MR. SWEENEY: Your Honor, petitioner calls Dr. Clint Glenn Pettifer.

CLINT GLENN PETTIFER

having been called as a witness in the above matter, and after having been first duly sworn, was examined and testified as follows:

VOIR DIRE EXAMINATION

BY MR. SWEENEY:

Q. Good afternoon, Dr. Pettifer?

A. Good afternoon.

Q. Could you please state your full name for the record?

A. Glenn Robert Pettifer.

Q. And what is your occupation?

A. I am a veterinarian and I am assistant professor of anesthesiology at the school of veterinary medicine at LSU in Baton Rouge.

Q. Okay. And what specialized field of

veterinary medicine do you practice?

A. The specialty of veterinary anesthesiology.

MS. ESTIPONAL: Your Honor, at this time, I'd like to pose an objection to Dr. Pettifer's testimony. As I understand it Dr. Pettifer is a veterinarian. We have already had expert testimony from an MD anesthesiology expert on the issue of the lethal injection drugs.

And I am unsure what relevance Dr. Pettifer's testimony has to the issue of the lethal injection being cruel and inhuman, unusual punishment on the Eighth Amendment as raised in this case.

MR. SWEENEY: Your Honor, may I respond?

THE COURT: You may.

MR. SWEENEY: Thank you. As an initial matter, Dr. Pettifer will show that he has specific knowledge of each of the drugs used in the lethal injection process. Moreover, the testimony will show that one of the agents used in the lethal injection process, pancuronium bromide, is specifically prohibited as a method of euthanasia by statute in the State of Louisiana. And that the first drug, sodium

pentothal as a matter of practice is never used in animal euthanasia.

I submit, Your Honor, that if we can't use -- or if the evidence will show that these chemicals cannot be used to put an animal to death, then by logical extension they should not be used to execute a human being. I think that issue is really, you know, I think the evidence we'll hear today will be on those drugs and their prohibition in the use of

animal euthanasia, are directly relevant to the question of whether lethal injection violates the cruel and unusual punishment of the Eighth Amendment.

Previously the State has attempted to distinguish some other testimony on grounds that there was no one here talking about killing anything. Well, we have someone who has killed many living creatures.

THE COURT: But not human beings?

MR. SWEENEY: No.

THE COURT: Do you have any case law that will support a veterinarian testifying as an expert in a death penalty case in Louisiana or anywhere else?

MR. SWEENEY: I don't have the case on me, but I know in Abdur'Rahman vs. Workman, a case out of Tennessee, in a similar proceeding a veterinarian was permitted to testify to this issue. This is the first time in Louisiana though, Your Honor.

THE COURT: The Court sustains the objection to this witness testifying. Do you want to make a proffer outside the presence of the Court?

MR. SWEENEY: Yes, Your Honor, we would like to do that.

MS. ESTIPONAL: Thank you, Your Honor. I'm

not sure if the Court would allow us to continue to use the courtroom in your absence.

THE COURT: I am going to step out and leave y'all here to question or not question the witness, and when they finish then, Mr. Bailiff, you let me know.

THE BAILIFF: All rise, please.

(Whereupon, the Court excused herself and the proffer begins.)

PROFFER EXAMINATION

BY MR. SWEENEY:

Q. Doctor, I think we left off I was asking what is veterinary anesthesiology?

A. Well, anesthesia as the science applies to the practice or the science techniques involved in rendering animals unconscious and creating a condition where they are free from pain during surgical procedures.

Q. Okay. Doctor, I'm going to hand you what's been marked as Exhibit Number 175. I have provided a copy to the State previously. And what is this a copy of?

A. This is a copy of my curriculum vitae.

Q. And does this document accurately reflect your education, qualifications, training and experience?

A. Yes, it does.

Q. Dr. Pettifer, what is your educational background?

A. I have an honors BA in psychology, a BSC in zoological sciences, a doctorate of veterinary medicines, then a doctorate in veterinary science.

Q. Doctor, can you tell us about the American College of Veterinary Anesthesiologist?

A. The American College of Veterinary Anesthesiologist is the board that supervises the specialized training and examination and certification of specialists in veterinarian anesthesiology.

Q. Okay. Do you have any special certification from the American College of Veterinarian Anesthesiologist?

A. Yes, I am certified by the American College of Veterinarian Anesthesiologist.

Q. Do you have any other roles or perform any other functions for the AMVA?

A. For the ACVA?

Q. ACVA, right.

A. I'm currently chairperson for the examination committee, and I also sit on the board of directors.

Q. Doctor, are you a member of any professional organizations?

A. Yes, I'm a member of the American Veterinary Medical Association, the Canadian Veterinary Medical Association, the International Association for the study of pain, member of the Veterinarian Emergency & Critical Care Society, and I'm a member of the International Alliance of Teaching Scholars.

Q. And do you present at association meetings?

A. I do.

Q. Do you practice in the field of veterinarian anesthesiology?

A. I do. Part of my appointment at the

Louisiana State University is a clinical appointment in the veterinary teaching hospital.

Q. Okay. Approximately how many anesthetic procedures have you performed this past year?

A. Probably in the neighborhood of 5- to 600 per year would be an average number.

Q. Okay. Do you have any teaching positions in your field?

A. Yes. As I said I'm the assistant professor

of the anesthesiology at the school of veterinarian medicine.

Q. Have you previously held any teaching positions?

A. Right. Prior to coming to LSU, I was assistant professor of anesthesiology at the Ontario Veterinarian College in Ontario, Canada. And then prior to that I was a clinical instructor at the University of Georgia in Athens, and then prior to that I was a clinical instructor at the University of Saskatchewan.

Q. And what does your work at LSU entail?

A. Half of my time is spent supervising the administration of anesthesia to a wide variety of species. Animals that are presented to the teaching hospital at the school of veterinarian medicine, and the other half of my appointment is involved in didactic teaching and research?

Q. And can you recall some of the journals in which you have published?

A. The American Journal of Veterinary Research, the Journal of the American Vet Medical Association, the Journal of Veterinary Anesthesia and

Analgesia, the Canadian Journal of Veterinarian Research, the Canadian Veterinary Journal.

MR. SWEENEY: For this proffer we would like to have Dr. Pettifer's curriculum vitae included in the record.

MS. ESTIPONAL: No objection.

Q. (By Mr. Sweeney) Dr. Pettifer, in your professional field are you familiar with the chemical sodium pentothal?

A. I am.
Q. Is that also known as sodium thiopental?
A. It is.
Q. Can you briefly describe the chemistry of sodium pentothal?
A. Sodium pentothal belongs to the broad class of drugs known as barbiturates and sodium -- sodium thiopental is known as an ultra-short acting barbiturate.
Q. Okay. And what is meant by the term ultra-short acting?
A. It refers to the duration of action of the drug following the administration of a single dose.
Q. Do you know whether sodium thiopental is a controlled substance?
A. It is.
Q. In your professional field, Doctor, are you familiar with the chemical, sodium pentobarbital?
A. Yes, I am.
Q. And what is sodium pentobarbital?
A. It is also a barbiturate, although, it belongs to the class of short acting barbiturates rather than the class of ultra-short acting

barbiturates.

Q. So sodium pentobarbital is not the same chemical as sodium pentothal?

A. No, no.

Q. And what is the difference between sodium pentobarbital and sodium pentothal?

A. In terms of difference in clinical efficacy really the most striking difference would be the difference in the duration of action following the

administration of a single dose of either of those two drugs.

Q. And sodium pentobarbital is the longer acting of the two?

A. Correct.

Q. So it would be accurate to say that the anesthetic effect of sodium pentobarbital lasts longer than the anesthetic effect of sodium pentothal?

A. Correct.

Q. Doctor, in your professional field are you familiar with the chemical, pancuronium bromide?

A. I am.

Q. And what is pancuronium bromide?

A. It is a non-depolarizing neuromuscular blocker.

Q. And what is meant by non-depolarizing?

A. The neuromuscular blockers that belong to the same class as pancuronium bromide exert their effect by occupying the receptor sites on the muscle tissue that is normally activated by the chemicals that are released by the nerves during neuromuscular transmission.

Q. Okay. And do you know what effect -- may

be if you -- do you know what effect pancuronium bromide has when administered to mammals?

A. Generally the effect is that it produces skeletal muscle paralysis. So what that means is that the animal is rendered unable to move to use any -- to demonstrate any skeletal muscle function at all and also unable to ventilate or breathe.

Q. Okay. In your professional field are you familiar with the chemical potassium chloride?

A. Yes.
Q. And what is potassium chloride, Doctor?
A. Potassium chloride is an electrolyte solution containing both potassium and chloride.
Q. And Doctor, are you aware that three of these chemicals, sodium pentothal, the Pavulon and the potassium chloride are used in the process of lethal injection in Louisiana?
A. I am.
Q. Doctor, I'm going to ask you a few questions now about your experience with veterinary euthanasia.
A. Sure.
Q. How many veterinary euthanasia procedures have you performed in your professional career?
A. In my career in the neighborhood of thousands.
Q. And just briefly, what types of animals have you euthanized?
A. I have been involved in euthanasia of elephants, horses, cattle, sheep, goats, pigs, dogs, cats, rabbits, pretty much any, you know, animal that is kept in confinement can be at risk of euthanasia.

Q. Okay. And do you have experience with the administration of anesthesia during veterinary surgery?

A. I do.

Q. In your career how many veterinary surgical procedures have you provided anesthesia for?

A. Probably tens of thousands.

Q. And again briefly, what type of animals have you provided anesthesia for during surgery?

A. All of those that I enumerated previously plus giraffes, primates, large lowland gorillas, tigers. Mike the Tiger is a client of mine, and then all of the other domestic species like horses, cattle, dogs, cats.

Q. Okay. Dr. Pettifer, in your work as a veterinary anesthesiologist in what types of settings would you administer anesthetic agents?

A. We as veterinarian anesthesiologists, we are called upon to provide anesthesia that can be administered for the purpose of providing just chemical restraint for a particular diagnostic procedure, or we may be asked to provide anesthesia, general anesthesia, for a surgical procedure and then there are occasions where we are asked to provide anesthesia for the purpose of euthanasia.

Q. Okay. And is there any common purpose for anesthesia among these various procedures?

A. Generally anesthesia is used for restraint and then to provide unconsciousness and then also freedom from pain during any particular procedure.

Q. Before addressing euthanasia in detail I would like to briefly review -- before addressing

euthanasia in detail I would like to briefly review anesthesia in veterinary surgery. How is anesthesia used in veterinary surgery?

MS. ESTIPONAL: I think that is asked and answered.

MR. SWEENEY: I'm asking the witness to more fully flesh out that answer.

A. I can just describe generally the process that is involved.

Q. (By Mr. Sweeney) Sure.

A. Normally, for the provision of anesthesia for surgery the procedure involves first the administration of a premedicant, anti-anxiety drug like Diazepam or Diazelan. And then once the premeds have taken effect then we will move to the stage of inducing general anesthesia which is usually accomplished with an injectable drug.

Once the anesthesia is induced with the injectable drug then we will perform endotracheal intubation which allows us to connect the animal to a gas anesthetic machine which allows us then to maintain the anesthesia with an inhaled anesthetic and then finally at the end of the procedure is the recovery phase, where we discontinue the gas anesthetic and allow the animal to recover.

Q. Okay. In your practice which drug or drugs do you most commonly use in induce general anesthesia in healthy animals?

A. In healthy animals we used thiopental most commonly to induce general anesthesia.

Q. And why do you use an ultra-short acting drug like sodium pentothal to induce anesthesia?

A. Well, the reason that we administer the injectable agent is really just to take the animal to the point where we can perform endotracheal intubation and allow us to connect the animal to the gas anesthetic machine. So we really only want a drug that lasts for a relatively short period of time that allows us to facilitate the endotracheal intubation.

Q. Okay.

A. And we wouldn't want to use a longer acting

injectable drug because then you have the cumulative effect of the injectable drug and the inhaled anesthetic as well.

Q. Okay. Doctor, do you individually assess the animal's physical and medical background before administering anesthesia during surgery?

A. Yes.

Q. And why is that important?

A. It is important because there can be a lot of variation in physiological function or medical positions of the animals that can impact on the dose of drug that we ultimately give.

Q. Okay. Is it necessary to titrate the dose of any drug in the administration of anesthesia during surgery?

A. It is.

Q. And that holds true for sodium thiopental?

A. Correct.

Q. And Doctor, as a recap is it fair to say that the prime reason for the use of anesthesia in surgery is to reduce or eliminate the animal's sensation of pain during the surgery?

A. Correct.

Q. I'd like to shift subjects now, shift to another subject now, and move into a discussion of animal euthanasia.

A. All right.

Q. When we use the term euthanasia, Doctor, what is the definition that you would use as a doctor of veterinary medicine?

A. Well, euthanasia comes from the Greek words eus and thanatos, which means good death. And in the

context of veterinary medicine euthanasia describes the procedure of producing death in an animal without pain or distress.

Q. Has the American Veterinary Medical Association issued any guidelines about acceptable methods and chemical agents used in animal euthanasia?

A. Yes, they have.

Q. Okay. I'm going to approach the witness with Exhibits 178 and 179. They are copies of two Louisiana Revised Statutes. First Revised Statute Article 3, section 2462, and Article 3, section 2465.

Dr. Pettifer, are you familiar with the Louisiana statutes governing euthanasia of animals?

A. Yes.

Q. And do those statutes give any guidance on how euthanasia is to be carried out in the State of Louisiana?

A. Yes. They specifically state that euthanasia methods and procedures must conform with the recommendations outlined in the report of the American Veterinarian Medical Association on euthanasia, dated July 1, 1978 or as revised.

Q. Okay. And Dr. Pettifer is euthanasia

defined in Louisiana Revised Statutes, section 3:2642?

A. Yes, it is, 2462.

Q. And how is it defined in that statute, Doctor?

A. It is defined as the act of inducing a painless death upon an animal in a humane manner.

Q. Okay. I'm going to approach the witness with Exhibit 177, which is the 1993 report of the American Veterinary Medical Association Panel on

euthanasia, and Exhibit 176 which is the 2000 report of American Veterinary Medical Association Panel on euthanasia. Copies have previously been provided to the State. Can you identify these documents, Doctor?

A. Yes. They are different iterations of the report of the AVMA Panel on euthanasia, one from 1993 and the other from 2000.

Q. And are these panel reports revisions of the 1978 American Veterinary Medical Association report on euthanasia?

A. Yes, they are.

Q. So as a practicing Louisiana doctor of veterinary medicine, are you therefore mandated to fellow the AVMA guidelines on the euthanasia of animals?

A. Yes.

Q. Let's look at these guidelines in detail, starting with Exhibit 177, the 1993 panel report. Please turn to the last paragraph on the second page beginning with, quote, for pain to be experienced -- and ending with, quote, regain consciousness prior to death. If you could read that full paragraph out loud for the record.

A. "For pain to be experienced the cerebral cortex and subcortical structures must be functional. An unconscious animal cannot experience pain because the cerebral cortex is not functioning. If the cerebral cortex is nonfunctional because of hypoxia, depression by drugs, electric shock or concussion, pain is not experienced; therefore, the choice of the euthanasia agent or method is of less importance if it is to be used on an animal that is anesthetized or

unconscious provided that the animal does not regain consciousness prior to death."

Q. And Doctor, why is it paramount to avoid having the animal regain consciousness before death?

A. Because if the animal were to regain consciousness prior to the administration of the technique or drug that was going to produce death, it could lead to the animal actually experiencing extreme distress or pain as death ensued.

Q. Doctor, does Exhibit 177, the 1993 report of the AVMA on euthanasia, describe what are acceptable euthanasia methods?

A. Yes.

Q. And where are those descriptions located?

A. They are located in the appendix section tables 1 through 4.

Q. And what is the subject, if you could take us through each of the tables, 1 through 4?

A. Table 1, list the agents and methods of euthanasia that are found acceptable or conditionally acceptable for various species. Table 2, gives a summary of acceptable agents and methods of euthanasia and lists the characteristics of those methods and

their modes of action. And then Table 3, gives a summary of the conditionally acceptable agents and methods of euthanasia and lists the characteristics and modes of action of those conditionally acceptable agents. And then finally Table 4, lists a summary of some of the unacceptable agents and methods of euthanasia.

Q. Is sodium pentothal specifically referenced in any one of these tables?

A. No.

Q. Is there a reference on Table 2 to barbiturates in general?

A. Table 2?

Q. Uh-huh.

A. Yes, there is.

Q. And in Table 1 is there a specific reference to sodium pentobarbital?

A. Yes, there is a specific reference to the use of sodium pentobarbital.

Q. Dr. Pettifer, in your professional experience is sodium pentothal an acceptable agent for animal euthanasia?

A. No.

Q. And why not?

A. Largely because of the duration of action of the drug and also because we have better alternatives.

Q. And when you mean, when you say the duration of the action, what do you mean by that, the duration of action of this specific drug, what is problematic?

A. The short duration of action of sodium

thiopental is of some concern in consideration of the fact that we have barbiturates that are longer acting.

Q. Okay. And you mentioned a superior alternative. What is a superior alternative to thiopental?

A. In our practice pentobarbital.

Q. Are you aware in your practice whether it is common in the field of veterinary medicine to use sodium pentothal, either by itself or in combination

with any other drugs in performing euthanasia?

A. It is very uncommon.

Q. Doctor, is that a practice that you ever engage in?

A. No.

Q. And how many times have you performed euthanasia?

A. Thousands of times.

Q. Let's shift our discussion to Pavulon or pancuronium bromide as it is also called. Is Pavulon an acceptable euthanasia agent?

A. No.

Q. Is it therefore also unacceptable under Louisiana statutes governing euthanasia?

A. Correct. It is not acceptable.

Q. Okay. Dr. Pettifer, I would like to direct your attention to Exhibit 176, the 2000 AVMA report on euthanasia, on what is listed as page 680 of this exhibit. Dr. Pettifer, can you go to the section of that page which is entitled to pentobarbital combinations and can you review that silently?

A. (Witness complies with request.)

Q. What does that section indicate about the

use of neuromuscular blocking agents?

A. It specifically states that a combination of pentobarbital with a neuromuscular blocking agent is not an acceptable euthanasia agent.

Q. In your expert opinion, Doctor, what is the effect that Pavulon might have on an animal that is not properly anaesthetized?

A. Well, because Pavulon can produce neuromuscular paralysis if it is administered in a

manner that allows an animal to be at any level of consciousness when the Pavulon takes effect, the animal will be completely paralyzed so that it is unable to move its limbs at all, but more importantly it is unable to breath or ventilate. So essentially the animal will suffocate, and if the animal is conscious at that time, it would experience extreme distress and pain.

Q. Doctor, when you contract a muscle, a voluntary muscle, is it correct to say that a nerve impulse originates in the brain and goes down the nerve fibers to the muscle?

A. Correct.

Q. And then the nerve impulse goes from the brain down to the muscle that is to be contracted; is that correct?

A. Yes.

Q. And when the nerve impulse reaches the nerve ending, the neuronal endings as they are also called, at that muscle tissue, is there a chemical reaction that occurs and causes the muscle to contract?

A. That's correct. There are chemicals that

are released by the nerves that stimulate receptors on the muscle tissue then that ultimately leads to the muscle contraction.

Q. Now, Doctor, with the neuromuscular blocking agent, am I correct in understanding that the neuromuscular simply blocks the final step in the process?

A. Correct. The neuromuscular blocking agent actually blocks those receptors that I just spoke

about and it prevents the chemical that's released by the neuron, by the nerves from actually binding to the receptors and causing muscle contraction.

Q. Does it block the actual creation of the nerve impulse in the brain?

A. No.

Q. And does it block the passage of that nerve impulse through nerve to the final point?

A. No.

Q. All right. So there is no effect on the brain itself?

A. No.

Q. So by extension would it have any effect on the perception of pain?

A. No.

Q. An injection of Pavulon does not anesthetize an animal from feeling pain?

A. That's correct. It only produces paralysis.

Q. Could you explain the reasons for not using Pavulon or pancuronium bromide as it is also called in any respect as an agent in euthanasia in animals?

A. Well, if it were used as the only agent to

produce euthanasia essentially what you would be doing would be just paralyzing the animal and preventing it from breathing and the animal would die of hypoxemia, oxygen deficiency, but would be entirely conscious.

One of the -- if it is used in combinations, one of the concerns or one of the concerns that surround the use of it in combination is that it can -- because it produces paralysis, actually produces what some people will refer to as a chemical

vail over the animal's level of consciousness. So if the animal is paralyzed and not able to move any skeletal muscles, then it becomes impossible for the veterinarian to determine the level of consciousness in the animal.

Q. And Doctor, what is your experience as the most common method of euthanasia of animals?

A. In my experience the most common method is the administration of an overdose of sodium pentobarbital.

Q. And what kind of experience of pain and suffering would an animal injected with sodium pentobarbital go through?

A. There should be none.

Q. And how is the sodium pentobarbital administered into the animal's body?

A. In most cases it is administered intravenously.

Q. And is that in one injection?

A. In a single injection, yes.

Q. Okay. I'd like to switch gears again to your other area of practice relating to your use of chemical agents. Are neuromuscular blocking agents

ever used in surgery on animals?

A. Occasionally, yes.

Q. And could you describe for what purpose neuromuscular blocking agents would be used in animal surgery?

A. We tend to use them most frequently in cases that involve surgery of the eye, because it is very important during surgery of the eye that the eye remain motionless as the surgeon is carrying out

whatever surgical procedure he or she is doing. So when we administer the neuromuscular blocking agent, it paralyzes the ocular muscles and the eye rotates up centrally into the globe and then just will sit there and not move for the duration of effect of the neuromuscular blocking agent.

Q. And what conditions are required in using a neuromuscular blocking agent in animal surgery?

A. When you use neuromuscular blocking agents it puts special demands on your monitoring capabilities because in the non-paralyzed animal during anesthesia, we tend to rely on physical movements like the respiratory movement or changes in the respiratory pattern as indicators of the depth of anesthesia or even movement of the limb would certainly be an extreme indicator that an animal was too light.

So that if we are carrying out a procedure that involves neuromuscular paralysis, we lose the ability to monitor those types of signs. So we have to be a bit more aggressive, and then we tend to rely on changes in blood pressure and heart rate. That's indicators of changes in depth of anesthesia.

Q. And how do you go about assessing blood pressure, you know, as measuring anesthetic depth?

A. Right. Well, there are some species variation in how we do it but typically say in horses, for instances, it involves placing a catheter in a peripheral artery and then connecting that catheter to a fluid filled line that is connected to a pressure transducer that is connected to a monitor and then it transduces the pressure in the tubing to an electrical

signal which is then displayed on the screen.

Q. And did you also say that you assess the monitor, you monitor the heart rate as another --

A. Correct. And the heart rate can be monitored with an electrocardiogram.

Q. Okay. Doctor, is it fair to describe that when the environment -- is it fair to say that when you use a neuromuscular blocking agent during surgery, that it is done in a very controlled environment?

A. Correct. A highly controlled environment and we have to be very specific and particular about monitoring.

Q. And does it require expertise in the monitoring of anesthetic depth beyond the routine anesthetic case?

A. Yes, it does.

Q. When Pavulon or pancuronium bromide is used in a surgical procedure what steps do you take or what are the steps in the administration of drugs in connection with the use of the neuromuscular blocking agent?

A. Well, we talked earlier about the processes involved of inducing an animal to general anesthesia,

so we would follow that same process once we have the animal induced to anesthesia and comfortably on a gas anesthetic we would go ahead and start mechanically ventilating the animal prior to the administration of the neuromuscular blocking agent.

Once we are -- we have all of our monitoring equipment set and it is working well and the ventilator is working well, then we will go ahead and administer the neuromuscular blocking agent.

Q. Okay. Would sodium pentothal ever be used to cause the general anesthesia that would be in place before the neuromuscular blocking agent?

A. Yes, at times it would.

Q. Would it be the only drug that's used?

A. No. It would be used to induce anesthesia but it wouldn't be used to maintain anesthesia. Most typically the anesthesia is maintained by an inhaled anesthetic.

Q. Doctor, in your opinion can you explain what effect Pavulon would have on an animal surgeon's ability to monitor anesthesia and also detect what might be happening with the animal?

MS. ESTIPONAL: I think this has been asked and answered.

Q. (By Mr. Sweeney) Doctor, I think you gave an outline of that answer earlier. I would just like you to flesh your response out a bit more.

A. Can you repeat the question for me?

Q. Sure. In your opinion can you explain what effect Pavulon would have on an animal surgeon's ability to monitor anesthesia and also detect what might be happening with the animal?

A. Right. So as I briefly mentioned, the producing neuromuscular paralysis in an animal produces this chemical vail that prevents us from assessing or observing the types of parameters that we normally use to monitor depth of anesthesia, things like respiratory rate or response to surgical stimulation, those types of parameters are removed in the presence of neuromuscular blockade and it means that we have to be more aggressive about our

monitoring and in most cases use more invasive monitoring techniques.

Q. And you briefly described those monitoring techniques several moments ago?

A. Right. So we use techniques like using electrocardiograms to monitor heart rates, and using some form of blood pressure monitoring, and then we will also monitor the degree of neuromuscular blockade using a piece of equipment called a peripheral nerve stimulator.

Q. Okay. In general practice in the surgical context do you know whether veterinarians use a lot of neuromuscular blocking agents during surgery?

A. They do not.

Q. Do you know why that is?

A. Because it requires specialized equipment and monitoring and it also requires fairly specialized knowledge to use them appropriately, which not all general practitioners would have.

Q. Okay. Doctor, how is potassium chloride used for animal euthanasia?

A. Potassium chloride is used occasionally in animal euthanasia, it is typically used in situations

where there is residual cardiac activity following the administration of an overdose of pentobarbital. And in that situation a large dose of potassium chloride is given and the potassium actually causes fatal dysrhythmias or disrupts the normal conduction of impulses in the heart itself. So it actually is used to stop the heart.

Q. How commonly is that method used?

A. The administration of potassium chloride?

Q. Yes.

A. It is quite rare because in most situations the administration the pentobarbital, the overdose of pentobarbital alone is sufficient to produce -- to produce the euthanasia.

MR. SWEENEY: I have nothing further at this time.

CROSS-EXAMINATION

BY MS. ESTIPONAL:

Q. Dr. Pettifer, I notice that there are many acceptable ways of inducing euthanasia in animals; is that correct?

A. Yes, as described in the report, yes.

Q. And some of those -- and conditional acceptable methods, correct, which means under certain conditions these methods of euthanasia are acceptable?

A. Correct.

Q. And those include decapitation?

A. Yes.

Q. Cervical dislocation?

A. Correct.

Q. Pithing, can you explain what pithing is, P-I-T-H-I-N-G?

A. Pithing is used -- is an euthanasia method that is used most commonly in amphibians that involves taking a blunt probe and placing it into the base of the skull into the brain.

Q. And let's see? Closed bolt -- what? Can you help me with the rest of that term, captive?

A. Captive closed bolt.

Q. And that is what, like a bullet?

A. It is like a bullet but it is actually not

discharged from the firearm other than, you know, a certain distance. So it is a captive bolt.

Q. Okay. And that is used with horses, rabbits, amphibians, dogs?

A. Correct.

Q. Many other mammals and non mammals, correct?

A. Probably most commonly used with horses, rarely used, I think, with dogs.

Q. Okay. Also I see inhalant anesthetics are acceptable and cervical dislocation, that pretty much self-defines, ringing the neck, right, breaking the vertebra by twisting the head and body in different directions?

A. That's correct. I'm not that skilled in that technique. I know there are people that do, you know, perform euthanasia that way have very specific technique that they use. So I wouldn't be that comfortable in characterizing it as ringing the neck.

Q. Okay. Just for the layman's term, cervical dislocation is the technical term that's commonly used in bird and mice?

A. Sometimes, yes.

Q. I also see it as conditionally acceptable for rabbits; is that correct?

A. Yes.

Q. Okay. Also for rodents and other small animals, microwave irradiation is acceptable, correct?

A. Yes.

Q. Electrocution for ruminants, that is cows, right?

A. Correct.

Q. Swine?

A. Yes.

Q. Mink, fox and other mammals produced for fur?

A. Right.

Q. And that includes electrocution followed by cervical dislocation. Horses conditionally acceptable?

A. Electrocution?

Q. Yes. And I also see electrocution for dogs conditionally acceptable?

A. Right. But they would have to be fairly, you know, extenuating circumstances in which a method like that would be used.

Q. Whatever the -- that is why it is conditional.

A. Exactly. And most commonly the reason that those types of methods would be used rather than something that involves the administration of a drug, it would be in a research setting where you wanted to preserve, you know, architecture, cellular architecture that may be affected by the administration of a drug.

Q. Well, isn't that the same reason why the decapitation and cervical dislocation are approved for lab animals also?

A. That's correct, that's correct.

Q. Okay. We certainly wouldn't recommend those methods of euthanasia for a human being?

A. No.

Q. Not since the guillotine has been discontinued in France?

A. But they do do electrocution.
Q. In France?
A. In humans.
Q. Oh, sure.
A. Right.
Q. Not in this state anymore.
A. Right.
Q. And I guess cervical dislocation, couldn't -- hanging might accomplish that depending on the length of the drop.
A. Right. Right. I mean, I think some of those more mechanic methods like cervical dislocation are really species specific.
Q. Right.
A. They tend to use it in much smaller animals where, you know, there isn't much resistance to overcome when you are actually carrying out that mechanical procedure.
Q. Right.
A. You wouldn't hang a horse.
Q. So it is a relatively quick method?
A. Exactly.
Q. For those who are skilled at it?

A. Exactly.

Q. Explain to me the microwave irradiation. That seems particularly gruesome to the layman for rodents and other small animals. Microwave irradiation is acceptable under the 1993 report of the AVMA, Table 1 at the very bottom of that page.

A. The 1993?

Q. Yes.

A. Well, I am not familiar with this as a

method of euthanasia. I have never seen it used, and I have sat on a number of institutional animal care and use committees that involves a lot of considerations of euthanasia methods and I have never seen an investigation in which that has been used.

Q. Well, let me ask you since we are talking about animal care and use committees. What about methods of anesthesia on say mice or rat pups, such as lowering body temperature or freezing, is that --

A. That's not really -- there was a time when hypothermia was, you know, thought to be a reasonable form of restraints, but it certainly has fallen out of favor, and it is generally felt that hypothermia is not really an acceptable form of anesthesia or pain control.

Q. Even when it is followed by a cervical dislocation or pneumothorax or some other method of euthanasia?

A. So the scenario you are describing is that you are carrying out a procedure --

Q. Let's say field mice or rat pups?

A. Right, right, right. Well, yes there are certainly instances where that may be used. I think

that our requirements tend to be somewhat less stringent for fetal animals than they are for mature individuals.

Q. Okay. Okay. Let me ask you a little bit about this 2000 report of the AVMA panel on euthanasia. I noticed on page 680 this is Petitioner's Exhibit 176. There is the section on pentobarbital combinations.

A. Correct.

Q. There is some indication in here that the sodium pentothal is easier to store and administer than sodium pentobarbital; is that a correct interpretation of that or could you explain that, say about the seventh, sixth or seventh sentence down? It says these combination products are listed by the DEA as schedule III drugs, making them somewhat simpler to obtain, store and administer. Does that mean because of DEA regulations or the nature of the drugs?

A. No. Because of the DEA regulations.

Q. Okay. Thank you. I also notice it says a combination of pentobarbital and this is highlighted in the, I believe every copy of this exhibit, a combination of pentobarbital with a neuromuscular blocking agent is not an acceptable euthanasia agent. Then right across from it, potassium chloride in conjunction with prior general anesthesia which seems to indicate that when an animal has been anaesthetized with a prior general anesthesia, potassium chloride is then an acceptable method of euthanasia because it stops the heart, an acceptable method to produce cardiac arrest and death?

A. Correct.

Q. Okay. So a combination of sodium pentothal and potassium chloride would be an acceptable method of general anesthesia?

A. A combination of sodium pentothal or pentobarbital?

Q. Uh-huh.

A. Pentothal?

Q. Pentothal. Say in a massive dose of both because after we want to produce --

A. Yes, sure.
Q. -- euthanasia not anesthesia?
A. Right, right, right.
Q. Correct, we are not concerned about the animal recovering. This is not anesthesia. It is a terminal procedure, nonsurvival surgery if you will?
A. Right, right, right.
Q. So those two together would produce an acceptable method of euthanasia?
A. Providing there was acceptable level of monitoring.
Q. Or -- well, how much monitoring do you have to have if -- how quickly is death produced with the use of potassium chloride, a massive dose of potassium chloride?
A. It probably is like, you know, linked to heart circulation time so less than 60 seconds, but what I'm talking about in terms of monitoring is that you would want to make sure that your massive dose of sodium thiopental was actually as massive as you thought it was prior to administering the potassium chloride to stop the heart.
Q. So you want to make sure that your first

dose is a massive dose of the sodium pentothal or whatever other anesthetic agent you are using. So that the animal does not recover consciousness by the time the potassium chloride takes effect?

A. By the time the heart stops, that's correct. Right.

Q. Okay.

A. Right.

Q. Now, of course, the sticky wick here is the

Pavulon, the pancuronium bromide, because it is a muscular paralytic agent.

A. It is, right.

Q. How -- do you ever use a drip when you are producing euthanasia?

A. A drip of --

Q. Of any kind. Like start with a saline drip and then you injection the -- whatever agent you are using into some kind of a little portal?

A. Right. Normally when we are, you know, for carrying out euthanasia with pentobarbital then we'll inject that from a syringe into a vascular space so it would tend not to drip it in.

Q. Right. Because that is an extra step there. You have to put in the IV, find the vein for that before you --

A. Right. But that's probably the only way to insure that you are actually getting the drug that you are giving into the vascular space.

Q. Uh-huh. Okay.

A. So even general practitioners that carry out euthanasia say on horses on farms most will and the rest are well advised to insert an intravenous

catheter prior to administering the euthanasia agent, which is usually pentobarb, because then you have a guaranteed access.

Q. Right. Once you establish that IV access then you know you have got the vein?

A. Right, right, right. Because there are lots of horror stories about people not taking the time to do that. They get half of the dose of the drug and they have just injecting it through a syringe

and the needle comes out of the vein, and then you have an animal that is in a great deal of distress.

Q. Right. And that's a mess; isn't it?

A. It is a big mess.

Q. You want to make sure the needle doesn't penetrate through the vein to the other side?

A. Correct.

Q. Okay. So that's one reason to use an IV, a drip type thing to insure you are actually getting the drug into the veins of the animal?

A. Right. So you need a secure venous access.

Q. Correct. So the sodium pentothal, an overdose of that would kill an animal. I mean, it is a cardiotoxin, correct?

A. It is. It is. I guess it depends on the extent of the overdose. I mean, how much of an overdose is it actually. I guess I'm at somewhat of a disadvantage to comment on that because we tend not to use that drug. We tend to use an overdose of pentobarbital as our primary euthanasia agent just because of the longer duration or effect of that drug. So you have a longer duration of effect of cardiotoxicity. So you have a longer duration in

depression on the cardiovascular system and depression of normal functioning.

Q. Is the onset as fast with pentobarbital?

A. No. It tends to be a little bit more delayed, correct, just because of the differences in solubility.

Q. Uh-huh, now if hypothetically your animal, you have got your IV access, you have got your vein access insured --

A. Yes.

Q. You inject a large, let's say an overdose of sodium pentothal, then you immediately inject an overdose of pancuronium bromide and then potassium chloride. Say the entire process takes between four and a half to six minutes.

A. Okay.

Q. Would you consider that a humane method of euthanasia?

A. I would, but as I said just a few minutes ago, I am at a bit of a disadvantage to comment on the overdose with the thiopental because it is not something that I have experience with. Because --

Q. You don't have a lot of experience with the use of sodium pentothal?

A. No. I have a lot of use or experience with the use of sodium pentothal.

Q. But not as a euthanasia agent?

A. Not as a euthanasia agent because we tend not to administer it in those large doses. So the theoretical concerns are because of its duration of action. It is an ultra-short acting barbiturate. There is individual variation in the way animal's

bodies will deal with that drug. So some can redistribute it very quickly from the brain to other tissues that allow a return to consciousness.

So I don't have experience using an overdose of that drug as part of a euthanasia protocol.

Q. Well, I don't want you to answer if you are not comfortable with your response.

A. Right.

Q. That's fine. I have one final question and that is to ask if you have a personal opinion on the use of the death penalty in Louisiana?

A. I do.

Q. And what is that?

A. I am not taken to believe in the death penalty.

Q. Thank you, Dr. Pettifer. I have no other questions.

MR. SWEENEY: I'd like to ask a couple of redirect questions.

REDIRECT EXAMINATION

BY MR. SWEENEY:

Q. Looking back at Petitioner Exhibit 176, the Appendix 3 conditionally acceptable agents and methods of euthanasia, have you located it?

A. Yes.

Q. Doctor, even in comparison with all the methods, gruesome as the State has described them, on this list of conditionally acceptable or acceptable methods, is it correct to say that pancuronium bromide is never used in animal euthanasia, never permitted to be used in animal euthanasia?

A. I don't think that I would go so far as to say never.

Q. Only under rare circumstances?

A. Correct.

Q. Why would you bother administering pancuronium bromide in an euthanasia protocol? Would there be any legitimate purpose?

A. Well, personally I think with the drugs that we have, the other injectable drugs that we have

available to us, I mean, particularly with sodium pentobarbital, which is our mainstay. That drug produces unconsciousness and depression of neuronal and cardiovascular functioning of a duration that is sufficient to, you know, provide us with a humane means of euthanasia.

So we don't actually need to follow that with a neuromuscular blocker because the one drug itself usually does the trick or produces the effect.

Q. Thank you. You mentioned that pentobarbital in comparison to sodium thiopental has a slightly delayed onset?

A. Correct.

Q. Is that ever a problem for you in administering animal euthanasia?

A. No, not at all. And it tends to be, there is some species variation, in terms of the latency of onset of those drugs. We are not talking, you know, a delay of three to five minutes. We are talking, you know, probably 30 seconds, 30 seconds to a minute before you start to see an effect.

MR. SWEENEY: That's all I have. Just for the record I would like to introduce as part of this

proffer Exhibits 176 and 177, 178 and 179 into the record.

MS. ESTIPONAL: No objection, and I have no other questions for Dr. Pettifer.

(Proffer Exhibit Nos. 176, 177, 178 and 179 were introduced into evidence.)

(The proffer is concluded and Judge Emanuel enters the courtroom.)

MS. ESTIPONAL: I believe we have concluded

defendant's proffer of Dr. Pettifer, his testimony and defense counsel has offered some exhibits in proffer. The State has made no objection to those.

THE COURT: So noted. Do we have other witnesses for this afternoon?

MS. ESTIPONAL: I believe we do not, Your Honor. I believe all that petitioner has for tomorrow morning is Ms. Kolinchak, and I'll defer to counsel for petitioner to let us know about that.

MR. CLEMENTS: That is accurate, Your Honor. Ms. Carol Kolinchak is scheduled to appear tomorrow morning and just as a parenthetical note even though your attendance wasn't required, the deposition is going to have to be continued of the other, the unidentified John Doe deponent. It turns out that he is going under root canal surgery tomorrow and we have explained to him that we will recontact him for a future date.

THE COURT: So noted. We have -- is it expected that your witness will be here for 9:30 or --

MR. CLEMENTS: She will be here this evening, Your Honor. So there won't be any difficulty with her presence so whatever your convenience is.

THE COURT: All right. I can give you first dibs. You can either go first or we have it looks like only four docket matters tomorrow. So they can come in and get finished with that, I would think, rather quickly and then I'll be ready for you unless y'all want to come first.

MR. CLEMENTS: Your pleasure, Your Honor.

THE COURT: We'll just come at 9:30 and see who is ready, in whatever order seems to be reasonable

in the morning at 9:30.

MS. ESTIPONAL: Thank you, Your Honor.

MR. CLEMENTS: Thank you, Your Honor.

THE COURT: Any other matters? I think that should take care of it. I think there are a couple of matters, at least one housekeeping thing that was brought up. Mr. Clements, it had something to do with you, and I'm only mentioning it because we said we'd address it later, and because I don't off the top of my head remember exactly what it was. Maybe counsel can make a note and we be sure that we address it on tomorrow before we finish. I don't know what it was. It was something that came up.

MR. CLEMENTS: You think it was something I perhaps raised?

THE COURT: You did.

MR. CLEMENTS: I'll try to review my notes.

THE COURT: I'll do the same.

MR. CLEMENTS: We did have one other witness that was going to come today and that was Mary Labateau and I think we explained to you at the bench that there was a mix up that she was not coming and we'll arrange for a future time. Something else?

THE COURT: It was something unrelated to that even, but we'll endeavor to find out what it was. Let's see, have you started looking at future dates to --

MS. ESTIPONAL: We have not, Your Honor.

THE COURT: Ms. Estiponal and Mr. Sweeney, I believe on yesterday you asked me about maybe visiting on some other cases we have that are not related to Code, and I was thinking that we would be

in court some today, if you have your calendars and you want to come upstairs when you leave from these proceeding and visit with me, and certainly your co-counsel are welcome to come as well.

Maybe we can visit with those on today and get that done.

MS. ESTIPONAL: That's fine with the State, Your Honor.

MR. SWEENEY: That's fine with us.

THE COURT: Maybe also look at some dates if not I guess confirm any particular dates maybe have an idea of what we are looking at. That being said and done the Court is in recess for the rest of the day.

(Whereupon, the witness was excused and the proceedings were concluded.)

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CHRISTEN M. SUTHERLAND, CERTIFIED COURT REPORTER

C E R T I F I C A T E

STATE OF LOUISIANA :

PARISH OF CADDO :

I, Christen Sutherland, Certified Court Reporter for the First Judicial District Court, in and for Caddo Parish at Shreveport, Louisiana, do hereby certify, to the best of my ability, that the foregoing pages are a true and correct transcript of the testimony given and the proceedings had.

SUBSCRIBED AND SWORN TO this the 27th day of August, 2004.

CHRISTEN SUTHERLAND, CCR
REGISTERED PROFESSIONAL REPORTER
NOTARY PUBLIC ID# 67848
LOUISIANA NUMBER 22009
POST OFFICE BOX 4072
SHREVEPORT, LA 71134

CHRISTEN M. SUTHERLAND, CERTIFIED COURT REPORTER