. These can be frozen beforehand. In the fall semester, we have an all-cadaver gastrointestinal laboratory, which is designed to prepare students for the second-semester live animal procedures." "

Kumar, A., Murtaugh, R., Brown, D., Ballas, T., Patronek, G., & Clancy, E., [In Press], "Client donation program for acquiring dogs and cats to teach veterinary gross anatomy", *Journal of Veterinary Medical Education.*

"We describe here the donor animal program at TUSVM [Tufts University School of Veterinary Medicine], which is entering its third successful year. We now procure all the animals needed for teaching through the client donation program. Currently, cadaver needs of the first year gross anatomy course are met by this program, as well as the needs of our clinical skills and medical procedure laboratories. The client donation program is no more labor intensive than procuring the animals by other more traditional methods such as purchasing purpose-bred animals. The students who dissected donor animals were uniformly positive about the program."

"The donor animal program also gives us the potential option of integrating important learning themes into the professional veterinary education. Students are given case histories of the dog (and cat) they are dissecting … These case histories could be integrated with their Problem Based Learning (PBL) sessions."

"Alternatively, noon seminars could be arranged by clinicians that can give a brief seminar on the clinical condition the donor animal suffered from. We believe the donor program is a workable program that can be implemented by veterinary schools. The donor animal program is cost-effective and presents a number of advantages over acquiring animals via the traditional route. These advantages include providing students with a valuable education that emphasizes the clinical aspects of anatomy and the ability to integrate the ethical values of veterinary medicine beginning in the first year of veterinary education."

The effectiveness of cadaver surgery as a teaching methodology has already been closely examined in some of those schools that have trialed, and adopted, such programs. Several published studies have affirmed the teaching efficacy of cadaver surgery. Examples include:

Carpenter, L., Piermattei, D., Salman, M., Orton, E., Nelson, A., Smeak, D., Jennings, P., & Taylor, R., (1991), "A comparison of surgical training with live anesthetized dogs and cadavers", ***Veterinary Surgery,*** **pp. 373-378.**

"Cadavers were compared with live anaesthetised dogs for their effectiveness as models for surgical training of veterinary medical students. One group of students was trained using cadavers, and a peer group was trained using live anaesthetised dogs. Both groups then performed an intestinal anastomosis using a live subject. The time to completion of the procedure was recorded. The anastomoses and celiotomy closures were evaluated. Each anastomosis was isolated and pressure tested. Reviewers blindly scored each surgical team's performance based on actual inspection of the surgical site and on viewing videotapes of the procedure. The participants' attitudes toward the use of live animals in teaching and research were documented before and after training. No statistically significant differences could be detected between the two groups. The results suggest that some substitution of cadavers for live dogs in surgical training might be feasible."

"None of the participants changed their opinion about the use of live animals, but several students stated that, to their surprise, they found cadavers useful as a laboratory subject."

"We were unable to detect a significant difference between the surgical performance of the two groups in any of the categories considered. This might mean that there are no measurable differences between training with cadavers and live anaesthetised dogs."

"Cadavers might well be used in preliminary skill-building laboratory exercises that culminate in live animal surgery. In such a plan, the use of live animals could be reserved for refinement of skills already obtained with cadavers or other alternative models, thus reducing the number of live animals used for surgical training."

Pavletic, M., Schwartz, A., Berg, J., & Knapp, D., (1994), "An assessment of the outcome of the alternative medical and surgical laboratory program at Tufts University", ***Journal of the American Veterinary Medical Association,*** **Vol. 205, No. 1, pp. 97-100.**

The authors studied new graduates from the Tufts University veterinary class of 1990. The class included 12 students who had participated in an alternative small animal medical and surgical procedures course:

"In the alternative laboratory program, cadavers were substituted for living dogs. The cadavers had been procured throughout the academic year from clients willing to donate their terminally ill or dead pets for education of veterinary students. Cadavers were kept in a –20 C freezer and thawed just prior to the laboratory session. As feasible, students in the alternative program performed the same laboratory procedures as their fellow students in the conventional program; they received instruction in anaesthesia by caring for selected clinical cases under the direct supervision of an anesthesiology faculty member."

Students were also required to undertake additional clinical rotations.

The surgical abilities of students taking the alternative program were compared with 36 of their conventionally-trained counterparts were assessed by questionnaires sent to their employers. Employers were asked to rate the competency of the new graduates at the time of hiring and 12 months later. It was found that there was no significant difference on either occasion in the abilities of the conventional and alternative graduates to perform common surgical, medical and diagnostic procedures; in their attitudes towards performing orthopaedic or soft tissue surgery; confidence in performing the listed procedures; or ability to perform those procedures without assistance. The authors stated that:

"Our results suggest that use of cadavers during the third-year laboratory program, when supplemented with additional clinical training during the fourth year, can provide training comparable to that provided in a conventional laboratory program."

White, K., Wheaton, L., and Greene, S., (1992), "Curriculum change related to live animal use: A four-year surgical curriculum", *Journal of Veterinary Medical Education,* Vol. 19, No. 1, pp. 6-10.

This paper examined the alternative surgical program implemented at Washington State University.

"Acceptable cadavers for the alternative laboratory are provided by the humane society or local practitioners. They are animals, (usually without identified owners) that were euthanased on humane grounds due to injury or disease and frozen until needed for a laboratory. … The small animal surgical faculty have noted that students from the alternative surgical laboratory program are more timid and hesitant the first time they incise living tissue. This hesitancy is only apparent on the first live tissue surgery. In all other segments of the 4th-year small animal surgery and anesthesia rotations, including patient care, the alternative students perform on a par with the students from the standard laboratory experience."

Veterinary students who have utilised ethically-sourced cadavers in their training are often very positive about their experiences:

Anonymous, (2000), "Alternative to live animal labs – for an ethically and educationally sound veterinary education", [brochure], Boston, US: New England Anti-Vivisection Society.

" "After a long court battle with my veterinary school, Ohio State College of Veterinary Medicine, I was finally allowed to pursue my dream in a humane and caring manner. My training utilized cadavers and extended senior-year surgical internships. I found this method far superior because not only did I repeat surgical procedures many times, … I was also able to follow my cases through into post-op care." – J. Kissinger, Ohio State Univ. graduate."

Kumar, A., Murtaugh, R., Brown, D., Ballas, T., Patronek, G., & Clancy, E., [In Press], "Client donation program for acquiring dogs and cats to teach veterinary gross anatomy", *Journal of Veterinary Medical Education.*

As stated previously, this paper describes the client donation program utilised to supply dogs and cats to the Tufts University School of Veterinary Medicine for the teaching of first year gross anatomy, as well as clinical skills and medical procedure laboratories. A survey of the first year gross anatomy students revealed that, given a choice, 95% of respondents preferred to dissect and learn anatomy from a donor animal. The paper quoted several of the students thus:

"We are not going to see perfect purpose-bred dogs in practice. The donor dogs were of all ages and breeds and there were plenty of dogs to compare for normal anatomy."

"The (donor) program seemed to be implemented rather easily here despite the split campuses. Considering most normal Vet schools have their anatomy labs on the premises of their hospitals, it would be a very easy, inexpensive and ethically sound program for other schools to adopt."

"My group did have a donor dog and I felt much better about the circumstances leading up to our dissection of the dog. I think this program is a great idea and is true to many of the commitments of Veterinary Medicine to better the lives of animals (not take them for our own purposes when there is an alternative)."

"When I started Vet school, I was relieved that Tufts started a donor animal program. Donor dogs come in different shapes, sizes and breeds allowing the students to have a more realistic experience of what we will encounter in the clinics. There is no reason to kill healthy animals when clients will donate their loved pets for our benefit."

"As aspiring veterinarians, I think it is critically important that veterinary schools lead the way in promoting progressive thinking about the ethical issues involved in use of animals, particularly lab-bred or otherwise healthy ones for educational purposes. Awareness of the issues surrounding the controversy should absolutely be a part of a veterinary education. I am grateful that Tufts recognizes the importance of this awareness and for its support of this notion via the donor animal program."

Obtaining and utilising cadavers for veterinary training is a very sensitive issue, as is the killing of healthy animals for veterinary training. The client donation programs already in place at the Tufts University School of

Veterinary Medicine and other veterinary schools offer useful guidance about the most appropriate way to proceed:

Anonymous, (1999), "Veterinary students create their own alternative surgery lab, AVAR assists", ***Alternatives in Veterinary Medical Education,*** **Issue 12, p. 3.**

"Twelve third-year veterinary medical students at the University of California, Davis (UCD), participating in the 'alternative' program, wanted the soft tissue surgery training laboratory experience not currently offered to them. These students did not want to participate in the standard surgical laboratory because only live dogs who are killed after the laboratory are used. So, they created their own surgery training laboratory, instead, using cadavers of animals who died for medical reasons.

The 'alternative' laboratory provided students with the opportunity to learn numerous surgical procedures, such as chest tube placement, emergency jugular vein access/catheterization, nasal insufflation, skin grafts, epidural injection, bone marrow biopsy, liver biopsy, feline perineal urethrostomy, and various eye procedures, to name a few."

"The Body Will donation program is much the same as the one in human medicine where a body is donated after the patient has died because of medical reasons. Anyone interested in the Body Will program can contact the Student Animal Welfare Committee at UCD, School of Veterinary Medicine, Davis, CA 95616."

Loew, F., (Dean, Tufts University School of Veterinary Medicine), (1989), "Tufts develops alternative program for teaching surgery", ***Journal of the American Veterinary Medical Association,*** **Vol. 195, No. 7, pp. 868 – 870.**

"Within only weeks until the alternative laboratory course was to begin, it was discovered that the program to collect client-donated cadavers had not been started when promised, because some faculty believed that it was insensitive to ask clients to donate their pets' remains. … Fortunately, the administration stepped in; a client-donated cadaver program was begun and the alternative laboratory proceeded. As it turned out, many people were willing to donate their pets' remains and were pleased to have helped spare the life of another animal."

Kumar, A., Murtaugh, R., Brown, D., Ballas, T., Patronek, G., & Clancy, E., [In Press], "Client donation program for acquiring dogs and cats to teach veterinary gross anatomy", ***Journal of Veterinary Medical Education.***

This paper includes the leaflets that are given to Tufts clients outlining the various options available to them for the euthanasia and disposal of their pets' remains. The following text from one such leaflet beautifully demonstrates how these leaflets can be both sensitive towards clients' feelings and at the same time effective at encouraging them to donate their pets' remains for teaching purposes:

"One special option Tufts offers its clients is the Client Donation program. If your animal companion has received medical care at Tufts University School of Veterinary Medicine, you may choose to donate your pet's remains to the Veterinary school to be used for teaching purposes. Donating your pet's remains to the Veterinary School can be a way of letting the spirit of your pet live on through the education of future Veterinarians, who are being trained to heal other animals. Additionally, client participation in the program eliminates the need to euthanize a healthy animal for this training. Animal cadavers are invaluable in teaching Vet students about animal anatomy and the skills they need to master in order to become competent Veterinarians. If you choose the donation option, another drug will be injected in your pet's vein at the time of euthansia, in order to prevent blood clotting. This drug does not cause any pain or discomfort. Clients who select the donation option are not charged for the euthanasia or the disposal of the body."

Patronek, G., (Director, Tufts Center for Animals and Public Policy), (1999), "Tufts University School of Veterinary Medicine Client Donation Program", ***Alternatives in Veterinary Medical Education,*** **Issue 11, pp. 2-3.**

"In the Tufts teaching hospital, the pragmatic discussion about body donation is not in any way coupled to the medical and ethical decision to euthanize a pet. It is only after the decision to euthanize the pet is made by the client in consultation with the attending veterinarian that the options regarding disposal of the body are typically discussed, so there is very little marketing of the program in advance of death.

A printed list indicating each of the options (cremation with or without return of ashes, hold for burial, or hold for donation) is available for clinicians to give clients. Hospital staff are encouraged to provide clients with this list of options, but due to the sensitive nature of the subject and the variation in individual situations, it is not mandatory. An advantage of the printed list is it streamlines the process for the clinician, and in some cases may make the discussion easier. Also, information on the pet loss support hotline is provided on the list. Once the donation is made, clients are not provided any further information on how their pet's body will be used.

It is not considered appropriate to mandate that every client be presented with the body donation option. Due to the sensitive nature of the decision to euthanize a pet, and the various circumstances under which euthanasia may occur, we feel it best that any such discussion be left to the discretion of the attending clinician. For example, some clients may already have a plan that has been expressed to the clinician (e.g. home burial), in which case additional discussion could be insensitive."

"The program does require continual effort and regular attention by clinicians and faculty to ensure that there are enough donations to meet teaching needs, even in a hospital with a large caseload. Despite the logistical challenges, we feel that the benefits far outweigh the disadvantages. The response from students, as well as clients, to this program has been very positive. The case records of animals used for anatomy dissection (with client information deleted), including laboratory reports, are provided to the students to make anatomy and other basic sciences more clinically relevant. Dr. Kumar believes that this personal touch makes the students more careful in their dissection since they realize they are learning on a pet that was once a loved member of someone's family."

Anonymous, (undated), "Euthanasia and the body donation program", [brochure], Texas: Texas Veterinary Medical Center, College of Veterinary Medicine, Texas A&M University.

Anonymous, (undated), "Euthanasia and body donation consent form", [form], Texas: Texas Veterinary Medical Center, College of Veterinary Medicine, Texas A&M University.

Anonymous, (undated), "When it's time to say "goodbye" ", [brochure], California: UC Davis School of Veterinary Medicine Student Animal Welfare Committee.

Anonymous, (undated), "Animal use in veterinary medical education", [booklet], Wisconsin: University of Wisconsin-Madison School of Veterinary Medicine.

Anonymous, (undated), "Animal anatomical gift form", [form], Wisconsin: University of Wisconsin-Madison School of Veterinary Medicine.

These sensitively-worded brochures, booklets and body donation consent forms describe the client donation programs operating at the veterinary schools of the Texas A&M University, UC Davis and the University of Wisconsin-Madison respectively.

Part B: Cadaver surgery at the University of Sydney Faculty of Veterinary Science

[2001 update:

- In 2000 the University of Sydney Faculty of Veterinary Science became the first Australian veterinary college to completely eliminate ALL terminal surgical laboratories.
- In 2001 the Faculty introduced a pound dog neutering program into its surgical curriculum, in which dogs from a local pound are neutered by students under supervision and returned for adoption. The program is very popular with students, who are gaining invaluable experience at sterilisations – the most important surgeries new graduates need to be proficient in - with some students reportedly choosing to perform extra sterilizations during their semester breaks.]

Within Australia, the University of Sydney Faculty of Veterinary Science has recently reviewed its terminal veterinary surgical laboratories. Reasons included the impacts of NSW legislative changes, the concerns of the University, students and the general public about the use of live dogs in terminal practical classes, and some publicity in the popular press.

The review report proposes a *Faculty Policy for Animal Use in Teaching Applied Anatomy, Small Animal Surgery and Anaesthesia*, and refers to the *Faculty Guidelines for Conscientious Objection in Teaching and Assessment*, presently under development. It concludes with 11 recommendations outlining the introduction of alternatives. The approval and implementation of this May 2000 report by the University of Sydney is still underway, but in my view its exceedingly forward thinking and progressive proposals have set the standard for the future of Australian veterinary surgical training. I have gained the permission of the Working Party Chair to distribute this report, and I have enclosed it in its entirety for your information in the appendices.

Recommendations include:

"1) That live-dog applied anatomy and surgery practical classes be replaced by classes using cadavers, tutorials and models (numbers required similar to Term of Reference 1)."

"5) That clinical small animal case exposure be increased by at least 50% to make up for the absence of live dogs in practical classes."

*"That the Faculty**,** in collaboration with the Veterinary profession wherever possible:*

7) Design a list of options for practical classes to accommodate different philosophical viewpoints. Regardless of the option taken, all practical classes will be supported by group discussions and experience in the University Veterinary Centres.

Options might include:

A) Structured practical classes which may involve the use of live animals where educationally appropriate.

B) As above, with students who abstain from classes using live animals being required to fulfil objectives from those practical classes using other teaching aids or resources.

C) As above, with students who abstain from classes using dogs from particular sources given access to cadavers of client-owned pets (dogs, cats, other) which have been donated specifically for the purpose of teaching.

D) Animal-based practical classes being replaced with a schedule of compulsory attendance at an approved, external clinic in order to fulfil specific learning objectives."

"8) act immediately to create a position to organise and co-ordinate extramural practical work and various clinical 'out-rotations', as agreed already by Faculty resolution, thereby expanding the list of clinics participating in Option D. A person should be appointed on nomination to serve in that capacity until the normal application and appointment process is completed."

"11) institute a mechanism for members of the general public to donate the bodies of their pets (dogs, cats and other) for teaching purposes, based on the model used by the Medical school for the collection of human cadavers. Resources be made available to prepare these animals adequately for storage, and to create a cadaver 'bank'."

The Faculty of Veterinary Science has already managed to accommodate at least one of its existing surgical students who was unwilling to participate in terminal surgical laboratories by allowing that student to perform simulated surgeries on ethically-sourced cadavers. After discussions with a practicing veterinarian the Faculty obtained two cadavers from privately-owned dogs that were euthanased for chronic orthopaedic problems and behavioural problems respectively (see email in the appendices).

APPENDIX I: Complete papers etc.

[The papers and other documents comprising Appendix I are currently not included on this internet version of the submission. For copies of the documents, please order them through an academic library, or contact InterNICHE.]

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APPENDIX II: University of Sydney documents

WORKING PARTY ON THE USE OF ANIMALS FOR TEACHING APPLIED ANATOMY, SMALL ANIMAL SURGERY AND ANAESTHESIA

FINAL REPORT

22nd May 2000

Membership of Working Party:

Geraldine B Hunt (Chair), Department of Vet Clinical Sciences, B10
Paul Hopwood, Department of Veterinary Anatomy, B01
David Simpson, Department of Vet Clinical Sciences, B10
Robert Ratcliffe, Laboratory Animal Services, B19
Cathy Schuller, Veterinary Ethicist, B01
Merran Govendir, Department of Veterinary Clinical Sciences, B10
Georgie Phillips, General Staff, Veterinary Clinical Sciences, B10
Justin Choo, Student Representative, B01
George James, Sylvania Veterinary Hospital
Paul Hansen, AVA Representative,
Keith Edwards, Cat Protection Society

Co-opted Members:

Professor CR Bellenger, University College, Dublin
Lucy Fish, Student Representative, B01

Background:

This working party was convened in response to a number of issues, the most pressing being the fact that following changes to state legislation, the Faculty Executive Committee recommended that no live dogs be used for teaching surgery by the Faculty in 2000. The University, students and members of the public had also expressed concerns about the use of live dogs in terminal practical classes, and the issue received a considerable amount of publicity in the popular press. Debate within the Working Party was initially based upon the assumption that live dogs would not be available for any student practical classes, but was subsequently refined to allow live dog use where there were compelling reasons.

As part of its Strategic Plan, the Faculty is committed to developing teaching strategies to improve the learning environment, guided by a concern for animal well being, developing detailed learning objectives for each unit of study, increasing flexibility and diversity in teaching and learning methods and improving student perceptions of teaching and learning. It is also committed to improving facilities at Sydney and Camden for animal care and student teaching. It was felt that recommendations made by this working party might assist the Faculty in the above objectives, and provide some guidance as to areas where facilities may be improved.

The Faculty has an obligation to ensure that it produces registrable graduates. Practical classes consistently rate highly in undergraduate and graduate surveys (including the 1999 exit survey of 5th Year), and the practical experience offered at the University of Sydney is a significant draw card for fee paying students, upon whom the Faculty notes in its Strategic Plan that it will become increasingly reliant in the future.

Terms of Reference

1. a: To evaluate the current use of dogs in teaching **applied anatomy, small animal surgery and anaesthesia** to 3rd, 4th and 5th year students and assess the minimum numbers of dogs that could be used to deliver the current teaching program.

b: To evaluate the ongoing availability and role of blood donor greyhounds at the UVCS

2. To assess ways of decreasing the use of live animals in surgical teaching and evaluate the possible use of dead dogs or alternative live species (and investigate numbers and timing) to undertake some of the current practical classes.

3. To investigate alternatives to the use of non-recovery live animals in surgical teaching, in particular the involvement of students in de-sexing dogs on behalf of clients/welfare organisations.

4. a) To assess the use of alternatives to animals in some areas of surgical teaching and b) make recommendations about development of a cohesive and effective policy for surgical teaching that recognises the objections of animal welfare groups.

Mechanisms by which the Terms of Reference were addressed

1: Discussion amongst core committee members
2: Considering information provided by co-opted members
3: Establishing core Learning Objectives for each of the affected Units of Study and identifying areas where certain options were preferable to others
4: Soliciting input from the student body and veterinary profession in response to email, and updates in the AVA newsletter.
5: Further research by committee members in response to information/suggestions

Addressing the Terms of Reference:

Term Of Reference 1:

a (part 1): To evaluate the current use of dogs in teaching applied anatomy, small animal surgery and anaesthesia to 3rd, 4th and 5th year students.

Dogs requested for Applied Anatomy in 1999:

12 classes (First semester 1999). 8 dogs per class = 96 dogs.

Dogs requested for Small Animal Surgery and Anaesthesia:

3rd Year:

3 classes x 2 dogs = 6 dogs
9 classes x 10 dogs = 90 dogs

4th Year:

Soft tissue surgery:

12 classes x 10 dogs = 120 dogs

Orthopaedic Surgery:

9 classes x 10 dogs = 90 dogs

5th Year:

All classes in 1999 replaced with live sheep

6 classes x 6 sheep = 36 sheep

TOTAL **= 402 dogs.**

36 sheep.

1 a (part 2): assess the minimum numbers of dogs that could be used to deliver the current teaching program.

And

Term Of Reference 2:

To assess ways of decreasing the use of live animals in surgical teaching and evaluate the possible use of dead dogs or alternative live species (and investigate numbers and timing) to undertake some of the current surgical practical classes.

And

Term Of Reference 4 a):

To assess the use of alternatives to animals in some areas of surgical teaching

After reviewing the Learning Objectives for each unit of Study, the following conclusions were reached:

Abdominal palpation, venepuncture, intubation and cardiopulmonary resuscitation were identified as core skills which could not adequately be taught without using live dogs. In general, students could be introduced to most surgical procedures without using live dogs, however refinement of those skills would have to occur in a live/clinical setting. The Working Party agreed that whatever alternatives to live dog practical classes were offered, students would eventually require practice with live, survival, animals, presumably in a clinical setting, to complete their training.

The Working Party felt that live dogs could be replaced by cadavers for applied anatomy classes, and most surgical exercises, on the understanding that students exposure to clinical surgery was increased to make up any

deficiencies. Introductory anaesthesia training would take place using models, cadavers in certain instances, and a limited number of live-dog demonstrations.

A number of recommendations were made (see **Recommendations 1-6, page 8**).

Term Of Reference 3:

To investigate alternatives to the use of non-recovery live animals in surgical teaching, in particular the involvement of students in de-sexing dogs on behalf of clients/welfare organisations

The Working Party agreed that any proposal involving increased clinical activity, either within the University or externally, should be supported by adequate numbers of staff to ensure adequate supervision. In addition, outsourcing of teaching to external facilities should be accompanied by strict guidelines and Learning Objectives, and co-ordinated by a Faculty member dedicated to the task

The Working Party considered a number of options for increasing student exposure, which fell into the following categories:

1: Increasing throughput of cases for 4th Years at the UVCS (and ultimately for 5th years when the lecture-free final year is implemented). This may be done by expanding pre-existing arrangements with the CPS and Ferret Rescue Society, reducing prices, or increasing opportunity for appointments.

2: Replacing traditional small animal surgery practical classes in 5th year with clinical experience, either by establishing a spey/neuter service at the UVCC to be run by an appointment in small animal surgery at Camden.

3: Establishment of an 'Animal Welfare Centre' on the Veterinary precinct in Sydney, possibly in partnership with one or more welfare agencies, with development of a veterinary facility that could offer desexing, behavioural advice and input into other animal welfare issues. Funding might be sought jointly from Local and State Government and Industry.

4: Exploring further the idea of establishing a teaching centre on site at the RSPCA facility at Yagoona and investigate ways of soliciting private and Government funding for this.

5: That some teaching of small animal surgery and anaesthesia be included in learning outcomes for students undertaking extramural clinical practical work.

A number of recommendations followed (**Recommendations 7-11,** page 8).

Term Of Reference 4:

4. a) To assess the use of alternatives to animals in some areas of surgical teaching and b) make recommendations about development of a cohesive and effective policy for surgical teaching that recognises the objections of animal welfare groups. (See **Policy Statement**, page 6).

POLICY FOR ANIMAL USE IN TEACHING APPLIED ANATOMY, SMALL ANIMAL SURGERY AND ANAESTHESIA

Background Statement

The Faculty of Veterinary Science at Sydney University aims to produce veterinarians with a registrable qualification, who are competent and confident and compassionate to the animals under their care. Implicit in a career choice in veterinary science is a concern for the health and welfare of animals.

Two of the most demanding aspects of veterinary practice are anaesthesia and surgery. Both are inherently risky and can have a profound impact on animal welfare. Usually animal health and function are improved. However, without proficiency on the part of the veterinarian, existing risks for the patient are multiplied. An animal may suffer complications which may result in permanent impairment or death. Clearly, there is a direct correlation between veterinary skill in anaesthesia, resuscitation and surgery, and animal welfare. Graduates must, as a matter of ethical and legal necessity (Veterinary Surgeons' Act), attain a sufficient level of competency to be able to perform certain procedures without supervision immediately upon graduation. To this end it is widely agreed that they must have live animal experience during their course.

Students must develop an understanding of the anatomy and spatial relations between organs, musculature and blood supply, and understand how surgical intervention alters these relationships. Additionally, student surgeons must acquire manipulative skills and a high level of dexterity.

The student must also undergo psychological preparation for this work in order to develop an appropriate level of confidence. To some people, surgery is disturbing and requires training to overcome an inherent unwillingness to create injury, even when those actions are a means to recovery of a given animal. The Veterinary Faculty is aware of its responsibility to ensure that students do not become inured to suffering. The tenor of practical classes should therefore reflect an ethical concern for animals as well as a compassionate philosophy.

Policy

Use of animals in these Units of Study will adhere to principles stated in the NH&MRC Code of Practice for Care and Use of Animals For Scientific Purposes (http://www.usyd.edu.au/su/vetfac/faculty/index.htm).

Policy
Policy
1) All animals should be treated, and referred to, with care and respect, whether conscious or anaesthetised, alive or dead.

2) Students should be made aware of legal requirements and ethical arguments pertaining to their use.

3) The necessity of using live animals must be constantly evaluated against learning objectives and the impact on the animal. Live animals should only be used where suitable alternatives do not fulfil the educational objectives and learning outcomes or it is felt that alternatives will engender overconfidence or a false sense of competence in students.

4) Where live animals are considered essential for fulfilling learning outcomes, the minimum number possible should be used, and the impact on each animal minimised.

5) Students should be taught that alternatives are not necessarily an inferior substitute to live animals, indeed they may be superior in some instances, they may complement the use of live animals and may provide a useful adjunct.

6) The Faculty should continue to keep up to date with the development of alternatives to live animal use in teaching and regularly review its use of these alternatives.

7) One species should not be substituted for another on the basis of different perceived (and possibly erroneous) attitudes towards them. The species should be used that best enables the learning outcomes to be fulfilled.

8) The Faculty continues to be considerate of staff and students with varying philosophical viewpoints.

9) The Faculty continues to involve all interested parties in the formulation of policy, and show leadership and confidence in the ethical position it adopts.

Options for Practical Classes According to Philosophical Viewpoints

The Faculty recognises that students and staff have the right to object to certain activities on the basis of their beliefs, and will make other options available for students to fulfil the requirements of the Applied Anatomy, Surgery and Anaesthesia Units of Study, depending upon their philosophical views. Whichever option is chosen, it is understood that the learning and assessment process will be equally rigorous. Students should refer to the *Faculty Guidelines for Conscientious Objection in Teaching and Assessment* for information on how to proceed further. Students should indicate to the Head of Department responsible for each unit of Study which option they wish to take prior to the start of the semester in which the Unit of Study is offered, and discuss the reasons for choosing this option. This will enable the Faculty to identify, and be responsive to, changing attitudes in the community and student body.

GENERAL RECOMMENDATIONS:

1) That live-dog applied anatomy and surgery practical classes be replaced by classes using cadavers, tutorials and models (numbers required similar to Term of Reference 1).

2) That two greyhounds per week be used by the anaesthesia department for teaching and clinical services such as blood collection.

3) That, in accepting cadavers from Blacktown Pound:

- The Faculty only accepts dogs that have been treated humanely and processed in strict accordance with the Companion Animals Act.
- Dogs should be injected intravenously with a dose of pentobarbitone, which will reliably produce death (at least 200 mg/kg).
- Two thousand IU of heparin per dog should be included in the euthanasia solution.
- In fractious animals, premedication with Acepromazine (0.05 – 0.2 mg/kg SC) should take place 30 minutes prior to euthanasia.
- Dogs should be delivered to the University as soon as possible after death, preferably within 2 hours.
- Records should be kept for all cadavers being brought to the University and in the event that the dogs had some form of identification, the Pound should provide evidence to prove that the stipulations of the Companion Animals Act had been followed.

4) That the Faculty purchase the following, commercially available, models in order to enable evaluation and integration into the Anaesthesia teaching program.

Canine head and neck (DOGH1)
US$450.00 skin and tubing extra
www.calf.vetmed.ucdavis.edu

Canine foreleg (DOGL1)
US$295.00 skin and tubing extra
www.calf.vetmed.ucdavis.edu

K-9 IV trainer
US$425.00
www.rescuecritters.com

K-9 Intubation trainer
US$495.00
www.rescuecritters.com

Advanced Airway Jerry K-9 CPR Mannikin
US$1395.00
www.rescuecritters.com

5) That clinical small animal case exposure be increased by at least 50% to make up for the absence of live dogs in practical classes.

6) That replacement of live dogs with other live species not be undertaken on ethical and educational grounds (see Policy Statement, page 6).

That the Faculty**,** in collaboration with the Veterinary profession wherever possible:

8) Design a list of options for practical classes to accommodate different philosophical viewpoints. Regardless of the option taken, all practical classes will be supported by group discussions and experience in the University Veterinary Centres.

   Options might include:

   A) Structured practical classes which may involve the use of live animals where educationally appropriate.

B) As above, with students who abstain from classes using live animals being required to fulfil objectives from those practical classes using other teaching aids or resources.

C) As above, with students who abstain from classes using dogs from particular sources given access to cadavers of client-owned pets (dogs, cats, other) which have been donated specifically for the purpose of teaching.

D) Animal-based practical classes being replaced with a schedule of compulsory attendance at an approved, external clinic in order to fulfil specific learning objectives.

8) act immediately to create a position to organise and co-ordinate extramural practical work and various clinical 'out-rotations', as agreed already by Faculty resolution, thereby expanding the list of clinics participating in Option D. A person should be appointed on nomination to serve in that capacity until the normal application and appointment process is completed.

9) continue negotiations with the RSPCA, Animal Welfare League, Cat Protection Society, Ferret Rescue Society and other welfare organisations or interested individuals to enable more exposure of students to surgery, either in their clinics, or by making animals available to the Veterinary Centres for desexing.

10) pursue the option of creating a clinic at Camden (and possibly also Sydney) for speying and castration of companion animals belonging to the general public.

11) institute a mechanism for members of the general public to donate the bodies of their pets (dogs, cats and other) for teaching purposes, based on the model used by the Medical school for the collection of human cadavers. Resources be made available to prepare these animals adequately for storage, and to create a cadaver 'bank'.

Jun. 2000 email exchange between Andrew Knight and Dr Geraldine Hunt, Head of Department, Department of Veterinary Clinical Sciences, University of Sydney, re: ethically-sourced cadavers obtained for use by University of Sydney conscientiously-objecting vet students

At 07:22 AM 6/06/2000 , you wrote:
Hi Geraldine.

Was talking to Lucy [conscientiously-objecting vet student Lucy Fish at the University of Sydney] and she said that you've managed to locate some ethically-sourced cadavers for her to use. That's wonderful! … Can I ask:

- where you obtained your cadavers
- why they were euthanased or died
- how many you got
- what Lucy and others will use them for?
…

Best wishes, Andrew

At 11:36 AM 6/6/00 +1000, you wrote:
Dear Andrew,

The dogs were sourced from a private owners after discussions with a veterinarian in practice. The owners delivered them to the Clinic here and after completing paperwork to confirm the reason for euthanasia, and inform the owners that the bodies may be used for teaching, I euthanased the dogs. At this stage I only have two, so it is early days yet! My intention is to run the surgery pracs as normal, but allow people with conscientious objections to using pound-sourced dogs have these cadavers instead. They will be frozen prior to use if they cannot be euthanased close to the time of the practical class. I must say, having started this program, that it will be very time consuming to co-ordinate it and do it properly. Hence if we are to ever compile a reasonable bank of such cadavers the University (or someone) will need to commit some extra resources to it.
…

All the best,
Geraldine

At 10:17 PM 6/06/2000 , you wrote:
Thanks very much Geraldine.

Can I tell my academics here/others about this?
Can I also please ask why the dogs were euthanased?
…

Thanks and best wishes, Andrew

At 02:31 PM 6/6/00 +1000, you wrote:
Dear Andrew,

It's fine to tell people. One dog was euthanased for chronic orthopaedic problems and the other had behavioural problems,
Geraldine