

University of California, Berkeley

School of Law

Death Penalty Clinic

Berkeley, CA 94720-7200

Tel 510-643-4800

Fax 510-643-4625

FACULTY

Elisabeth Semel, Director
Ty Alper, Associate Director

STAFF ATTORNEYS

Jen Moreno
Kate Weisburd

RESOURCE COUNSEL

Megan McCracken

PARALEGALS

Mara Hickey Jessica Michals

LAW STUDENT INTERNS

Stephanie Clark	Atteeyah Hollie	Vanessa Reid
Kurt Denk	Sarah Ihn	Bryan Springmeyer
Estela Dimas	Raghav Krishnapriyan	Whitney Tipton
Joe Goldstein-Breyer	Lorraine Leete	Abbie VanSickle
Maeve Granzin	Maile Padilla	Sam Weiner
Tess Hand-Bender	Ellen Rheaume	Sarah Weiss

January 25, 2010

Amy V. Barker
Assistant General Counsel
Department of Justice and Public Safety Cabinet
125 Holmes Street
Frankfort, KY 40601

RE: Comments on the proposed "Death Penalty Procedures," 501 KAR 16:001-16:340

Dear Ms. Barker,

We are writing to comment on the Kentucky Department of Corrections (DOC) proposed Execution Protocol. Undersigned Megan McCracken is the Eighth Amendment Resource Counsel for the Death Penalty Clinic. Undersigned Jennifer Moreno is the Clinic's Eighth Amendment Fellow and Staff Attorney. The Clinic created and administers the website, www.lethalinjection.org, and has been involved in lethal injection litigation nationwide.

The following comments do not purport to address all of the deficiencies in the published protocol. We note at the outset that our ability to submit a completely informed comment is restricted by the DOC's failure to include specific details about many aspects of the execution process. In *Bowling, et al. v. Kentucky Department of Corrections*, the Kentucky Supreme Court ruled that the "Department of Corrections is required by Kentucky law to promulgate a regulation as to all portions of the lethal injection protocol except those limited issues of internal management that are purely of concern to Department personnel." No. 07-000021, 2009 WL 4117353, at *12 (Ky. Nov. 25, 2009). However, as described below, there are numerous aspects of the execution process missing from the proposed regulations. Accordingly, we do not have all of the information necessary to fully comment on the proposed regulations.

Kentucky Should Remove Pancuronium Bromide and Potassium Chloride from the Execution Protocol.

On November 13, 2009, the State of Ohio announced a new lethal injection protocol that uses an intravenous injection of a single anesthetic drug. The new Ohio protocol will no longer use pancuronium bromide, a neuromuscular blocking agent that causes total paralysis of the skeletal muscles, or potassium chloride, a concentrated salt that causes burning pain in the veins and cardiac arrest, to execute inmates. With this new

protocol, Ohio has taken a significant step towards eliminating the risk that inmates will suffer excruciating pain during executions. The Kentucky protocol calls for the administration of pancuronium bromide and potassium chloride, two very dangerous and unnecessary drugs that should be removed from the protocol.

Administration of pancuronium bromide and/or potassium chloride to a conscious person would be torturous. In an execution by lethal injection performed pursuant to the DOC's lethal injection procedures, there is a risk that the condemned inmate will not be adequately anesthetized by the anesthetic drug and will experience pain and suffering caused by pancuronium bromide and potassium chloride. There are many reasons why the first drug, sodium thiopental, could fail to render the inmate deeply anesthetized, but perhaps the most significant is failed or faulty IV access. The safety of an execution by lethal injection rests in large part on the ability of the IV Team to set a proper, functioning IV that delivers the full dose of the anesthetic drug into the inmate's circulation. If the IV is in any way faulty, an incomplete dose could be delivered, and the inmate could be inadequately anesthetized prior to experiencing paralysis and cardiac arrest. To further complicate matters, once the pancuronium has been administered, it becomes extremely difficult to determine whether the inmate has been anesthetized. In contrast, a protocol that does not use pancuronium and potassium poses no risk of excruciating pain and suffering to the condemned inmate, even if the IV is faulty.

As discussed below, there are numerous deficiencies in the execution protocol proposed by Kentucky. These deficiencies are exacerbated by the inclusion of pancuronium bromide and potassium chloride in the lethal injection procedure. The failure to include clear instructions on how to carry out key aspects of the execution process and the lack of contingency planning, among others, all increase the risk that the inmate will be insufficiently anesthetized and suffer immensely.

Kentucky should follow the lead of Ohio and remove pancuronium bromide and potassium chloride from the execution protocol. As shown by Ohio's adoption of a single anesthetic procedure, these dangerous drugs are unnecessary to the execution process and increase the risk that executions will not be humane.

Crucial information is missing from the Execution Protocol

For the reasons stated below, the proposed regulations are deficient as a guideline for performing executions by lethal injection. Crucial sections of the process are missing, vague, or unclear and provide insufficient instruction to members of the execution team. The protocol also lacks contingency plans in the event that problems arise during an execution.

The execution protocol is missing information that is both basic and crucial, and without which members of the execution team cannot actually carry out an execution. Furthermore, the DOC is required by Kentucky law to promulgate "all portions of the lethal injection protocol." As written, the proposed regulations are incomplete because

they lack instructions for the preparation of the lethal drugs, the set up of the IV equipment, and performance of the consciousness check. These omissions not only violate Kentucky law, they increase the risk that inmates will suffer significant pain because execution team members will lack directions for carrying out the process.

1. The protocol does not provide instructions for the preparation of the drugs.

Whether or not an execution by lethal injection will be humane turns on the successful administration of a proper dose of sodium thiopental. The protocol calls for 3 grams of thiopental but does not specify the volume to be prepared or the concentration at which the drug should be mixed. The protocol's omission of these details is a fundamental flaw and creates great danger for condemned inmates. If the execution team prepares the sodium pentothal at too low a concentration, the dose could be too small, and the inmate might not be adequately anesthetized before the second and third drugs are administered and/or might not remain anesthetized throughout the procedure. If the execution team prepares the sodium pentothal at a concentration that is too high – higher than the standard clinical concentration of 2.5% – the inmate could suffer significant pain upon administration of the drug. The proposed regulations also fail to specify how many syringes of each drug will be prepared, including how many extra syringes of all three drugs will be prepared, and how the syringes will be labeled and stored from the time of preparation until administration. Lethal injection protocols in many other states contain clear instructions for these aspects of the procedure and the regulation should be revised to include these important steps.

2. There is no description of the set up of the execution facility or the lethal injection equipment.

The proposed regulations do not describe how the IV lines and equipment will be set up, including whether the execution team will administer drugs from a separate room from the inmate. In most other states, the team injecting the drugs is located in a different room and IV tubing is set up to pass through a hole in the wall separating the rooms. The proposed regulations do not provide essential information on the layout of the facility or IV equipment that will be used in Kentucky, and, accordingly, it is impossible to assess the risk of problems and comment. Failing to include this information deprives the public of the opportunity to submit meaningful comments on an important aspect of the process and violates the Kentucky law since the DOC is required to promulgate all aspects of the execution process.

We will note that administering the drugs from a remote room increases the chance for error and makes it more difficult for execution team members to identify and correct problems that do arise, thus increasing the risk of harm to condemned inmates. When the inmate is located in a separate room from the team injecting the drugs, it requires the use of additional IV tubing and connections, which increases the chance of leaks and line failures. The team injecting the drugs will also have a difficult time monitoring the line and injection site for problems. The Kentucky DOC should

ameliorate these risks by situating the equipment and the Execution Team in the same room as the inmate to decrease the risk of error.

3. The protocol is inadequate to ensure that the inmate is rendered unconscious and remains unconscious throughout the execution.

It is imperative that the inmate is rendered into a deep unconsciousness by sodium thiopental, prior to the administration of pancuronium bromide and potassium chloride, to ensure a humane execution. Although sodium thiopental is a fast-acting anesthetic, it does not take effect immediately. The drug needs time to move through the circulation to the brain and then it needs time to accumulate so that the inmate is not lightly sedated, but deeply anesthetized. It is imperative that a person with appropriate medical training assesses whether the inmate has reached deep stage of unconsciousness prior to continuing with the administration of the second and third drugs. Failing to ensure unconsciousness creates the unnecessary risk that inmates will suffer the agonizing effects of pancuronium and potassium, yet because of the paralyzing effect of pancuronium, will be unable to exhibit signs of pain.

The proposed regulations do not require personnel to take any steps to ensure that the inmate is unconscious at anytime during the procedure. The proposed regulations states, "If it appears to the Warden that the condemned person is not unconscious within sixty (60) seconds of his command to proceed," the execution team must switch to the back up IV line. Reg. 16:330, Section 2(2). As written, the regulation does not require an assessment of actual unconsciousness, only whether the inmate "appears" unconscious. Furthermore, it is deeply troubling that the warden makes this determination after sixty seconds because there is no way to determine at what point in the administration of the three drugs this will occur, and it could vary from execution to execution. There is a risk that the administration of thiopental will be completed and the administration of the paralytic will have begun before the warden's assessment. At this point, the warden's determination will be meaningless since the inmate will "appear" unconscious, yet may be conscious and paralyzed. The protocol does not specify whether the warden received any training in assessing or monitoring consciousness, but even with training he would be unable to assess consciousness in a paralyzed person without specialized equipment. The regulation should be amended to require a consciousness check after the administration of thiopental and before the administration of pancuronium and potassium.

Were the DOC to remove the use of pancuronium bromide and potassium from the execution process, it would eliminate the need for safeguards to ensure the inmate is rendered unconscious. As described above, the state of Ohio has begun carrying out executions without pancuronium bromide and potassium chloride, instead using an overdose of a single anesthetic and, to date, has carried out two executions without incident. Because the new Ohio protocol does not paralyze condemned inmates or administer the painful potassium chloride, there is no need to assess the inmate's level of consciousness at any point in the procedure. In contrast, as long as the protocol in

Kentucky includes pancuronium and potassium, there is a risk that inmates will be insufficiently anesthetized and suffer torturous executions, and appropriate steps must be taken to ensure unconsciousness.

4. The Execution Protocol provides inadequate contingency plans

The proposed regulations fail to guide the execution team in the event that an execution does not proceed as planned. The omission of contingency planning is a disturbing and unacceptable deficiency in the protocol that places condemned inmates at great risk or pain and suffering. Moreover, it puts the Execution Team in the untenable position of having responsibility for an execution, but insufficient information to perform its tasks safely and appropriately.

Numerous things can go wrong during an execution. While several contingencies may have no deleterious effect for the inmate, a few – failed IVs that deliver drugs outside the vein, IV lines that leak or clog, or a failed dose of sodium pentothal – are almost certain to result in extreme anguish.

The September 2009 botched execution attempt of Romell Broom highlights the need to have a contingency plan. There, the execution team struggled for over two hours to find suitable veins in the arms and legs of Broom but were unable to do so. P. Krouse, *Strickland stops execution after team can't access veins*, Cleveland Plain Dealer, Sept. 16, 2009 (Attachment A). The execution was discontinued when Broom was granted a reprieve by Gov. Strickland. *Id.* The IV access problems in Ohio can happen in any state that uses lethal injection. In addition to IV access issues, numerous other states have experienced problems at various stages of the lethal injection process. *See generally*, Brief for Michael Morales et al. as Amici Curiae in Support of Petitioners, *Baze v. Rees*, No. 07-5439, 533 U.S. ____ (2008) (Attachment B). At a minimum, the proposed regulations must anticipate foreseeable contingencies that would lead to pain and suffering for the condemned inmate and provide instructions for how the execution team should respond.

a. IV Access

The proposed regulations require the IV team to set two functioning IV lines but do not instruct the execution team on how to proceed in the foreseeable event that IV access is not possible. From the list of preferred injection sites (arms, hands, ankles, feet) it appears that the DOC expects personnel to set peripheral IVs, although this is not explicit. Reg. 16:330, Section 2(3). However, the list also includes the neck as a preferred site, which is an inappropriate location for a peripheral IV. Highly trained and specialized medical personnel are required to insert a central line into the jugular vein, which is accessed through the neck, but the proposed regulations does not provide for this level of qualified personnel. The proposed regulations should be revised clarify that personnel will set peripheral IVs and to remove the neck as a preferred site.

The proposed regulations require the IV team to perform an examination of the inmate's veins within 24 hours of the execution, but do not provide an alternative method of access if the assessment reveals that peripheral access will not be possible or if the IV team is unable to set peripheral IV's at the time of the execution. Reg. 16:330, Section 1(1)(b) & Section 1(6). Without this information, it is impossible to assess whether the DOC is prepared to obtain IV access in a safe and reasonable manner. Additionally, if the DOC intends to set IVs in a manner not identified in the protocol or deliver drugs through an alternative method, Kentucky law requires those procedures to be promulgated in compliance with the APA.

Additionally, the protocol includes confusing and contradictory language on whether an execution can proceed if only one functioning IV can be set. The proposed regulations require the IV team to site and insert a primary and back up IV line, but then allow the execution to proceed if the IV team is only able to establish one line. Reg. 16:330 Section 1(3) & Section 1(6). The backup line provides an important safeguard in the event that foreseeable problems arise with primary line. In fact, the protocol anticipates the possibility that a back up line will be needed if the inmate is still conscious after sixty seconds or has not been declared dead within ten minutes of the administration of the drugs. It is dangerous and unreasonable for the proposed regulations to contain contradictory and unclear language and the protocol should be revised to make clear that an execution cannot proceed unless two functioning IV lines are set.

b. IV Line Failure

The proposed regulations fail to plan for the foreseeable scenario of IV line failure during an execution. We cannot comment on specific deficiencies in the protocol, because it does not specify the set up of the IV lines, including the length of the line and the position of the inmate. However, there is a risk of line failure and leakage with any setup. This risk increases if the IV lines are lengthy and require extensions in the line. There is also increase risk of line failure or line entanglement if the inmate is moved after the IV's are set and the lines are connected. A line could fail because the IV catheter is set improperly in the inmate's veins, creating excessive backpressure in the line. Finally, there is the very real possibility that an IV line will fail for reasons that are not clear, and that the drugs administered through the line simply will not work.

The proposed regulations do not contemplate or address any of these scenarios. While the protocol calls for a member of the execution team to "[e]nsure the equipment is functioning," this statement is too vague to provide any real guidance as to problems to watch for and remedies. Reg. 16:330 Section 1(8)(b). IV line failure is extremely problematic because it risks that partial doses of all three drugs will be delivered, which could create a scenario in which the inmate is inadequately anesthetized but paralyzed and experiencing extreme pain. As previously stated, if the second and third drugs were removed from the protocol, the effects of a failed IV line would be much less serious and would not risk a torturous execution.

c. IV Catheter Errors

The proposed regulations also do not address the possibility that the IVs will be set incorrectly or migrate after insertion, resulting in IV catheters that push the drugs into an inmate's flesh rather than his circulatory system. This is a real risk that has resulted in horribly botched executions in other states. The regulations must be amended to put in place procedures that will identify a failed IV (and all of the other contingencies addressed here) and specify what the Execution Team should do in response. Additionally, as described above, the protocol is unclear about whether the Execution Team members are in the same room with the inmate and in a position to ensure that the IVs function throughout the process and that the drugs are administered correctly.

5. Conclusion

The Execution Protocol is inadequate because it lacks critical information about the manner in which lethal injections will be administered, and it fails to lay out contingency plans for the foreseeable problems that can and do arise during executions by lethal injection. The problems described above, as well as others, can be addressed through appropriate planning and redrafting of the protocol. Without these changes, however, the protocol is deficient as a guideline for executions by lethal injection. Finally, by unnecessarily including pancuronium and potassium chloride in the protocol, the consequence of any of the above-described inadequacies are incalculably greater. By employing an anesthetic only procedure, Kentucky could eliminate the risk of one of the above problems resulting in a torturous execution.

Execution Team Practice and Training

The proposed regulations provide insufficient information about the execution practice requirements and do not specify whether team members receive any specific training as members of the execution team. Without clear requirements, the protocol cannot guarantee that team members will be engaged in meaningful activities that prepare them for participation in executions and to deal with foreseeable problems.

The proposed regulations require members of the execution team to have "participated in at least two (2) practices" prior to taking part in executions. Reg. 16:320, Section 1(3). The protocol reveals only that practices include a "complete walk through of an execution" including the "siting of two (2) IVs into a volunteer". Reg. 16:30, Section 2. The proposed regulations do not require execution team members to undergo any training specific to the execution process, including anticipating and resolving foreseeable problems.

There is also nothing in the proposed regulations to ensure that execution practice sessions are supervised by anyone with the qualification and experience necessary to provide training and/or identify and correct errors during the practice sessions. The proposed regulations do not require evaluation of team members' performance during

practice sessions or removal from the team based on poor performance during practice sessions. As a result, inadequately trained personnel may be included on the execution team or team members could potentially make crucial mistakes during practice sessions and still be permitted to participate in executions.

Use of Pancuronium Bromide to Paralyze Inmates Before Executing Them

We wish to expand upon our objection to the DOC's decision to paralyze condemned inmates with pancuronium bromide prior to executing them with potassium chloride.¹ As previously discussed, the use of pancuronium bromide is unnecessary and dangerous, and creates a substantial risk that executions in Kentucky will be excruciatingly painful and torturous.

The state of Ohio recently announced that it has removed pancuronium bromide, as well as potassium chloride, from its execution protocol, in favor of the administration of a single anesthetic. By modifying its protocol, Ohio has recognized that it is unnecessary to paralyze inmates or administer potassium chloride. Kentucky should follow Ohio's example and remove these drugs from the protocol and eliminate the serious risks involved with paralyzing inmates prior to injecting them with potassium chloride.

1. The problem with pancuronium in the lethal injection procedure

The proposed procedures call for the serial administration of three drugs. The drugs are, in the following order, sodium pentothal, pancuronium bromide, and potassium chloride. The first drug is intended to anesthetize the inmate so he does not experience the effects of the second and third drugs. The second drug paralyzes him, and the third drug stops his heart, killing him. The use of pancuronium, the second drug, presents a serious problem. Because pancuronium paralyzes the inmate during the execution process, the inmate may experience excruciating pain and suffering but be unable to cry out or even blink an eyelid to let anyone know if the anesthesia has failed. Because pancuronium masks the ability of a lay observer to discern whether the anesthetic drug has been properly delivered, it is very difficult or impossible, in most cases, to know whether the lethal injection execution has been "botched." Pancuronium virtually ensures that the execution looks "peaceful" when it may have been anything but.

Moreover, the pain and suffering that an inmate will experience if not properly anesthetized is extreme. Because pancuronium is a paralytic that restricts the ability of the respiratory muscles to contract, it causes asphyxiation. The third drug, potassium chloride, causes excruciating pain that has been likened to the feeling of having one's

¹ Citations to the assertions made in this section of the comment can be found in Ty Alper, *Anesthetizing the Public Conscience: Lethal Injection and Animal Euthanasia*, 35 *Ford. Urb. L.J.* 817 (2008), which is attached to this comment as Attachment C. This section of our comment is adapted from this article.

veins set on fire. Experts who have testified in lethal injection cases have unanimously agreed that it would be unconscionable to inject either drug into a person who was not adequately anesthetized.

2 Background and history on curare-based paralytic drugs

To fully comprehend the dangers of pancuronium, and the reasons why it is widely condemned in the practice of animal euthanasia, it is instructive first to consider its origins and history, which we briefly describe here, and ask that the DOC take into account.

Pancuronium belongs to a class of drugs called neuromuscular blocking agents. Many of these drugs are derived from, or are synthetic versions of, curare, a highly poisonous extract from certain woody vines that grow in South America. They are often referred to as “curariform” drugs, because they have a curare-like effect. Neuromuscular blocking agents interfere with the transmission of nerve impulses at the receptor sites of all skeletal muscle. In lay terms, these drugs paralyze all voluntary muscles in the body, including the diaphragm, which is necessary to breathe. Unless a person under the influence of a neuromuscular blocking agent is assisted by an artificial breathing mechanism (such as a ventilator), he or she will suffocate to death.

For centuries, indigenous tribes in South America used curare (which is also known as ourara, woorari, wourali, and urali) to make poison-tipped hunting arrows. They combined bark scrapings from certain vines with viscous substances such as snake or ant venom, boiled the mixture for days, and let it cool into a dark, heavy paste, into which they dipped their arrows. Animals struck with these arrows were paralyzed, and eventually suffocated from respiratory paralysis. Curare was particularly effective when hunting monkeys and other animals that lived high in the trees; once shot with a curare-tipped arrow, the animals lost their grip and fell to the ground. Indigenous hunters assessed the strength of their curare based upon how many trees a monkey could jump to after being poisoned. A monkey shot with “one-tree curare” could only leap to one tree before falling; poisoned by a weaker, “three-tree curare,” a monkey could leap to as many as three trees in an effort to escape before collapsing to the ground.

Although used in hunting for centuries, curare came to the attention of physiologists in the mid-nineteenth century, particularly among those who practiced vivisection, the dissection of a living animal for medical experimentation. The influential French physiologist Claude Bernard, who needed a way to keep the animals still and cooperative—but alive—while experimenting on them, pioneered the use of curare in vivisection. After discovering its paralyzing properties, Bernard routinely used the drug during vivisection to immobilize his subjects.

It was through the use of curare in vivisection that people began to consider the implications of what curare did *not* do, namely serve any anesthetic function. While curare inhibits all voluntary movement, it does nothing at all to affect consciousness,

cognition, or the ability to feel pain. In 1864, Bernard described an animal under the influence of curare as corpse-like, but quite alive:

In this motionless body, behind that glazing eye, and with all the appearance of death, sensitiveness and intelligence persist in their entirety. The corpse before us hears and distinguishes all that is done around it. It suffers when pinched or irritated, in a word, it has still consciousness and volition, but it has lost the instruments which serve to manifest them.

In 1868, the Swedish physiologist A. F. Holmgren condemned curare as “the most cruel of all poisons.” Its use, he wrote,

changes [one] instantly into a living corpse, which hears and sees and knows everything, but is unable to move a single muscle, and under its influence no creature can give the faintest indication of its hopeless condition. The heart alone continues to beat.

Not surprisingly, the use of curare during animal experimentation was controversial; indeed, its use led to the passage of anti-vivisection laws in Great Britain at the end of the nineteenth century. Testifying before the Royal Commission of 1875, an investigative body created to examine the morality of vivisection, one witness described the experience of a dog subjected to vivisection while paralyzed by curare. Curare, he testified, was used to

render [the] dog helpless and incapable of any movement, even of breathing, which function was performed by a machine blowing through its windpipe. All this time, however, its intelligence, its sensitiveness, and its will, remained intact In this condition the side of the face, the interior of the belly, and the hip, were dissected out . . . continuously for ten consecutive hours

In the 1940s, surgeons began to utilize curare in surgery as a way of relaxing the muscles and aiding in certain delicate procedures. Anesthesiologists hailed the advent of curariform drugs in surgery, because their paralytic properties obviated the need for massive, and potentially dangerous, doses of anesthesia to control unwanted movement. Instead of using deep anesthesia to restrict muscle movement, curare-induced paralysis accomplished the same goal without the accompanying danger of general anesthesia. The drug quickly became a staple in operating rooms, allowing surgeons to work with improved surgical field and without fear of involuntary muscle contraction.

But while paralytic agents have their place in modern surgery, their inherent danger remains. Dr. Harold Griffith, a Canadian doctor who was the first to use curare on human beings to assist with surgery, published his findings in 1942. While extolling the virtues of curare in the surgical setting, he also warned that it is a “dangerous poison, and should only be used by experienced anesthetists in well-equipped operating rooms.” Any time paralytic drugs are used in surgery, the necessity of adequately maintained

anesthesia is that much more important, as the drugs restrict the patient's ability to verbally communicate sensation, or physically respond to assessments of anesthetic depth. If the anesthesia wears off during surgery, and the patient is paralyzed, the consequences can be horrific. This phenomenon, referred to as anesthesia awareness, is well-known in the annals of surgery and is a major concern of the anesthesiology profession.

3 Rejection of paralytics by veterinary and animal welfare communities

Decades of review and study have led to a consensus in the veterinary and animal welfare communities with respect to the safest and most humane method of animal euthanasia. That method is an anesthetic-only procedure involving an overdose of the barbiturate sodium pentobarbital. Tens of thousands of animals are euthanized every day by means of this procedure, which has been used in the United States for more than sixty years. According to the AVMA's guidelines, an overdose of pentobarbital is the "preferred method" of euthanizing dogs, cats, and large animals such as horses. In addition to the AVMA, every major American animal rights organization strongly recommends—or requires—the use of pentobarbital in animal euthanasia.

The ease with which the anesthetic-only procedure can be administered is an important consideration. The vast majority of animal euthanasia takes place not in the offices of veterinarians but in animal shelters, where millions of dogs and cats are euthanized each year. Euthanasia in shelters is performed by shelter workers who are not formally trained in veterinary medicine. By developing a procedure with no risk of pain, and a wide margin for error, the veterinary community has accounted for the difficulty posed by relatively untrained personnel administering the lethal procedure. For example, the Euthanasia Training Manual of the Humane Society of the United States is purposefully written in lay terms in recognition of the need for a "more instructive and less technical guide for shelter euthanasia technicians" than the AVMA guidelines, which are written by and for veterinarians. With that purpose in mind, the Humane Society Manual states that pentobarbital is the "best possible method of euthanasia currently available."

Not only does the Humane Society agree with the AVMA that the anesthetic-only procedure is the preferred method for animal euthanasia, but it expressly condemns the use of curariform drugs like the one used in human lethal injections. The foreword to the Euthanasia Training Manual states that "[i]t is our moral and ethical duty to ensure that we work to end these practices: drowning, poisoning, shooting, gassing, or injecting animals with curare-based or paralytic substances." The Manual later deems "inhumane" the use of "any combination of sodium pentobarbital with a neuromuscular blocking agent." The Humane Society also condemns the use of T-61, a euthanasia solution that combines an anesthetic with a neuromuscular blocking agent, because it "can cause animals intense pain after administration and a curare-like paralysis of respiration (suffocation) before the animal loses consciousness."

Curariform drugs are mentioned only briefly in the AVMA guidelines, and almost always with disapproval. For example, the use of neuromuscular blocking agents alone to achieve death is “unacceptable” and “absolutely condemned.” The history of this provision in the guidelines suggests that veterinary experts were concerned with curare’s long association with conscious paralysis and suffocation. In short, no AVMA-approved method of euthanasia includes a paralytic, and nowhere in the AVMA guidelines is a three-drug formula like the one used in human lethal injection even contemplated, let alone approved.

4. State animal euthanasia laws and legislative history

There are only eight states whose animal euthanasia laws would even arguably allow the use of a procedure like the one used in human lethal injection executions. These states are essentially silent on the method to be used. Typical is Indiana, which mandates simply that the method shall be “reasonably humane.” While eight states are silent on the issue, forty-two states have enacted statutes and/or regulations that either implicitly or explicitly ban the use of neuromuscular blocking agents, such as pancuronium, in animal euthanasia.

The legislative history of the statutes banning the use of curariform drugs in animal euthanasia is striking, both for what it reveals, and for what it does not reveal. In some states, these laws were the product of intense lobbying by animal rights groups, who argued for the ban in terms quite similar to the arguments of death row inmates challenging the use of neuromuscular blocking agents in lethal injection procedures. In other states, pentobarbital was mandated because it was widely recognized to be the safest and most humane method of euthanasia. In still other states, the legislative or regulatory move either to ban neuromuscular blocking agents or mandate pentobarbital was utterly uncontroversial, as it reflected the virtually unanimous consensus of the veterinary and animal welfare communities.

In 1987, both houses of the New York Legislature overwhelmingly passed a bill to ban the use of “T-61, curare, any curariform drug, any neuromuscular blocking agent or any other paralyzing drug” in animal euthanasia, and allow animal shelters access to sodium pentobarbital. Once the bill was passed, then-Governor Mario Cuomo received an outpouring of letters and memoranda from doctors and animal rights activists, urging him to sign the bill into law, which he eventually did. Much of the debate focused on the use of the drug T-61, which is a combination of anesthetic and paralytic. T-61 is no longer available in the United States and is strongly condemned by the Humane Society of the United States because, “if improperly administered, T-61 can cause animals intense pain after administration and a curare-like paralysis of respiration (suffocation) before the animal loses consciousness.” At the time, however, shelters had to use T-61 because they were not able to procure sodium pentobarbital which, like thiopental used in human lethal injections, is a controlled substance. New York’s law, like similar laws of other states, gave shelters access to sodium pentobarbital. In any event, the concerns about T-61 and

other curariform drugs, reflected in New York's legislative history, are echoed in the concerns with pancuronium today.

For example, a group of doctors, including anesthesiologists, wrote to Governor Cuomo to describe what could happen if an animal euthanized using a combination of an anesthetic and a paralytic did not receive an adequate dose of the anesthetic:

In the case of a paralyzed, awake animal who did not volunteer and does not know what is happening, the experience is undoubtedly terrifying, even in the absence of pain. If pain is present, it can be even more terrifying and more painful than would ordinarily be assumed, since pain and fear can be synergistic.

Others wrote to the governor, noting that the New York State Department of Health banned the use of curariform drugs or agents with curariform activity in the destruction of animals in laboratory settings. Dozens of local animal welfare organizations weighed in as well, one noting that "we favor this law since it would also prohibit the use of . . . drugs containing paralytic agents, which can cause acute suffering before an animal dies." Another letter pleaded that "[a]nimal organizations have put their hearts and souls into securing a bill which would mean that animal shelters could obtain sodium pentobarbital to be used only to humanely euthanize dogs and cats."

The legislative testimony in support of the bill by Representative Arthur Kremer is particularly on point:

MR. KREMER: The objections that have been raised to the use of this drug [T-61] are based upon adequate scientific research that has shown the use of this particular drug causes animals to die in what is considered a torturous manner, and sodium pentobarbital is a more humane manner in which the animal could be euthanized . . .

MR. DAVIDSEN: You mentioned the word "torturous"?

MR. KREMER: When an animal is paralyzed prior to dying, I think you put that animal, if you will, through a much more difficult death than you would with sodium pentobarbital.

The legislative history of the Connecticut statute also reflects concerns that the use of curariform drugs in animal euthanasia increases the potential for a torturous death. In that state, the original version of a proposed bill would only permit a licensed veterinarian to administer euthanasia by a "lethal injection." Although the legislative history reflects an overwhelming support for the bill, several animal welfare advocates urged the legislators to include a list of drugs to be used in lethal injections, for fear that some individuals might use curariform drugs instead of sodium pentobarbital. One of the advocates, the president of the Northeastern Connecticut Animal Rescue, Inc., warned that pet shops may be tempted to use succinylcholine chloride, a neuromuscular blocking

agent, and that animals would be paralyzed and “die[] of suffocation while fully conscious.” She continued: “Please do not assume that the phrase ‘lethal injection’ is adequate to prevent the animal’s suffering. Drugs other than sodium pentobarbital are NOT humane alternatives.” The legislature concurred and amended the bill, so that the language signed into law permits euthanasia only “by lethal injection of sodium pentobarbital.”

5 Kentucky animal euthanasia law

Kentucky is one of the many states that bans the use of pancuronium for use in animal euthanasia. Animal shelter workers in Kentucky are required to use an anesthetic-only euthanasia procedure to euthanize animals, and may not use a paralyzing agent like that used in Kentucky’s human executions. 201 Ky. Admin. Regs. 16:090, sec. 5(1)(2007). The creation of regulations mandating the use of such a procedure in Kentucky was so uncontroversial that nobody even requested a public hearing when the regulations were proposed in 1999, and the scheduled public hearing was cancelled as a result. *See* Alper, *Anesthetizing the Public Conscience*, 35 *Ford. Urb. L.J.* at 849.

6 The DOC should reconsider the use of a drug that has been long rejected by the veterinary and animal welfare communities

There is no reason for the DOC to paralyze inmates with pancuronium before executing them. It is a barbaric practice that needlessly risks a horrifying and painful death. The DOC should review and consider the considered expertise of the veterinary and animal welfare communities and conclude that pancuronium has no place in a humane lethal injection process.

7 The DOC should reconsider the use of a drug that has been rejected by medical ethicists and critical care providers for use in end of life care

At the end-of-life stage, a physician’s focus turns from curing or restoring health to ensuring patient comfort during the dying process. The physician has an obligation to provide care that relieves physical pain. Neuromuscular blocking agents, such as pancuronium bromide, possess no sedative or pain-relieving properties and therefore serve no palliative function for a dying patient. At the same time, the use of such drugs brings significant risks to the patient.

Neuromuscular blocking agents can paralyze the patient’s diaphragm and cause a patient to asphyxiate. In addition, neuromuscular blocking agents can mask the physical signs that doctors look for when attempting to identify whether a dying patient is suffering pain. For example, drugs like pancuronium bromide may suppress the visual signs of acute air hunger associated with the withdrawal of a ventilator, leaving the patient to endure the agony of suffocation in silence and isolation.

In addition, neuromuscular blocking agents like pancuronium bromide can mask the signs of severe pain. When a patient is paralyzed, he is unable to display any of the behavioral cues that allow a physician to assess his pain levels. See, e.g., Robert D. Truog, et al., *Recommendations for End-Of- Life Care in the Intensive Care Unit: The Ethics Committee of the Society of Critical Care Medicine*, 29 *Crit. Care Med.* 2332, 2345 (2001) (Attachment D). For example, the presence of a neuromuscular blocking agent will suppress the visual signs of acute air hunger associated with the withdrawal of a ventilator as well as other signs of pain and suffering. *Id.* When the attending physicians cannot identify these signs of suffering, they cannot administer the further sedatives or analgesics that are needed to ensure the patient's comfort.

Other tools available for assessing pain, moreover, are insufficient substitutes for the patient's behavioral clues. For example, monitoring a patient's blood pressure or heart rate may give some sign of the patient's level of comfort, but these tests can be unreliable due to the physiologic instability of dying patients. Without physical signs such as grimaces or gasps, which are masked by neuromuscular blockers, physicians, the most highly trained of a patient's caregivers, may be unable to provide an acceptable level of palliative care to their patients.

In light of these concerns raised above, the Ethics Committee of the Society of Critical Care Medicine has concluded, consistent with established guidelines for critical care physicians and the overwhelming consensus in the medical community, that the risks to the patient are too great to justify administering neuromuscular blocking agents in end-of-life care. See *id.* For the same reasons, in addition to all of the other reasons discussed above, DOC should not include pancuronium bromide as a component of its execution protocol.

Conclusion

Thank you for your consideration of these comments. Please do not hesitate to contact either one of us if we can answer any further questions that you may have.

Sincerely,



Megan McCracken



Jen Moreno

Encl.

Attachments A-D

Attachment A

Attachment B

Attachment C

Attachment D