Fordham University School of Law

May 2007

THE LETHAL INJECTION QUANDARY: HOW MEDICINE HAS DISMANTLED THE DEATH PENALTY

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(WORKING PAPER)

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INTRODUCTION

On February 14, 2006, a federal district court rendered a ruling[1] that would transform this country's views of capital punishment.[2] For California to conduct the lethal injection execution of Michael Morales, the state had to choose one of two court-mandated options: provide qualified medical personnel who would ensure Morales was unconscious during the procedure, or alter the Department of Corrections' execution protocol so that only one kind of drug would be given, rather than the standard sequence of three different drugs.[3] Evidence suggested that, of the eleven inmates lethally injected in California, six may have been conscious and tormented by the three-drug regimen,[4] potentially creating an "'unnecessary risk of unconstitutional pain or suffering'" in violation of the Eighth Amendment's Cruel and Unusual Punishments Clause.[5] In a captivating legal moment, the state chose to have medical experts present at Morales' execution, setting the stage for a showdown between law and medicine.[6]

Immediately, medical societies protested the *Morales* court's recommendation and the ethical quandaries it posed.[7] Three stalwart groups – the American Medical Association,[8] the

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[1] *See* Morales v. Hickman, 415 F. Supp. 2d 1037 (N.D. Cal. 2006), *aff'd per curiam*, 438 F.3d 926 (9th Cir. 2006), *cert. denied*, 126 S. Ct. 1314 (2006).

[2] *See infra* Part IV.

[3] *Morales*, 415 F. Supp. 2d at 1047; *see also* Morales v. Hickman, Final Order Re: Defendants' Compliance With Conditions; Order Denying Plaintiff's Motions for Discovery of Information and for Reconsideration 1, 2 (N.D. Cal. Feb. 16, 2006) (giving mention to anesthesiologists specifically).

[4] *Morales*, 415 F. Supp. 2d at 1045. The *Morales* court refers to execution problems "in at least six out of thirteen executions by lethal injection in California. . . . " *Id.* However, two of those thirteen executions were conducted by lethal gas, not by lethal injection. *See* Morales v. Tilton, 465 F. Supp.2d 972, 975 n.3 (N.D. Cal. 2006) ("In fact, there have been only eleven executions by lethal injection in California.").

[5] Morales, 415 F. Supp. at 1039 (citation omitted). The Eighth Amendment provides that "[e]xcessive bail shall not be required, nor excessive fines imposed, nor cruel and unusual punishments inflicted." U.S. Const. amend VIII.

[6] Morales v. Hickman, Final Order Re: Defendants' Compliance With Conditions; Order Denying Plaintiff's Motions for Discovery of Information and for Reconsideration 1, 2 (N.D. Cal. Feb. 16, 2006).

[7] Atul Gawande, *When Law and Ethics Collide – Why Physicians Participate in Executions*, 354 N. Engl. J. Med. 1221, 1221 (2006). A key ethical aspect of this topic is to what extent lethal injection constitutes a "medical procedure," and violates the Hippocratic Oath to which medical students swear upon graduation. *See* Louis Lasagna, The Hippocratic Oath-Modern Version (1964), *available at* http://www.pbs.org/wgbh/nova/doctors/oath_modern.html .

[8] *See* Priscilla Ray, Chair, Am. Med. Ass'n. Council on Ethical and Judicial Affairs, *AMA Opposes Physician Involvement in Executions*, Feb. 17, 2006, http://www.ama-assn.org/ama/pub/category/16007.html (last visited Mar. 9, 2007). The press release reiterated the AMA's opposition to doctor participation in lethal injections and criticized the ruling of Judge Fogel in the *Morales* case. *See id.*

American Society of Anesthesiologists,[9] and the California Medical Association[10] – united in their opposition to doctors joining executioners. Even bigger surprises from *Morales* were yet to come. It took just one day for prison officials to find two anesthesiologists willing to take part in Morales' execution, assured that they would remain anonymous.[11] It soon became clear, however, that these doctors had not been fully informed of their roles. In a stunning blow to the *Morales* court's directive, both anesthesiologists resigned mere hours before the scheduled execution time.[12] Because of their ethical responsibilities, they could not accept the Ninth Circuit Court of Appeals' interpretation that they personally would intervene and provide medication or medical assistance if the inmate appeared conscious or in pain.[13] The doctors' reasons for refusing to participate spotlight a crucial predicament states face in the administration of lethal injection.

The *Morales* case unearthed a nagging paradox. The people most knowledgeable about the process of lethal injection – doctors, particularly anesthesiologists – are often reluctant to impart their insights and skills. This very dilemma moved Judge Jeremy Fogel, who presided over Morales' hearings, to assume unprecedented involvement in an area that had been controlled primarily by legislatures and department of corrections personnel.[14] In response to the doctor pullout and questions about lethal injection's viability, Judge Fogel organized the longest and most thorough evidentiary hearing ever conducted on any execution method.[15] The homework paid off: Examinations and testifying experts opened a window into the hidden world of executions.

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[9] *See* Valerie Reitman, *Doctors Wary of Crossing Line*, L.A. Times, Feb. 22, 2006, at 14; Dorsey Griffith, *Execution Doctors: An Ethics Issue: Medical Groups Criticize Plan for Physician to Assess If The Condemned Can Feel Pain*, Sacramento Bee, Feb. 17, 2006, at A3.

[10] *See* Calif. Med. Ass'n, *California Medical Assn. Objects to Physician Participation in Executions* (Feb. 16, 2006) (emphasizing, in response to Judge Fogel's ruling, that the California Medical Association "has for decades sought to end physician participation in capital punishment").

[11] *See* Morales v. Tilton, 465 F. Supp.2d 972, 975 (N.D. Cal. 2006); Morales v. Hickman, Order on Defendant's Motion to Proceed on Alternative Method to Order Denying Preliminary Injunction, at 2 (N.D. Cal. Feb. 21, 2006).

[12] *See Morales*, 465 F. Supp.2d at 977 (noting that, "for reasons that remain somewhat unclear, there was a disconnect between the expectations articulated in the orders of this Court and the Court of Appeals and the expectations of the anesthesiologists regarding how they would participate in Plaintiff's execution") (internal quotation omitted).

[13] *See Morales*, 465 F. Supp.2d at 975; *see also* Morales v. Hickman, 438 F.3d 926, 931 (9th Cir. 2006). In response to Morales' concerns that the role of the anesthesiologists was "uncertain," and that the state had not specified whether the execution chamber's anesthesiologist would do more "than monitor Mr. Morales' level of unconsciousness," *id.* at 930, the Ninth Circuit attempted clarification. *Id.* at 931 (citing Final Order Re: Defendants' Compliance With Conditions; Order Denying Plaintiff's Motions for Discovery of Information and for Reconsideration 1, 2 (N.D. Cal. Feb. 16, 2006).

[14] Judge Fogel acknowledged his uncommon degree of involvement. *See Morales*, 465 F. Supp. 2d at 975 ("It is hoped that the remedy . . . will be a one-time event; . . . the particulars of California's lethal-injection protocol are and should remain the province of the State's execution branch."). For a discussion of legislative changes in execution methods over time, see generally Deborah W. Denno, *When Legislatures Delegate Death: The Troubling Paradox Behind State Uses of Electrocution and Lethal Injection and What It Says About Us*, 63 Ohio St. L.J. 63 (2002) [hereinafter Denno, *When Legislatures Delegate*]; Deborah W. Denno, *Getting to Death: Are Executions Constitutional?*, 82 Iowa L. Rev. 319 (1997) [hereinafter Denno, *Getting to Death*]; Deborah W. Denno, *Is Electrocution an Unconstitutional Method of Execution? The Engineering of Death Over the Century*, 35 Wm. & Mary L. Rev. 551 (1994) [hereinafter Denno, *Electrocution*].

[15] *See Morales*, 465 F. Supp.2d at 974 (noting that "the Court has undertaken a thorough review of every aspect of the protocol . . . [and] has reviewed a mountain of documents . . . [as well as] conducted five days of formal hearings, including a day at San Quentin State Prison that involved a detailed examination of the execution chamber and related facilities").

Given that lethal injection is this country's leading execution method,[16] *Morales* cast a shadow over executions across the nation. By the time Judge Fogel ruled on December 15, 2006, that California's lethal injection protocol "as implemented," violated the Eighth Amendment,[17] other states already had recognized such a possibility.[18] Constitutional challenges to lethal injection currently dominate much of the nation's death penalty litigation, with no end in sight.[19]

As *Morales* makes clear, medicine is the key to understanding the problems of lethal injection. Like all thirty-six states that use injection, California's execution protocol provides for the intravenous administration of three drugs: sodium thiopental, a common anesthetic for surgery used to cause unconsciousness; pancuronium bromide, a total muscle relaxant that stops breathing by paralyzing the diaphragm and lungs; and potassium chloride, a toxin that induces cardiac arrest and permanently stops the inmate's heartbeat.[20] In *Morales*, both parties agreed that, under the state's protocol, the listed amount of the first drug, sodium thiopental, should cause the condemned inmate to lose consciousness in less than a minute. The parties also concurred, however, that if the sodium thiopental was ineffective, it would be unconstitutional to inject the second and third drugs into a conscious person.[21] Because of its paralytic effects, the second drug, pancuronium bromide, would mask indications that the inmate was conscious and in "excruciating pain" from the combined impact of all three drugs.[22]

Judge Fogel determined that California's process embodied too much of a risk for unconstitutionality due to "a number of critical deficiencies" in the protocol.[23] These included: (1) "*inconsistent and unreliable screening of execution team members*" – highlighted, for instance, by one execution team leader's smuggling of illegal drugs into the prison while also in charge of handling the sodium thiopental (a pleasurable and addictive controlled substance);[24] (2) "*lack of meaningful training, supervision, and oversight of the execution team*" – exemplified by the court's conclusion that team members "almost uniformly have no knowledge of the nature or properties of the drugs that are used or the risks or potential problems associated with the procedure" and the shockingly indifferent reactions by team members when describing troublesome executions;[25] (3) "*inconsistent and unreliable record-keeping*" – revealed by inadequate documentation concerning whether all of the sodium thiopental prepared for an execution actually was injected and testimony that in several executions it was not, as well as

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[16] *See* Denno, *When Legislatures Delegate*, *supra* note 14, at 69. Currently, the United States has available five different types of execution methods: hanging, firing squad, electrocution, lethal gas, and lethal injection. *See id.*

[17] *Morales*, 465 F. Supp.2d at 981.

[18] *See, e.g.*, Taylor v. Crawford, No. 05-4173-CV, 2006 WL 1779035, at *6 (W.D. Mo. June 26, 2006) (holding that Missouri's implementation of its lethal injection protocol violated constitutional mandates).

[19] *See infra* Part IV; *see also* Vesna Jaksic, *Death Penalty Challenges Build: Eleven States React to Bad Convictions, Botched Executions*, Nat'l L.J., Mar. 5, 2007, at 17 (noting that "[a] perfect storm of problematic executions, wrongful convictions and recent court rulings against the practice of lethal injection has led a growing number of states to challenge the death penalty through lawsuits and legislative action").

[20] *See* Denno, *When Legislatures Delegate*, *supra* note 14, at 98.

[21] *See Morales*, 465 F. Supp. 2d at 978.

[22] *See id.* at 980.

[23] *Id.* at 979; *see also id.* at 981 ("Defendants' actions and failures to act have resulted in an undue and unnecessary risk of an Eighth Amendment violation. This is intolerable under the Constitution.").

[24] *Id.* at 979.

[25] *Id.*

evidence that "[a] number of the execution logs are incomplete or contain illegible or overwritten entries with respect to critical data;"[26] and (4) "*inadequate lighting, overcrowded conditions, and poorly designed facilities*" – noted by descriptions that the execution team members, who were in a separate room from the inmate, worked in conditions in which the lighting and sound were so poor and the space so constrained that team members could not effectively observe or hear the inmate – much less tell whether the inmate was unconscious.[27]

Other lethal injection challenges throughout the country revealed comparably disturbing details. In Missouri, where a federal district court held that the state's implementation of lethal injection was unconstitutional, the dyslexic doctor who had supervised fifty-four executions over the course of a decade had a record of more than twenty malpractice suits.[28] In Kentucky, the protocol allowed improperly trained executioners to insert catheters into an inmate's neck despite a doctor's refusal to do so and heated criticism of the procedure, a practice ultimately ruled unconstitutional.[29] In Florida, at the end of a year of intense scrutiny of lethal injection, a December 2006 execution lasted thirty-four minutes while the prisoner appeared conscious and in pain.[30] And, in North Carolina, a doctor present to monitor the inmate's level of consciousness—a court-ordered requirement, but one that would violate the American Medical Association's ethical guidelines—later said he had not done so.[31] When, after repeated needle pokes, California inmate Stanley Tookie Williams asked his executioners – "[y]ou guys doing that right?"[32] – Williams could have been addressing department of corrections personnel in every lethal injection state.

Medical personnel – those individuals most likely to know whether a lethal injection is being done "right" – often avoid the procedure. In 2006, when a surge of court cases and resulting media attention began to focus on botched lethal injections,[33] the president of the American Society of Anesthesiology reacted defensively: "Lethal injection was not anesthesiology's idea," he insisted.[34] Rather, the problem rested with "American society," which "decided to have capital punishment as part of our legal system and to carry it out with lethal injection."[35] For these reasons, "the legal system has painted itself into this corner and it is not [the medical profession's] obligation to get it out."[36] What the ASA president's statement does not acknowledge, however, is that medicine is in the same corner with law, holding the paint can and the brush.

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[26] *Id.*
[27] *Id.*
[28] *See* Ellyde Roko, Note, *Executioner Identities: Toward Recognizing a Right to Know Who Is Hiding Beneath the Hood*, 75 Fordham L. Rev. 2791, 2791 (2007).
[29] *See* Baze v. Rees, -- S.W.3d --, 2006 WL 3386544, at *3 (Ky. Nov. 22, 2006); *see also* Deborah W. Denno, *Death Bed*, 124 TriQuarterly 141, 162 (2006).
[30] *See* Governor's Comm'n on Admin. of Lethal Injection, *Final Report with Findings and Recommendations* 8 (Fla., Mar. 1, 2007) [hereinafter *Florida Commission Report*].
[31] *See* Andrea Weigl, *Doc's Execution Role: 'Be Present'*, News & Observer (Raleigh, N.C.), Mar. 20, 2007, at 1.
[32] Kevin Fagan, *The Execution of Stanley Tookie Williams: Eyewitness: Prisoner Did Not Die Meekly, Quietly*, S.F. Chron., Dec. 14, 2005, at A12.
[33] *See infra*, Part IV.
[34] Orin F. Guidry, Am. Soc'y of Anesthesiologists, *Message from the President: Observations Regarding Lethal Injection*, June 20, 2006, http://www.asahq.org/news/asanews063006.htm (last visited Mar. 9, 2007).
[35] *Id.*
[36] *Id.*

This next phase of the examination of lethal injection in this country will prove most critical: How will states handle the perplexing medical questions that lethal injection has posed? Most courts would agree with Judge Fogel that while the system of "lethal injection is broken . . . it can be fixed."[37] But how?

Part I of this article examines how states ended up with such constitutionally vulnerable lethal injection procedures. By analyzing the history of lethal injection, this article shows that mistakes made three decades ago with the method's creation are being repeated today. Part II investigates the crucial link between law and medicine in the context of lethal injection. Physician participation in executions, though looked upon with disdain, is more prevalent—and perhaps more necessary—than many would like to believe. Part III reports the results of this author's unique nationwide study of lethal injection protocols and medical participation. The study demonstrates that states have continued to produce grossly inadequate protocols that severely restrict sufficient understanding of how executions are performed and heighten the likelihood of unconstitutionality. The part emphasizes in particular the utter lack of medical or scientific testing of lethal injection despite the early and continuous involvement of doctors but ongoing detachment of medical societies. Part IV discusses the legal developments that lead up to *Morales* as well as the strong and rapid reverberations that followed, particularly with respect to medical contributions.

This article concludes with two recommendations. First, much like what occurred in this country when the first state switched to electrocution, there should be a nationwide study of proper lethal injection protocols. An independent commission consisting of a diverse group of qualified individuals, including medical personnel, should conduct a thorough assessment of lethal injection, especially the extent of physician participation. Second, this article recommends that states take their execution procedures out of hiding. Such visibility would increase public scrutiny, thereby enhancing the likelihood of constitutional executions.

At no other time in this country's history have doctors or medical organizations been this committed to evaluating a method of execution.[38] Such examination has illuminated the current finger-pointing between law and medicine concerning responsibility for lethal injection's flaws. Medical societies may have shunned involvement with lethal injection, perhaps at times inappropriately, but physicians contributed to the method's creation and continue to take part in its application. Both law and medicine turned a blind eye to a procedure about which warnings were blared repeatedly. The problem rests not only with "American society," but also with the legal and medical communities that are part of it.

I. THE SEARCH FOR A MEDICALLY HUMANE EXECUTION

This country's centuries-long search for a medically humane method of execution landed at the doorstep of lethal injection. Of the thirty-eight death penalty states, lethal injection is the

[37] Morales v. Tilton, 465 F. Supp.2d 972, 974 (N.D. Cal. 2006).
[38] *See infra* Part II.

sole method of execution in twenty-eight states[39] and is one of two methods of execution in nine.[40] Nebraska uses only electrocution.[41]

Statistics demonstrating lethal injection's dominance, however, belie the rapidly changing impact of recent lethal injection challenges. In 2006, for example, executions plunged to half of their 1999 numbers.[42] Such declines seem likely to continue, as thirteen states currently have executions on hold, all due, in whole or in part, to lethal injection-related challenges.[43] In the early part of 2007, nearly half of the thirty-eight death penalty states had

[39] *See* Ala. Code §§ 15-18-82-82.1 (2007); Ariz. Rev. Stat. Ann. § 13-704 (2006); Ark. Code Ann. § 5-4-617 (2006); Cal. Penal Code § 3604 (West 2007); Colo. Rev. Stat. Ann. § 18-1.3-1202 (West 2006); Conn. Gen. Stat. Ann. § 54-100 (West 2007); Del. Code Ann. tit. 11 § 4209 (2007); West's F.S.A. § 922.105 (West 2007); Ga. Code Ann., § 17-10-38 (2006); Idaho Code § 19-2716 (2006); 725 Ill. Comp. Stat. Ann. 5/119-5 (West 2006); Ind. Code Ann. § 35-38-6-1 (West 2006); Kan. Stat. Ann. § 22-4001 (2006); Ky. Rev. Stat. Ann. § 431.220 (West 2006); La. Rev. Stat. Ann. § 15:569, 15:569.1 (2006); Md. Code Ann., Crim. Law § 2-303 (2006); Miss. Code Ann. § 99-19-51 (2006); Mo. Ann. Stat. 546.720 (West 2006); Mont. Code Ann. § 46-19-103 (2005); Nev. Rev. Stat. § 176.355 (West 2006); N.H. Rev. Stat. § 630:5 (2006); N.J. Stat. Ann. § 2C:49-2 (West 2007); N.M. Stat. § 31-14-11 (2006); N.C. Gen. Stat. Ann. § 15-187 (West 2006); Ohio Rev. Code Ann. § 2949.22 (West 2007); Okl. Stat. Ann. tit. 22, § 1014 (West 2006); Or. Rev. Stat. § 137.473 (2005); 61 Penn. Stat. § 3004 (West 2006); S.C. Code Ann. § 24-3-530 (2006); S.D. Codified Laws § 23A-27A-32 (2006); Tenn. Code Ann. § 40-23-114 (West 2006); Tex. Code Crim. Proc. Ann. art. § 43.14 (Vernon 2006); Utah Code Ann. § 77-18-5.5 (West 2006); Va. Code Ann. § 53.1-234 (West 2006); Wash. Rev. Code Ann. § 10.95.180 (West 2007); Wyo. Stat. Ann. § 7-13-904 (2006). The New York Court of Appeals held the state's death penalty statute unconstitutional in 2004, preventing executions. *See* People v. LaValle, 817 N.E.2d 341, 367 (N.Y. 2004).

[40] These nine states are divided according to the alternative execution method they allow apart from lethal injection. Alabama, Florida, South Carolina, and Virginia allow for electrocution. *See* Ala. Code §§ 15-18-82-82.1 (2007); West's F.S.A. § 922.105 (West 2007); S.C. Code Ann. § 24-3-530 (2006); Va. Code Ann. § 53.1-234 (West 2006). New Hampshire and Washington also have hanging as a method. *See* N.H. Rev. Stat. § 630:5 (2006); Wash. Rev. Code Ann. § 10.95.180 (West 2007). California and Missouri both have lethal gas as an alternative. *See* Cal. Penal Code § 3604 (West 2007); Mo. Ann. Stat. 546.720 (West 2006). Idaho provides for execution by firing squad. *See* Idaho Code § 19-2716 (2006). This footnote does not include statutes designating a choice only if an inmate was sentenced before a certain date, or any of the other myriad variations in statutes that have been documented in detail elsewhere.

[41] *See* Neb. Rev. Stat. § 29-2532 (2006).

[42] Executions in the United States have decreased from a high of 98 in 1999. *See* Capital Punishment 2005, http://www.ojp.usdoj.gov/bjs/pub/pdf/cp05.pdf, at 9. In 2006, states executed 53 people, 52 by lethal injection and one by electrocution. *See* Capital Punishment Statistics: Summary Findings, http://www.ojp.usdoj.gov/bjs/cp.htm. Fourteen states executed condemned inmates. *See id.* Texas executed twenty-four inmates; Ohio executed five inmates; Florida, North Carolina, Oklahoma, and Virginia each executed four inmates; and Indiana, Alabama, Mississippi, South Carolina, California, Montana, Nevada, and Tennessee each executed one inmate. *See id.*

[43] Illinois officially imposed a moratorium on executions in 2001. *See* Governor Ryan Declares Moratorium On Executions, Will Appoint Commission To Review Capital Punishment System, Jan. 31, 2000, at http://www.illinois.gov/PressReleases/ShowPressRelease.cfm?SubjectID=3&RecNum=359. New Jersey lifted a three-month long moratorium in March 2007, but executions still are on hold in the state after a state court declined to approve the state's revised protocol. *See* In re Readoption with Amendments of Death Penalty Regulations, N.J.A.C. 10A:23, by the New Jersey Department of Corrections, 842 A.2d 207 (N.J. App. Div. Feb. 20, 2004); *see also* Jeff Whelan, *Christie Seeks Federal Death Penalty in Newark Slaying*, The Star-Ledger (Newark, N.J.), April 4, 2007, at 18. Federal district courts in California and Missouri held execution protocols unconstitutional in 2006. *See* Morales v. Tilton, 465F. Supp. 2d 972 (N.D.Cal. 2006); Taylor v. Crawford, No. 05-4173-CV, 2006 WL 1779035, *8 (W.D. Mo., 2006). Three states, Florida, South Dakota, and Tennessee, have moratoriums on executions by executive order. *See* Fla. Exec. Order 260 (Dec. 15, 2006) (staying all executions after a botched execution); An Order Directing the Department of Correction to Complete a Comprehensive Review of the Manner in which the Death Penalty Is Administered in Tennessee, Exec. Order No. 43, *http://www.tennesseeanytime.org/governor/AdminCMSServlet?action=viewFile&id=969* (placing executions on hold for ninety days); Aug. 29, 2006 Press Release from Governor's Office: Gov. Rounds Issues Statement on the Stay of Execution for Elijah Page, http://www.state.sd.us/governor/. Courts in five other states stayed executions in 2006 and have not had an execution since the stay. *See* Robinson v. Beck, 07 CVS 001109 (Wake Co. Sup. Ct. Jan. 25, 2007), *available at:* http://www.law.berkeley.edu/clinics/dpclinic/Lethal%20Injection%20Documents/North%20Carolina/2007.01.25%20order.pdf; Cooey v. Taft, 430 F. Supp. 2d 702 (S.D. Ohio 2006) (staying an execution pending a challenge to lethal injection); Jackson v. Taylor, Civ. No. 06-3000 (D. Del. May 9, 2006) (staying an execution) *available at:* http://www.law.berkeley.edu/clinics/dpclinic/Lethal%20Injection%20Documents/Delaware/2006.05.09%20District%20Ct%20order.pdf; Nooner v. Norris, No. 5:06CV00110 (E.D. Ark. 2006) *available at:*

legislation pending either to abolish the death penalty,[44] or to establish a moratorium on executions.[45] Of course, there have been backlashes.[46] But undeniable evidence shows death penalty's slide, and lethal injection is a crucial domino in the deck.

A. Before Lethal Injection

This country's turn to lethal injection reflects states' growing reliance on medicine as a response to philosophical, financial, and political pressures to eliminate the death penalty.[47] For example, New York state's increasing opposition to capital punishment in the early 1800's – a move prompted by a series of disastrous public hangings attended by crowds of thousands[48] – lead the state's Governor to ask the legislature in 1885 "whether the science of the present day" could not find a less barbaric means to execute.[49] The Governor's appointed Commission of three "well known citizens" ultimately selected the electric chair, following their two-year impressively detailed study of every execution method ever used throughout history.[50]

In 1890, the murderer William Kemmler became the first person in the country to be electrocuted.[51] New York's decision to enact electrocution spurred intense legal and scientific battles, resolved only when the United States Supreme Court decided that the Eighth Amendment would not apply to the states.[52] Kemmler was executed in a day of confusion and horror,[53] suffering a slow demise of burning flesh and ashes.[54] Such catastrophe did not

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http://www.law.berkeley.edu/clinics/dpclinic/Lethal%20Injection%20 Documents /Arkansas/ 2006.06.26%20order%20granting%20PI.pdf; Evans v. State, Nos. 107, 122-24, 2006 WL 3716363 (Md. Dec. 19, 2006).

[44] Numerous states have legislation pending to abolish the death penalty. *See, e.g.*, H.B. 2278, 48th Legis., 1st Reg. Sess. (Ariz. 2007); H.B. 1094, 66th Gen. Assem., Reg. Sess. (Colo. 2007); S.B. 328, 95th Gen. Assem. (Ill. 2007); S.B. 222, 82d. Legis., Reg. Sess. (Kan. 2007); H.B. 200, Reg. Sess. (Ky. 2007); H.B. 225, 422d. Gen. Assem., Reg. Sess. (Md. 2007); H.B. 216, Legis. Reg. Session (Miss. 2007); S.B. 354, 94th Gen. Assem., 1st Reg. Sess. (Mo. 2007); L.B. 476, 100th Legis., 1st Sess. (Neb. 2007); H.B. 607, 160th Legisl., 2007 Sess. (N.H. 2007); S.B. 2471, 212th Legis. (N.J. 2007); H.B. 190, 48th Legis., 1st Sess. (N.M. 2007); A.B. 542, 230th Legis. 2007-08 Reg. Sess. (N.Y. 2007); H.B. 1197, 82d Legis. Assem. (S.D. 2007); H.B. 745, 80th Legis. (Tex. 2007); H.B. 1960, 2007 Sess. (Va. 2007); H.B. 1518, Wash. 60th, 1st Reg. Sess. (Wash., 2007).

[45] Legislation in several states seeks to impose a moratorium to study capital punishment is pending. *See, e.g.*, H.B. 205, Legis. Reg. Session (Miss. 2007); S.B. 439, 94th Gen. Assem., 1st Reg. Sess. (Mo. 2007); H.B. 809, 80th Legis. (Tex. 2007).

[46] Several states are seeking to expand the application of the death penalty. *See* H.B. 185, 149th Gen. Assem. (Ga. 2007), H.B. 3130, 117th Gen. Assem. (S.C. 2007), H.B. 86, 57th Legis. (Utah 2007). A bill in West Virginia is attempting to reintroduce the punishment. *See* H.B. 2124, 78th Legis. (W. Va. 2007).

[47] *See generally* Denno, *When Legislatures Delegate*, *supra* note 14.

[48] *See generally* Philip E. Mackey, Hanging in the Balance: The Anti-Capital Punishment Movement in New York State, 1776-1961 (1982).

[49] *In re* Kemmler, 136 U.S. 436, 444 (1890).

[50] Report of the Commission to Investigate and Report the Most Humane and Practical Method of Carrying into Effect the Sentence of Death in Capital Cases (1888) [hereinafter *New York Commission Report*]. The Commission consisted of its Chair, Elbridge T. Gerry, a prominent attorney and counsel for the Society for the Prevention of Cruelty to Animals, Dr. Alfred P. Southwick, a dentist from Buffalo, and Matthew Hale, an attorney from Albany. *See id.*

[51] *See Far Worse than Hanging*, N.Y. Times, Aug. 7, 1890, at 1-2.

[52] Kemmler, 136 U.S. at 446.

[53] *See Far Worse than Hanging*, *supra* note 51; *see also* Richard Moran, Executioner's Current: Thomas Edison, George Westinghouse, and the Invention of the Electric Chair 15-16 (2002).

[54] *See Far Worse than Hanging*, *supra* note 51; *see also* Moran, *supra* note 53, at 18-20 (2002).

dissuade states from adopting this new method of purported scientific advancement.[55] Electrocution still was deemed superior to hanging or, at the very least, was far less visible.[56]

The problems with electrocution only worsened with the passing decades, despite (or perhaps because of) the enhanced scrutiny of the method's application.[57] By the time Allen Lee Davis was executed in Florida in 1999, over a century after Kemmler, the tragedies of the method appeared insurmountable: Davis suffered deep burns and bleeding on his face and body, as well as partial asphyxiation from the mouth strap that belted him to the chair's head-rest.[58] Millions of people around the world virtually viewed the results of Davis's execution through the Florida Supreme Court's website postings of Davis's post-execution color photographs – ultimately crashing and disabling the Florida court's computer system for months.[59] While the Davis botch did not halt electrocutions, it did prompt the Florida legislature to enable inmates to choose between electrocution and lethal injection.[60]

In light of this troubling execution methods history,[61] lethal injection's popularity is understandable. Modern hangings risked being too long and cruel, like their predecessors.[62] Lethal gas was judged the worst of all.[63] In 1992, for example, Donald Harding's eleven-minute execution and suffocating pain were so disturbing for witnesses that reporters cried, the attorney general vomited, and the prison warden claimed he would resign if forced to conduct another legal gas execution.[64] While the firing squad has not been systematically evaluated, and may even be the most humane of all methods, it always has carried with it the baggage of its brutal image and roots.[65] The law turned to medicine to rescue the death penalty.

The following section provides the most thorough and accurate account available of this law-medicine partnership based on historical research as well as extensive interviews with the major parties involved in lethal injection's origin. The legal system relied on anesthesiology just enough to understand the concept of injection, but not to account sufficiently for its barbarity when misapplied on human beings.

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[55] *See* Denno, *Electrocution*, *supra* note 14, at 364-370.
[56] *See* Stuart Banner, The Death Penalty: An American History 169 (2002) (noting that fifteen states had adopted electrocution by 1913 and another eleven states used the method by 1950).
[57] *See generally* Marian J. Borg & Michael L. Radelet, *On Botched Executions*, in Capital Punishment: Strategies for Abolition 143, 143-68 (Peter Hodgkinson & William A. Schabas eds. 2004).
[58] *See* Provenzano v. Moore, 744 So. 2d 413, 442-44 (Fla. 1999) (Shaw, J., dissenting); *see also* Denno, *When Legislatures Delegate*, *supra* note 14, at 78-79.
[59] *See, e.g.*, *Millions Flock to US Execution Site*, The Scotsman (Edinburgh, Scot.), Nov. 1, 1999, at 22; *see also* Denno, *When Legislatures Delegate*, *supra* note 14, at 78-79
[60] *See* West's F.S.A. § 922.105 (West 2007) (providing inmates with a choice between electrocution and lethal injection).
[61] *See* Borg & Radelet, *supra* note 57, at 143-68.
[62] *See* Campbell v. Wood, 18 F.3d 662, 684-85 (9th Cir. 1994); *see also* Gawande, *supra* note 7, at 1222 ("Under the best of circumstances, the cervical spine is broken at C2, the diaphragm is paralyzed, and the prisoner suffocates to death, a minutes-long process.").
[63] *See* Fierro v. Gomez, 77 F.3d 301, 309 (9th Cir. 1996) (finding execution by lethal gas unconstitutional).
[64] *See* Borg & Radelet, *supra* note 57, at 163.
[65] *See generally* Christopher Cutler, *Nothing Less Than the Dignity of Man: Evolving Standards, Botched Executions and Utah's Controversial Use of the Firing Squad*, 50 Clev. St. L. Rev. 335, 337-98 (2002-2003) (surveying the history and use of the firing squad in the United States).

B. The Advent of Lethal Injection

Lethal injection was considered a potential execution method in the United States as early as 1888.[66] The New York Governor's appointed Commission rejected it, in part because of the medical profession's belief that, with injection, the public would begin to link the practice of medicine with death.[67] Of course, this concern about lethal injection exists to the present day.[68]

Six decades later, Great Britain's Royal Commission on Capital Punishment also dismissed lethal injection, concluding after a five-year study of the United Kingdom's entire death penalty process that injection was no better than hanging, the country's long-standing method.[69] Critical to the Royal Commission's investigation of lethal injection, however, was the substantial weight the Commission gave to medical opinions and expertise.[70] The Commission solicited input from members of two of the country's most established medical organizations – the British Medical Association and the Association of Anesthetists – as well as prison medical officers.[71]

The host of problems these medical experts detected with lethal injection still ring true today. For example, based on such medical contributions, the Royal Commission determined that a standard lethal injection could not be administered to individuals with certain "physical abnormalities" that make their veins impossible to locate; rather, it was likely that executioners would have to implement intramuscular (as opposed to intravenous) injection, even though the intramuscular method would be slower and more painful.[72] In addition, the Commission emphasized that lethal injection requires medical skill.[73] While the British medical societies made clear their opposition to participating in the process,[74] the Royal Commission still believed that acceptable executioners could be found, even in the medical profession.[75] Nonetheless, other obstacles to lethal injection proved determinative.[76] In particular, the Commission found a lack of "reasonable certainty" that lethal injections could be performed "quickly, painlessly and decently," at least at that time.[77] Ultimately, in 1965, the death penalty was, with a few exceptions, abandoned in Great Britain.[78]

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[66] *See New York Commission Report*, *supra* note 50.
[67] *See* Denno, *Electrocution*, *supra* note 14, at 575-577.
[68] *See infra* Part II.
[69] *See* Royal Commission On Capital Punishment, 1949-53 Report, 258, 261 (1953) [hereinafter *Royal Commission Report*].
[70] *See id.* at 257-61.
[71] *See id.* at 257.
[72] *See id.* at 258-59.
[73] *See id.* at 258-60.
[74] *See id.* at 258. The Commission quoted the view of the British Medical Association:
"No medical practitioner should be asked to take part in bringing about the death of a convicted murderer. The Association would be most strongly opposed to any proposal to introduce, in place of judicial hanging, a method of execution which would require the services of a medical practitioner, either in carrying out the actual process of killing or in instructing others in the technique of the process." *Id.*
[75] *See id.* at 259.
[76] *See id.*
[77] *Id.* at 261.
[78] *See* Murder (Abolition of Death Penalty) Act 1965, c. 71 (Eng.). Consequently, there was no reason for the British to re-evaluate whether lethal injection would be preferable to other methods of execution. *See* Franklin E. Zimring & Gordon Hawkins, Capital Punishment and the American Agenda 109-10 (1986).

In 1976, the United States re-examined the lethal injection issue after the Supreme Court reinstated the death penalty following a four-year moratorium.[79] Remarkably, during this re-examination, none of the medical opinion evidence gathered on lethal injection — either from New York or the United Kingdom — was ever even mentioned in legislative discussions or debates. Seemingly oblivious to prior concerns, American lawmakers emphasized that lethal injection appeared more humane and visually palatable relative to other methods.[80] It was also cheaper.[81]

1. Oklahoma Roots

In May 1977, Oklahoma became the first state to adopt lethal injection.[82] Contrary to the thorough and deliberative approaches taken by the New York and British commissions, however, accounts suggest that two doctors (at most) were the sole medical contributors to the method's creation.[83] At each step in the political process, concerns about cost, speed, aesthetics, and legislative marketability trumped any medical interest that the procedure would ensure a humane execution.

The two key legal players in the development of Oklahoma's lethal injection statute were then-Oklahoma State Senator Bill Dawson,[84] and then-Oklahoma House Representative Bill Wiseman.[85] Dawson claimed that he first thought of using drugs for human execution when he was a college student.[86] Wiseman said he acquired the idea in 1976, when he visited his personal physician, the president of the Oklahoma Medical Association (OMA), and asked him for a more humane way to execute death row inmates.[87] Strikingly, that physician later informed Wiseman that the OMA Board did not want to become entrenched in the venture because licensed physicians could not participate in executions.[88] In subsequent years, American medical societies continuously would echo the OMA's stance, balking at any official involvement in lethal injection. And lawmakers would proceed with their decision making, regardless.

With medical societies out of the picture, both Dawson and Wiseman turned elsewhere. Eventually, they consulted with A. Jay Chapman, M.D., then Chief Medical Examiner for

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[79] *See* Gregg v. Georgia, 428 U.S. 153 (1976) (plurality opinion).
[80] *See infra* Part II.
[81] *See infra* notes 112-14 and accompanying text.
[82] *See* Denno, *Getting to Death*, *supra* note 14, at 375.
[83] *See infra* notes 89-103 and accompanying text.
[84] Dawson died of a brain tumor in 1987. *See* Robby Trammell, *Bill Dawson, 43, Dies of Cancer*, Daily Oklahoman, Jan. 18, 1987, at A1.
[85] The final bill listed Dawson and Wiseman among its sponsors. *See* S.B. 10, 36th Leg., 1st Sess. (Okla. 1977) (An Act Relating to Criminal Procedure; Amending 22 O.S. 1971, Section 1014; and Specifying the Manner of Inflicting Punishment of Death; and Making Provisions Separable). The bill passed the Senate on May 3, 1977 and the House of Representatives on May 9, 1977. *See id*. Both the House and Senate held conferences on the bill and issued a conference report, indicating that it was controversial. *See id.*
[86] *See* Robert Moore, *Doctor as Executioner: The Argument Over Death by Injection*, The New Physician, September 1980, at 21-24. These thoughts were fueled further when, as a senator, Dawson received a letter from a student in his district reiterating the idea of lethal injections as a viable method for execution. *See id.* at 22.
[87] *See* William J. Wiseman, Jr., *Confessions of a Former Legislator*, Christian Century, June 20-27, 2001, at 6-7.
[88] *See* Wiseman, *supra* note 87, at 6.

Oklahoma.[89] From the start, Chapman was upfront about his glaring lack of expertise. Indeed, when initially contacted, his "first response was that [he] was an expert in dead bodies but not an expert in getting them that way."[90] Wiseman also warned Chapman about OMA's position and the effect such views could have on Chapman's medical career.[91] Chapman was not worried: "'To hell with them: let's do this.'"[92]

The two men pulled out a pad and quickly drafted a statute based on Chapman's dictation: "An intravenous saline drip shall be started in the prisoner's arm, into which shall be introduced a lethal injection consisting of an ultra-short-acting barbiturate in combination with a chemical paralytic."[93] Chapman assumed that the chemicals used would be sodium thiopental (what has in fact been used), and the paralytic would be choral hydrate; yet, both Wiseman and Chapman believed the statute should be vague.[94] Neither of them was certain if or when lethal injection would be implemented, or what drugs might then be available.[95] Unfortunately, such stunning unknowns had no impact on Wiseman's confidence in the procedure's potential success. As Wiseman recounted, lethal injection (a name he said he created), had the following benefits in his mind: "No pain, no spasms, no smells or sounds – just sleep, then death."[96] Given Wiseman's complete lack of medical background,[97] such optimism is disturbing in light of the problems with injection that the Royal Commission earlier had detected and that recent litigation has revealed.

Completely independent of Wiseman's or Chapman's input or knowledge,[98] Dawson also sought the advice of Stanley Deutsch, M.D., who then was head of Oklahoma Medical School's Anesthesiology Department.[99] Deutsch and Dawson never met, but simply talked once on the phone when Dawson called to ask Deutsch to recommend a method for executing prisoners through the intravenous administration of drugs.[100] Deutsch responded with a two-page letter riddled with typos that recommended two types of drugs: "an ultra short acting barbiturate" (for example, sodium thiopental) in "combination" with a "nueormuscular [sic] blocking drug[]" (for example, pancuronium bromide) to create a "long duration of paralysis."[101] But Deutsch's February 28, 1977 correspondence probably was sent too late to contribute to the Senate's March

[89] *See* Moore, *supra* note 86, at 22. In 1982, Chapman left the position of Chief Medical Examiner to move to California and work in private practice as a forensic pathologist for Sonoma County. Telephone Interview with A. Jay Chapman, former Oklahoma Chief Medical Examiner (Mar. 2, 2007).
[90] E-mail from A. Jay Chapman, former Oklahoma Chief Medical Examiner, to Deborah W. Denno, Professor, Fordham Law School (Dec. 19, 2005) [hereinafter *Chapman E-mail*] (on file with author).
[91] *See* Wiseman, *supra* note 87, at 7.
[92] *Id.*
[93] *Id.*
[94] *See id.*; *see also* Telephone Interview with A. Jay Chapman, former Oklahoma Chief Medical Examiner (Mar. 2, 2007).
[95] *See* Wiseman, *supra* note 87, at 7; *see* Telephone Interview with A. Jay Chapman, former Oklahoma Chief Medical Examiner (Mar. 2, 2007).
[96] *See* Wiseman, *supra* note 87, at 7. In fact, however, the term "lethal injection" earlier was used by the Royal Commission in their report. Royal Commission Report, *supra* note 50, at 257.
[97] *See* Wiseman, *supra* note 87, at 7.
[98] Telephone Interview with William J. Wiseman, Jr., former Oklahoma State Representative (Oct. 13, 2005).
[99] *See* Denno, *Getting to Death*, *supra* note 14, at 374-75.
[100] Telephone Interview with Stanley Deutsch, former professor of anesthesiology, George Washington Medical School (April 21, 2006).
[101] *See* Letter from Stanley Deutsch, Ph.D., M.D., Professor of Anesthesiology, University of Oklahoma Health Sciences Center, to the Hon. Bill Dawson, Oklahoma state senator (Feb. 28, 1977) [hereinafter *Deutsch Letter*] (on file with author).

2, 1977 passage of the initial version of the statute, which contained language identical to the final statute.[102]

By all accounts, then, Chapman was the major, if not the primary, creator of lethal injection. Although Chapman played the crucial role in creating lethal injection, he remains shocked by reports that lethal injection generally is not performed by doctors but rather by individuals with little-to-no familiarity with the procedure.[103] In theory, lethal injection might have held much appeal. Yet the lawyers and doctors so fervently advocating its use had no concept of how the procedure would operate in reality. Two professions (law and medicine), blinded by resolve, plunged together into a dark legal and medical hole from which they have yet to emerge.

2. No Medical or Scientific Study

A detailed investigation of lethal injection's creation and history shows that at no point was the procedure medically or scientifically studied on human beings.[104] That the Oklahoma statute (and later, the more specifically designated protocol), did not have medical justification became clear during the legislative debate. At one point, the lethal injection bill stalled, in large part because of concern that lethal injection had not been tested sufficiently.[105] Indeed, William Hughes, M.D., chairman of the OMA's legislative committee, who might have offered an informed perspective, had not even read the bill before it was submitted to the legislature.[106] Nor did he want to.[107] Once again, the OMA turned its back on the lethal injection process.

Nevertheless, on March 2, 1977, the Senate voted 26-20 to change the state's execution method from electrocution to lethal injection.[108] This vote followed a two-hour debate that focused on a range of issues – deterrence (with some senators saying that the electric chair was the better deterrent to murder), humaneness (with some senators saying that lethal injection was more humane), and retribution (with some senators arguing that lethal injection was "an easy

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[102] *See id.* Deutsch's letter to Dawson so closely mirrored the final wording of Oklahoma's lethal injection statute that, in hindsight, it seemed that it had served as a basic blueprint. *See* Denno, *When Legislatures Delegate*, *supra* note 14, at 97. Deutsch consistently has been given credit for suggesting the original lethal injection chemicals, an account that he and others justifiably encouraged; yet, his true impact may have only confirmed what Chapman initially suggested. *See* Telephone Interview with Lawrence Egbert, M.D., M.P.H, President, Maryland chapter of Physicians for Social Responsibility (Jan. 24, 2007). Regardless, in context, both doctors' recommendations were misplaced. The author's interviews with Dr. Chapman and Dr. Deutsch indicate that the two doctors gave advice independently and that, contrary to earlier explanations and Dr. Deutsch's own personal beliefs, Dr. Deutsch had no actual input into the decision making because his letter was too late. Telephone Interview with A.J. Chapman, former Oklahoma Chief Medical Examiner (Mar. 2, 2007); Telephone Interview with William J. Wiseman, Jr., former Oklahoma State Representative (Oct. 13, 2005).

[103] *See* Human Rights Watch, So Long as They Die: Lethal Injections in the United States in the United States 33 (2006); Telephone Interview with A.J. Chapman, former Oklahoma Chief Medical Examiner (Mar. 2, 2007); Chapman E-mail, *supra* note 90.

[104] *See* Denno, *When Legislatures Delegate*, *supra* note 14, at 90-120.

[105] *See* Moore, *supra* note 86, at 22.

[106] *See id.*

[107] *See id.*; Jim Killackey & Ellen Knickmeyer, *Execution Called Uncivilized…But Inmate 'Simply Goes to Sleep,' Lethal Drug Proponent Say*, The Daily Oklahoman, July 14, 1987. These developments might have prompted Dawson to contact Deutsch to acquire further medical input.

[108] *See* S.B. 10, 36th Leg., 1st Sess. (Okla. 1977) (An Act Relating to Criminal Procedure; Amending 22 O.S. 1971, Section 1014; and Specifying the Manner of Inflicting Punishment of Death; and Making Provisions Separable).

way out").[109] One particularly critical point discussed served as an eerie harbinger of events to come – the problems that lethal injection could potentially cause.[110] Yet, this subject was narrow and limited. For example, one senator warned that some drug-using inmates might be less affected by the injection and survive, rendering the inmate a "vegetable to take care of."[111] Remarkably, however, such a comment laments the economic repercussions of the problem – the state's need to provide care for an inmate after a botched execution — not the Eighth Amendment issue of cruelty or the sheer inhumanity of causing such a horrifying and preventable mistake.

In fact, questions of cost caught the attention of legislators. Dawson had informed the Senate that, according to the Oklahoma Department of Corrections, $62,000 would be needed to renovate the electric chair because it had been damaged.[112] Building a gas chamber would require $250,000.[113] By contrast, "[w]hen he [Dawson] pointed out that the cost of execution by injection would be only about $10, the argument 'did seem to carry some weight' in the discussion."[114]

On April 20, 1977, the House finally passed the bill with a 74-18 vote.[115] Critically, however, that version of the bill dropped a key amendment "requiring the state to continue using the electric chair until death by drugs has been ruled legal by the U.S. Supreme Court."[116] The amendment's disappearance presents a disturbing irony: The method of execution that so dominates this country's death penalty system might never have been implemented in its state of origin without Supreme Court approval.

Immediately after the bill's passage Chapman expressed alarm about how lethal injection would be practiced.[117] His statements in the *Daily Oklahoman* foreshadowed the problems to come, problems that have remained unresolved for thirty years:

> Dr. A. Jay Chapman, state medical examiner, said [in May 1977] that if the death-dealing drug is not administered properly, the convict may not die and could be subjected to severe muscle pain. The major hazard of using lethal drugs in the execution of criminals is missing the vein in establishing an intravenous "pathway" for the drugs, he warned. Dr. Chapman, an early proponent of the execution method, said it is not necessary that a physician administer the drug, but it should be someone knowledgeable in drug injection. . . . In describing what he perceives as the ideal process for administering the drug, Dr. Chapman said a "drip" should be started intravenously in the prisoner's arm. Direct shots into the

[109] *See* John Greiner, *Drug Executions Win Senate Nod*, The Daily Oklahoman, Mar. 3, 1977, at 1; *see also supra* note 85.
[110] *See* Greiner, *supra* note 109.
[111] *Id.*
[112] *See* Moore, *supra* note 86, at 23.
[113] *See id.*
[114] *Id.*
[115] *See* S.B. 10, 36th Leg., 1st Sess. (Okla. 1977) (An Act Relating to Criminal Procedure; Amending 22 O.S. 1971, Section 1014; and Specifying the Manner of Inflicting Punishment of Death; and Making Provisions Separable).
[116] *See id.*; *see also* Mike Hammer, *Drug Death Bill Passes*, The Daily Oklahoman, April 21, 1977, at 65.
[117] *See* Jim Killackey, *Execution Drug Like Anesthesia*, The Daily Oklahoman, May 12, 1977, at 1.

> vein would not be used. When the intravenous pathway was secured, "one big push of drugs" would be made. Dr. Chapman said the drug injection could take only several seconds and would feel like the sudden "loss of consciousness" felt by surgery patients who have anesthesia induced. . . .
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> The barbiturate drug which could be used, Dr. Chapman said, is a hypnotic sedative named "thiopental." It simply would put the prisoner to sleep. The paralytic agent, which would cause respiratory muscles to cease functioning, may be a curare-type compound, he said.
>
> State Corrections Director Ned Benton said . . . his office will work throughout the summer with the medical examiner's office to find the best method of drug injection "which could be defended in court." Benton said it was his understanding that state laws do not restrict who gives shots.[118]

Chapman's initial concerns all have played out continuously in executions across the country for the last quarter century. For example, occurrences of "severe muscle pain" and "missing the vein," as well as fears that "the convict may not die,"[119] have been real and repeated problems. Likewise, the need to have available "someone knowledgeable in drug injection"[120] raises one of the most significant issues of all, as *Morales* and recent lethal injection litigation demonstrate. But such comments also prompt a key question: How could Chapman support a bill – indeed create a procedure – knowing all too well the dangerous pragmatic complications associated with it? While Chapman offered blunt statements in 2006 that he "never knew we would have complete idiots injecting these drugs . . . [w]hich we seem to have,"[121] from the beginning, he explicitly warned of that possibility.[122]

News articles from the late 1970s make clear the tentative status of Oklahoma's protocol. A 1979 *Daily Oklahoman* article, for example, emphasized that "[o]fficials with the State Department of Corrections say it may be years – if ever – before they are required to carry out mandates of the 1977 Legislature, which approved the drug injection law."[123] The article also noted that "[o]fficials feel that if and when they have to use the injection law, *new and better drugs may be available*."[124] Such statements suggest officials had limited confidence in the effectiveness of the chemicals that Chapman introduced, and even anticipated they might never be used. Likewise, while Oklahoma Department of Corrections officials adopted a protocol in

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[118] *Id.*
[119] *Id.*
[120] *Id.*
[121] Human Rights Watch, *supra* note 103, at 31.
[122] Of course, Chapman was not the only person contributing to the hazards of lethal injection. Former State Corrections Director Ned Benton, whom the *Daily Oklahoman* quoted, has now said, in hindsight, he was not aware of the details of Oklahoma's lethal injection protocol because he believed that an execution in Oklahoma would not immediately take place. *See* E-mail from Ned Benton, former Oklahoma Corrections Director, to Deborah W. Denno, Professor, Fordham Law School (July 18, 2005). Benton's explanation, however, would not be acceptable today. As the State Corrections Director, he was responsible for the contents of the protocol irrespective of when or even if it was ever going to be used. As current lethal injection litigation shows, this very kind of disengagement on the part of corrections personnel, particularly at Benton's senior level, has created a host of major difficulties in lethal injection executions. *See infra* Part IV.
[123] *See* Jim Killackey, *Officials Draw Grim Executions Lethal*, The Daily Oklahoman, Nov. 12, 1979, at 1.
[124] *Id.* (emphasis added).

1978 outlining how an injection would occur, the Department noted that the protocol might need "a few modifications or refinements."[125]

Chapman provided those modifications in 1981, as one of his last responsibilities as state medical examiner.[126] Perhaps Chapman's most crucial change was adding a third drug, potassium chloride, to the prior two-drug lethal injection mix.[127] In doing so, Chapman effectively set the final drug framework for all future lethal injection executions. It is now this peculiar combination of all three chemicals that makes lethal injection so controversial.[128]

Overall, lethal injection's history shows how the medically complex process became ensconced in both law and politics. This powerful dynamic surfaced in the *Daily Oklahoman*'s comment about viewing the injected inmate: "Officials do not plan to monitor the prisoner's life signs during the execution [in order to] avoid moral judgments about the procedure because of immense controversy over capital punishment."[129] That very issue remains a source of contention today. States, including California, have procedures in which an inmate's face and body cannot be fully seen during the lethal injection process.[130] From the start, then, the social and legislative push in favor of having a death penalty permeated the lethal injection procedure – a troubling mix that continues full throttle.

3. Human Execution and Animal Euthanasia

The drive for the return of capital punishment also lead other states to look at execution methods. Several states initially considered the use of lethal injection because of comparisons between human execution and animal euthanasia.[131] In 1973, then-Governor Ronald Reagan of California recommended lethal injection when he analogized it to putting injured horses to

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[125] *Id.*

[126] Telephone Interview with A.J. Chapman, former Oklahoma Chief Medical Examiner (Mar. 2, 2007). He left for a forensic pathologist position in California. *Id.*

[127] Letter from A. Jay, M.D., Office of the Chief Medical Examiner, State of Oklahoma, to Dr. Armond Start, Dep't of Corr., State of Oklahoma, June 24, 1981 (concerning the procedures for executions to be carried out at the state penitentiary). Those reports state that not only would Chapman be the designated person to devise the details of the implemented protocol, but also that the protocol could include potassium chloride. *See* Killackey, *supra* note 123. In 1978, the Department of Corrections protocol indicated the following drug combinations:

> By law, capital punishment in Oklahoma must be carried out by means of a "continuous, intravenous administration of a lethal quantity of sodium thiopental combined with either tubocurarine, succinylcholine chloride or potassium chloride, an ultrashort-acting barbiturate combination with a chemical paralytic agent."

Id.

In 1981, as predicted, the Oklahoma Department of Corrections made modifications to that protocol, all of which Jay Chapman contributed. In contrast to the language used in the 1978 protocol, the 1981 protocol detailed the following drug combinations and language that Chapman recommended:

> The execution shall be by means of a continuous, intravenous administration of a lethal quantity of sodium thiopental combined with either tubo-curarine or succinylcholine chloride and/or potassium chloride which is an ultrashort-acting barbiturate combination with a chemical paralytic agent. A designated employee of the Department will acquire a sufficient quantity of the previously named chemical agents and will maintain the security of these chemical agents until the time of execution.

Okla. Dep't of Corr., *Memorandum: Summary of Policy and Purpose* (July 10, 1981).

[128] *See infra* Part III.

[129] Killackey, *supra* note 123.

[130] *See* Morales v. Tilton, 465 F. Supp.2d 972, 979 (N.D. Cal. 2006).

[131] *See* Moore, *supra* note 86, at 23.

sleep.[132] Similarly, in 1977, Texas State Representative Ben Grant, who created the Texas lethal injection bill, stated that his experiences presiding over a hearing on the humane treatment of animals persuaded him of the method's benefits.[133]

At the same time, the absence of deliberation about the best way to lethally inject a human resulted in a shocking inconsistency: The methods for euthanizing animals require substantially more medical consultation and concern for humaneness than the techniques used to execute human beings.[134] According to the American Veterinary Medical Association (AVMA), it is not acceptable for veterinarians to administer potassium chloride – lethal injection's third drug – to an animal that is not anesthetized.[135] The AVMA manual for the euthanasia of animals also specifies the Association's rigorous training requirements,[136] which exhibit far more thought than the procedures set forth in most lethal injection protocols.[137] The contrasting procedures for humans and animals underscore the sheer disregard for injection's medical justification.

Not surprisingly, this issue has found its way into recent lethal injection litigation.[138] For example, the Ninth Circuit in 2005 considered it "somewhat significant that at least nineteen states have enacted laws that either mandate the exclusive use of a sedative or expressly prohibit the use of a neuromuscular blocking agent in the euthanasia of animals."[139] The question becomes, then, whether states will continue to hold the standard for executing human beings below that used by veterinarians. In this country, the euthanasia of animals is a highly regulated and evolving process, based on strict guidelines periodically revised and modernized by the AVMA.[140] Lethal injection's history shows that the method was never subjected to medical and scientific study, much less held to the standards for animal euthanasia.

II. WHAT DOES "PHYSICIAN PARTICIPATION" MEAN?

Given the lack of medical justification for lethal injection, a focus on physician participation in the method's implementation is critical. As *Morales* indicated, states increasingly have looked to physician involvement in lethal injections to prevent execution

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[132] *See* Henry Schwarzschild, *Homicide by Injection*, N.Y. Times, Dec. 23, 1982, at A15 (quoting Ronald Reagan).
[133] *See* Moore, *supra* note 86, at 23.
[134] *See id.*
[135] *See* American Veterinary Medical Association, *Report of the AVMA Panel on Euthanasia*, at 680 (2000).
[136] *See id.* at 673.
[137] *See infra* Part III.
[138] Ironically, because of expert testimony that the first drug in the lethal sequence would render the inmate unconscious, some courts have not addressed the substance of the animal euthanasia argument. *See, e.g.*, Hankins v. Quarterman, Slip Copy, 2007 WL 959040, at *20-21 (N.D. Tex. Mar. 30, 2007). The animal euthanasia issue may gain momentum as lethal injection litigation gains further steam. *See* Brown v. Beck, Slip Copy, 2006 WL 3914717, at *2 n.2 (E.D.N.C. April 7, 2006) ("Plaintiff notes that protocols utilizing such long-acting barbiturates have been adopted by the American Veterinary Medical Association and by physicians under Oregon's Death with Dignity Act."). On the whole, however, courts have yet to give substantial attention to arguments regarding animal euthanasia. *See, e.g.*, Walker v. Johnson, 448 F. Supp. 2d 719, 724 (E.D. Va. 2006) ("[A]ny discussion by Plaintiff about the standards of animal euthanasia has no bearing on death penalty matters and is rejected by the Court.").
[139] Beardslee v. Woodford, 395 F.3d 1061, 1072-73 (9th Cir. 2005); *see also id.* at 1073 n.10 (noting that "[t]he most common protocol for animal euthanasia is a single overdose of a barbiturate, usually sodium pentobarbital (which is a longer acting barbiturate than sodium pentothal)").
[140] *See generally*, American Veterinary Medical Association, *supra* note 135.

disasters – ranging from California's option of including anesthesiologists,[141] to Missouri's requirement of a physician's role,[142] to Georgia's recently enacted statute forbidding medical associations from reprimanding doctors who participate in executions.[143] Although some physicians have indicated a willingness to engage in executions,[144] medical associations generally have poured out in protest.[145]

Attempting to determine whether medical associations appropriately are shunning involvement is a daunting task. What moral measure should be used? What legal compass? On some level, the process can be compared to a Rorschach inkblot test, which psychologists use to assess individuals' perceptions of a scene. Observers' differing responses reflect their varying values, motivations, and past experiences. In this sense, medical associations will view the scene of a lethal injection far differently from a legislature pressing to perpetuate the death penalty. The legal system is concerned with retribution and deterrence; the medical system is centered on health and wellbeing.

This "inkblot" phenomenon caused some of the chaos of *Morales*. While anesthesiologists initially agreed to participate, they pulled out when faced with the Ninth Circuit's interpretation of their role; that role that reflected the court's concern for the constitutionality of the execution but conflicted with medical association guidelines on participation in executions.[146]

When the inkblot's pool of observers includes the whole of society – ranging from the public to the courts to the supervising wardens – the vast array of interpretations of the lethal injection scene becomes increasingly intricate. The Supreme Court – the ultimate arbiter of such conundrums – refuses to even take the inkblot test. And the result is legal disarray. The execution declines and moratoria prove it.[147]

A. No Medical Improvements

Concerns over the injections's lack of medical testing initially were considered so pronounced that Oklahoma's lethal injection bill stalled before the state Senate's approval of it.[148] Legislative developments indicate that lethal injection was not to be used so quickly and confidently, if ever at all. And the Oklahoma legislature at one point considered requiring that that injection could not supplant electrocution without "being ruled legal by the U.S. Supreme Court."[149]

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[141] *See* Morales v. Hickman, 415 F. Supp. 2d 1037, 1047 (N.D. Cal. 2006), *aff'd per curiam*, 438 F.3d 926 (9th Cir. 2006), *cert. denied*, 126 S. Ct. 1314 (2006).
[142] *See* Taylor v. Crawford, No. 05-4173-CV, 2006 WL 1779035, at *8 (W.D. Mo. June 26, 2006).
[143] *See* Ga. Code Ann. § 17-10-42.1 (2006). The statute reads: "Participation in any execution of any convicted person carried out under this article shall not be the subject of any licensure challenge, suspension, or revocation for any physician or medial professional license in the State of Georgia." *Id.*
[144] *See infra* Part II.C.
[145] *See infra* Part II.A & B.
[146] *See supra* notes 11-13 and accompanying text.
[147] *See supra* note 43.
[148] *See supra* note 105 and accompanying text.
[149] *See supra* note 116 and accompanying text.

Such uncertainty did not tarnish the method's appeal. After Oklahoma adopted lethal injection on May 11, 1977, Texas followed suit the next day and Idaho and New Mexico soon after.[150] From 1977 to 2002, thirty-seven states adhered to this adoption pattern, switching to lethal injection in a fast-moving cascade of multi-state clusters, indicating that shared forces and communications fueled legislative action.[151] Likewise, nearly a third (eleven) of the states changed to lethal injection in the eight-year stretch between 1994, when Virginia adopted the method, and 2002, when Alabama did.[152]

Currently, the protocols in all thirty-six states that use lethal injection are modeled after Oklahoma's original three-drug combination: (1) sodium thiopental, (2) pancuronium bromide,[153] and (3) potassium chloride.[154] Therefore, most states mirror the legal and scientific choices that Oklahoma officials made thirty years ago. Lethal injection was not actually used, however, until 1982, when Texas botched the execution of Charles Brooks, Jr.[155] Not even the substantial numbers of comparably botched executions that followed deterred states from switching to the method with relative confidence and speed.[156]

Despite the benefits of hindsight, states did not medically improve upon the method that consistently had resulted in documented debacles.[157] As a Kentucky court recently concluded, "there is scant evidence that ensuing States' adoption of lethal injection was supported by any additional medical or scientific studies . . . [rather,] the various States simply fell in line, relying solely on Oklahoma's protocol . . . ."[158] Further passage of time has made no difference. In 2006, for example, Ohio conducted the second-longest lethal injection on record – ninety minutes – while the longest execution (two hours) occurred in Texas in 1998.[159]

B. Medical Associations Respond

Recent litigation has revealed both new and long-standing positions of medical associations toward lethal injection. These associations stress the significance of the Hippocratic Oath[160] and ethical standards debunking medical participation in executions of all kinds.[161] They

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[150] *See* Denno, *When Legislatures Delegate*, *supra* note 14, at 92.
[151] *See id.* at 100-116.
[152] *See id.* at 131; Ala. Code §§ 15-18-82-82.1 (2007).
[153] *See supra* note 127 (noting the inclusion of tubo-curarine and succinylcholine chloride in Oklahoma's 1981 protocol, which are comparable to pancuronium bromide).
[154] *See supra* note 127 (referring to potassium chloride); *see also infra* Part III; s*ee e.g.*, Nicholas K. Geranios, *Lethal Injection State's New Killer*, Journal Star (Peoria, Ill.), May 11, 1987, at B8 ("'We based our [lethal injection] procedures on what they do in Oklahoma and Texas,' said Department of Corrections spokesman Nic Howell. 'It was obvious it worked and was something we could adapt for our work.'").
[155] *See* Steve Carrell, *Execution Controversy Faces Physician*, Am. Med. News, Jan. 21, 1983, at 24.
[156] *See generally* Denno, *When Legislatures Delegate*, *supra* note 14 (analyzing the disregard states had for botched executions in adopting lethal injection as an execution method).
[157] *See infra* Part III.
[158] *Baze v. Rees*, No. 04-CI-1094, at 2 (Franklin Cir. Ct., Ky. July 8, 2005); *see also Execution Controversy Faces Physician*, Am. Med. News, Jan. 21, 1983, at 25 (noting that all three drugs were available in the first lethal injection execution in this country).
[159] *See* Jim Provance & Christina Hall, *Clark Execution Raises Lethal-Injection Issues*, The (Toledo) Blade, May 4, 2006.
[160] *See* Louis Lasagna, The Hippocratic Oath-Modern Version (1964), *available at* http://www.pbs.org/wgbh/nova/doctors/oath_modern.html.

range from associations with a national base – the American Medical Association,[162] the American Society of Anesthesiologists,[163] the American Nurses' Association,[164] and the National Commission on Correctional Health Care[165] – to organizations representing the voices of particular states, such as the California Medical Association[166] and the North Carolina Medical Board.[167]

Some of these associations adopted a hands-off approach to lethal injection even prior to this country's first 1982 lethal injection execution. For this reason, a focus on these early positions provides perspective on states' confusion and ignorance surrounding lethal injection and why this situation has persisted for so long.

1. The American Medical Association

From the start, the American Medical Association (AMA) firmly abdicated any role in the lethal injection arena. In 1980, the AMA's Council on Ethical and Judicial Affairs released its first report opposing physician participation in executions, a stance the Council regularly has updated through 2000.[168] In the Council's view, "[a] physician, as a member of a profession dedicated to preserving life when there is hope of doing so, should not be a participant in a legally authorized execution."[169] Although the Council's position pertains to all methods of execution, it is particularly applicable to lethal injection because of the method's perceived affiliation with the medical profession.[170] The Council focused on a variety of potential aspects of a physician's contributions, as the following guidelines specify:

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[161] *See e.g.*, Council on Ethical and Judicial Affairs, Am. Med. Ass'n, Code of Medical Ethics: Current Opinions with Annotations, Op. 2.06 (2000) [hereinafter AMA Code].

[162] *See* Code of Ethics E-2.06 (Am. Med. Ass'n. 2000), available at http://www.amaassn.org/ ama/pub/category/8419.html ("A physician, as a member of a profession dedicated to preserving life when there is hope of doing so, should not be a participant in a legally authorized execution.").

[163] Message from Orin F. Guidry, President, Am. Soc'y of Anesthesiologists, Observations Regarding Lethal Injection (June 30, 2006), http://www.asahq.org/news/asanews063006.htm (stating that the American Society of Anesthesiologists had adopted the American Medical Association's (AMA's) code of ethics regarding capital punishment in 2001).

[164] Am. Nurses Association, Ethics and Human Rights Position Statements: Nurses' Participation in Capital Punishment, http://nursingworld.org/readroom/position/ethics/prtetcptl.htm (last visited Apr. 1, 2007) ("The American Nurses Association (ANA) is strongly opposed to nurse participation in capital punishment. Participation in executions is viewed as contrary to the fundamental goals and ethical traditions of the profession.").

[165] Standards for Health Services in Prisons P-I-08 (Nat'l Comm'n on Corr. Health Care 2003) (on file with author) ("The correctional health services staff do not participate in inmate executions.").

[166] *See supra* note 10.

[167] *See* North Carolina Medical Board Position Statement: Capital Punishment, http://www.ncmedboard.org/Clients/NCBOM/Public/PublicMedia/capitalpunishment.htm. The board adopted the AMA's position on capital punishment, noting, however, that "[t]he Board recognizes that N.C. Gen. Stat. § 15-190 requires the presence of 'the surgeon or physician of the penitentiary' during the execution of condemned inmates. Therefore, the Board will not discipline licensees for merely being 'present' during an execution in conformity with N.C. Gen. Stat. § 15-190. However, any physician who engages in any verbal or physical activity, beyond the requirements of N.C. Gen. Stat. § 15-190, that facilitates the execution may be subject to disciplinary action by this Board." *Id.*

[168] *See* AMA Code, *supra* note 161.

[169] *Id.*

[170] *See generally* David J. Rothman, *Physicians and the Death Penalty*, 4 J.L. & Pol'y 151 (1995) (discussing the historical role of physicians in executions).

> Physician participation in an execution includes, but is not limited to, the following actions: prescribing or administering tranquilizers and other psychotrophic agents and medications that are part of the execution procedure; monitoring vital signs on site or remotely (including monitoring electrocardiograms); attending or observing an execution as a physician; and rendering of technical advice regarding execution.
>
> In the case where the method of execution is lethal injection, the following actions by the physician would also constitute physician participation in execution: selecting medical sites; starting intravenous lines as a port for a lethal injection device; prescribing, preparing, administering, or supervising injection drugs or their doses or types; inspecting, testing or maintaining lethal injection devices; and consulting with or supervising lethal injection personnel.[171]

The Council's definition of "physician participation" encompasses everything from the most basic medically symbolic role of simply "attending or observing an execution as a physician," to the more involved tasks, such as "monitoring vital signs on site or remotely."[172] Such a broad brush stroke includes, of course, those intricate and medically complex facets of lethal injection that have created problems for individuals with far less medical training, for example, "selecting medical sites" or "prescribing, preparing, administering, or supervising lethal injection drugs."[173] The Council's guidelines even prohibit a physician from "consulting with . . . lethal injection personnel,"[174] an activity that could occur well before the execution, thereby precluding the need for the doctor's attendance. Presumably, then, when a Texas judge in 1997 asked a testifying expert anesthesiologist to inspect in open court the syringe-viability of an inmate's veins during this country's first evidentiary hearing on lethal injection,[175] that expert violated the Council's ethical guidelines by doing so. Such a violation would hold even though the anesthesiologist's sole purpose for testifying was to educate the court about the gross medical deficiencies underlying the state's lethal injection procedure.[176]

In essence, the AMA maintains that a physician's role in a lethal injection execution should be limited to the pronouncement of death,[177] a position consistent with a range of medical associations.[178] According to the AMA, then, many state statutes and lethal injection protocols are unethical.[179] But because the AMA Council's guidelines are simply ethical dictates and not legally enforceable, it is difficult to assess how much weight they carry. Most physicians in this country, including most anesthesiologists, are not even members of the AMA.[180] Likewise, it

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[171] AMA Code, *supra* note 161.
[172] *Id.*
[173] *Id.*
[174] *Id.*
[175] *See* Exhibit of Application for Post-Conviction Writ of Habeas Corpus, *ex parte* Miguel A. Richardson, No. 81-CR-1548 (Tex. Crim. App. Dec. 16, 1996).
[176] *See supra* note 171 and accompanying text (interpreting the AMA Council's guidelines).
[177] *See* AMA Code, *supra* note 161.
[178] *See supra* notes 163-67.
[179] *See* Denno, *When Legislatures Delegate*, *supra* note 14, at 166-69.
[180] *See* Yuji Noto, *American Medical Association (AMA) and its Membership Strategy and possible Applications for the Japan Medical Association (JMA)* (June 1999); *see also* Am. Med. Ass'n Physician Masterfile, Dec. 2000, *http://www.ama-assn.org/ama1/pub/upload/images/373/internettable.gif*.

does not appear that any medical association, including the AMA, has disciplined a physician for participating in a lethal injection execution,[181] although this possibility now is being raised in North Carolina.[182] In light of this backdrop, medical associations may have difficulty convincing states to take seriously their perception of lethal injection.

The AMA's stance also might not be particularly realistic. Recent revelations show that the extent of physician participation in executions has been substantially underestimated.[183] Likewise, this author's surveys of lethal injection statutes and protocols indicate that a number of states conceded a certain level of physician participation.[184] Potentially, then, the AMA's position reflects the ideology of a bygone era that preceded discovery of the wide-ranging hazards of lethal injection executions.[185] But, as the following discussion suggests, medical associations willingly turned a blind eye to warnings both about lethal injection's problems and the physicians who were involved with them, with very few exceptions.

2. A Breach of Trust

In 1994, physician and human rights organizations released *Breach of Trust*, a startling report detailing the extent of physician participation in executions in the United States and the ethical questions it invoked.[186] The discovery after the 1990 Illinois lethal injection of Charles Walker that three physicians supervised the creation of Walker's intravenous line, as well as his entire execution, prompted the *Breach* report.[187] Thereafter, medical organizations made fervent efforts to prevent further physician involvement in Illinois executions, but failed.[188] The Illinois legislature quickly passed a bill providing that all individuals participating in Illinois executions would be anonymous.[189] Subsequent protests from Illinois physician groups went unheeded, bringing "into sharp focus the discrepancy between medical ethics and state laws on this subject."[190]

The *Breach* report's perspective on the law-medicine conflict was just the beginning of a string of stunning revelations. Page after page would document that "physicians continue to be involved in executions, in violation of ethical and professional codes of conduct," that state law frequently mandated the involvement, and that "[e]ven when state laws are vague about requiring physician participation . . . in practice, physicians are often directly involved in the execution process."[191] The report's criticisms were unrelenting, and justified: "[E]xecution is not a

[181] *See* Zitrin v. Ga. Composite State Board of Medical Examiners, et. al. No. S07A0318 (Ga. 2007)
[182] Complaint, N.C. Dep't of Corr. v. N.C. Med. Board (alleging that executions are not medical procedures regardless of participation by physicians or EMTs and, therefore, requesting a preliminary injunction preventing the N.C. Medical Board from taking action against doctors who participate and requesting the court declare that executions are not medical procedures).
[183] *See infra* Part II.C.
[184] *See infra* Part II.D.
[185] Kenneth Baum, *"To Comfort Always": Physician Participation in Executions*, 5 NYU J. Legis. & Pub. Pol'y 47, 58-67 (2001) (detailing the reasons why arguments against physician participation in executions are outdated).
[186] The Am. Coll. of Physicians Et Al., Breach of Trust: Physician Participation in Executions in the United State (1994) [hereinafter *Breach of Trust*].
[187] *See id.* at 1.
[188] *See id.*
[189] *See id.*
[190] *Id.*
[191] *Id.* at 3.

medical procedure, and is not within the scope of medical practice."[192] While states promoted "the appearance of humane, sterile or painless executions," the *Breach* report was alarmed that physicians increasingly would be lured into the process, thereby compromising their medical commitments to heal.[193] While physicians "are entrusted by society to work for the benefit of their patients and the public . . . [t]his trust is shattered when medical skills are used to facilitate state executions."[194] Likewise, offering the execution process a substantial degree of "medical legitimacy,"[195] raised deeper concerns about the "larger picture," specifically, the doctor's role in promoting state-sanctioned executions: "[T]he physician is taking over some of the responsibility for carrying out the punishment and in this context, becomes the handmaiden of the state as executioner."[196] While physicians might help decrease the pain of executions, they also perform "under the control of the state, doing harm."[197]

As *Breach of Trust* indicated, physicians contribute far more to lethal injection than any other execution method.[198] An examination of physician participation today suggests that the involvement is more extensive than even the *Breach* report could have been predicted.

C. Physicians Still Participate

Physicians have a long-standing relationship with lethal injection. For example, Jay Chapman, M.D., basically originated the procedure.[199] In turn, Ralph Gray, M.D., the medical chair of the Texas prison system, was present at the first lethal injection execution, that of Charles Brooks, Jr.[200] That procedure, which Gray considered highly problematic,[201] typified the quandary medical professionals continue to face. Gray had checked the veins in Brooks' arms and predicted difficulties because of Brooks' heavy drug use.[202] Yet, Gray would not assist directly in the execution even though "tempted" when the non-physician employees "repeatedly missed" Brooks' veins and Brooks started bleeding.[203] Gray's response to colleagues criticizing his decision to check Brooks' arms is understandable: "'I really don't see what I did wrong. I wanted things to go properly.'"[204]

Other physicians also voiced concern about lethal injection soon after its first use. Jack Kevorkian, M.D., for example, was a strong initial proponent of lethal injection because the method enabled inmates to donate their organs if they desired.[205] At the same time, Kevorkian

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[192] *Id.*
[193] *Id.*
[194] *Id.*.
[195] *Id.* at 38.
[196] *Id.*
[197] *Id.*
[198] *Id.*
[199] *See generally id.*(conducting a nationwide survey of physician participation in lethal injection executions).
[200] *See* Carrell, *supra* note 155, at 24.
[201] *See id.* at 24-26.
[202] *See id.* at 24.
[203] *Id.* at 25.
[204] *Id.*, at 24.
[205] *See* Jack Kevorkian, Prescription: Medicine, the Goodness of Planned Death 17-99 (1991) [hereinafter *Prescription*] (emphasizing that the great majority of death row inmates want to donate their organs in order to "repay a social debt" despite anti-donation arguments by the medical profession); Jack Kevorkian, *Opinions on Capital Punishment, Executions and Medical*

cautioned early on that "only the highest degree of technical competence should be relied upon to insure trouble-free lethal injection, to avert unnecessary suffering, and, even more important, to minimize the potential danger of inadvertent suffocation of the condemned."[206] Likewise, in a small unscientific survey Kevorkian conducted for a medical journal article, he found that medical personnel would choose, if considering competency only, a doctor to administer their own lethal injection if they were to be executed.[207]

Kevorkian's heed about lethal injection's hazards might not have garnered serious attention because of his other controversial stances.[208] At the same time, additional physicians have been similarly dismissed. In 1990, for example, Lawrence Egbert, M.D., then a Professor of Anesthesiology at the University of Texas Southwestern Medical School,[209] moved to vote against the use of lethal injections in executions during the annual meeting of the prestigious Association of University Anesthesiologists.[210] Egbert long had criticized the administration of lethal injections and the particular drugs that injection used.[211] Yet, the matter was tabled, and never addressed again[212] until the ASA's president raised it in 2006[213] in response to the swirl of media attention and caselaw.

Nonetheless, Egbert's arguments impressed another member at the same meeting, Edward A. Brunner, M.D., Ph.D., then Chair of the Department of Anesthesia at Northwestern University Medical School.[214] Both Brunner and Egbert eventually became the first two physicians to testify as experts in some of the earlier evidentiary hearings on the constitutionality of lethal injection.[215] Because so little was known about lethal injection executions at the time, Brunner and Egbert focused on the problematic application of injection's three chemicals.[216]

Not until the start of the twenty-first century would attorneys gather more details about the dearth of executioner training and the conditions of lethal injection executions.[217] This added information has opened another chapter of testifying medical experts in lawsuits challenging lethal injection executions. The two primary expert-M.D.'s are Mark Dershwitz, a professor at

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Science, 4 Med. & L. 515, 515-33 (1985) [hereinafter *Opinions on Capital Punishment*] (contending that lethal injection is the preferred execution method and that inmates should be allowed to donate their organs).

[206] Kevorkian, *Prescription*, *supra* note 205, at 63.

[207] Kevorkian, *Opinions on Capital Punishment*, *supra* note 205, at 522.

[208] *See generally* Neal Nicol, Harry Wylie, & Jack Kevorkian, Between Dying and Dead: Dr. Jack Kevorkian's Life and the Battle to Legalize Euthanasia (2007) (discussing Kevorkian's life and career and all of its controversies).

[209] Telephone Interview with Lawrence Egbert, M.D., M.P.H, President, Maryland chapter of Physicians for Social Responsibility (Jan. 24, 2007).

[210] *Id.*

[211] *See* Lawrence D. Egbert, *Physicians and the Death Penalty*, America, Mar. 17, 1998, at 16.

[212] *See* Telephone Interview with Lawrence Egbert, M.D., M.P.H, President, Maryland chapter of Physicians for Social Responsibility (Jan. 24, 2007).

[213] *See* Orin F. Guidry, Am. Soc'y of Anesthesiologists, *Message from the President: Observations Regarding Lethal Injection*, June 20, 2006, http://www.asahq.org/news/asanews063006.htm (last visited Mar. 9, 2007).

[214] Telephone Interview with Edward A. Brunner, M.D., Ph.D., Retired Chair, Dep't of Anesthesiology, Northwestern Univ. Med. School (March 19, 2007).

[215] *See* Denno, *Getting to Death*, *supra* note 14, at 373-87 (discussing the early lethal injection litigation and Brunner's and Egbert's contributions).

[216] *See id.*

[217] See infra Parts III & IV.

the University of Massachusetts Medical School,[218] and Mark Heath, a professor at Columbia Presbyterian Medical Center.[219] While the two often disagree, the contributions of both – most particularly Heath – are transforming the lethal injection landscape.

New evidence in 2006 and the start of 2007 again reveals a surprising degree of physician participation in lethal injection executions that even the *Breach of Trust* report never would have anticipated. Such involvement ranged from the disturbing revelations of Missouri's "Dr. Doe," who began performing lethal injections in the mid-1990s,[220] to the acknowledgement of Carlo Musso, M.D., a Georgia physician, that he has maintained a three-year presence in that state's injection executions.[221] Most recently, in March 2007, Obi Umesi, a North Carolina M.D., admitted that he had attended at least two of the state's latest executions but, for ethical reasons, failed to monitor the inmate's consciousness in both, contrary to a federal judge's expectations.[222] Not to be discounted are the handful of anonymous physicians and a nurse who were interviewed as part of a Harvard Medical School professor's 2006 article about "why physicians participate in executions."[223]

The compelling stories of these medical professionals highlight the "inkblot" nature of how some physicians view the lethal injection scene. According to one anonymous doctor, Dr. C, for example, the state, of which he was a citizen, needed his services to perform executions humanely: "[J]urors . . . have made a decision. And if I live in that state and that's the law, then I would see it as being an obligation to be available." [224] Like those medical care personnel who responded to Kevorkian's survey,[225] Dr. C could empathize with a desire for condemned individuals to have the most competent lethal injection possible.[226] Dr. Musso, the only physician in the 2006 article who revealed his name, echoed the perspective that doctors were not deciding who gets the death penalty. "This is an end-of-life issue, just as with any other terminal disease. It just happens that it involves a legal process instead of a medical process."[227] In turn, all the article's interviewed professionals could agree with Dr. B: "If the doctors and nurses are removed, I don't think [lethal injections] could be competently or predictably done."[228]

Of course, these positions conflict with the AMA's stance on the matter: "While physician participation may potentially add some degree of humaneness to the execution of an individual, it does not outweigh the greater harm of causing death to the individual."[229] The

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[218] *See* Mark Dershwtiz – BMP Faculty – UMass Medical School, http://www.umassmed.edu/bmp/faculty/dershwitz.cfm.
[219] *See* Columbia University Medical Center Faculty Profiles, http://ww.cumc.columbia.edu/research/Faculty_Profiles/profiles/body.html.
[220] *See* Roko, *supra* note 28, at 2791-92.
[221] *See* Gawande, *supra* note 7, at 1228.
[222] *See* Andrea Weigl, *Did Doctor Stand Idle or Monitor Executions?*, News & Observer (Raleigh, North Carolina), March 29, 2007, at A1.
[223] *See generally* Gawande, *supra* note 7, at 1223-38.
[224] *Id.*at 1226.
[225] *See supra* note 207 and accompanying text.
[226] *See* Gawande, *supra* note 7, at 1226.
[227] *Id.* at 1228.
[228] *Id.* at 1226.
[229] AMA Code, *supra* note 161.

ASA president's views were even stronger, stressing that the medical profession has no obligation to rescue either American society or the legal system.[230]

D. Physician Participation in Context

The *Breach* report's nationwide statutory analysis never has been updated, even though it is cited frequently. This section provides such an update, with a brief 2007 overview of modern statutes' current designation of physician participation, or a lack thereof. And the results, once again, are striking. Consistent with the *Breach* report's assessment, all but nine of the thirty-seven lethal injection states mention some kind of medical or physician involvement.[231] At the same time, these statutes vary tremendously from state to state, suggesting that views on physician involvement are mired in value-laden interpretations of the lethal injection scene.

While the statutes differ substantially in their wording, eleven states mention the presence of a physician at a lethal injection execution.[232] Ten states have statutory language stating that a physician pronounces or certifies death.[233] Nine states provide that lethal injections do not constitute the practice of medicine.[234] And in three states, the involvement of physicians is optional.[235] In Illinois, the statute makes it explicit that medical personnel are not allowed to participate in executions.[236] New Jersey's statute has a similar provision, but does allow a physician to sedate an inmate and to be present at an execution.[237]

In the majority of states, the existence of statutory language concerning medical personnel indicates that medical association guidelines and the *Breach* report have had minimal impact. In general, states – either ignorant of or with disregard for ethical guidelines – include

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[230] *See* Guidry, *supra* note 34.

[231] Those eight states are Arkansas, Connecticut, Kansas, Maryland, Missouri, Nevada, Pennsylvania, Tennessee, and Utah. For state statutes on physician participation, see Ala. Code §§ 15-18-82.1 (2007); Ariz. Rev. Stat. Ann. § 13-704 (2006); Cal. Penal Code §§ 3604, 3605 (West 2007); Colo. Rev. Stat. Ann. §§ 18-1.3-1204, 18-1.3-1206 (West 2006); Del. Code Ann. tit. 11 § 4209 (2007); West's F.S.A. § 922.105 (West 2007); Ga. Code Ann., §§ 17-10-38, 17-10-41 (2006); Idaho Code § 19-2716 (2006); 725 Ill. Comp. Stat. Ann. 5/119-5 (West 2006); Ind. Code Ann. § 35-38-6-6 (West 2006); Ky. Rev. Stat. Ann. §§ 431.220-250 (West 2006); La. Rev. Stat. Ann. §§ 15:569-570 (2006); Miss. Code Ann. §§ 99-19-51, 99-19-55 (2006); Mont. Code Ann. § 46-19-103 (2005); N.H. Rev. Stat. §§ 630:5-6 (2006); N.J. Stat. Ann. §§ 2C:49-2, 2C:49-3, 2C:49-8, 2C:49-7 (West 2007); N.M. Stat. § 31-14-15 (2006); N.C. Gen. Stat. Ann. § 15-192 (West 2006); Ohio Rev. Code Ann. § 2949.25 (West 2007); Okl. Stat. Ann. tit. 22, §§ 1014, 1015 (West 2006); Or. Rev. Stat. §§ 137.473, 137.476 (2005); S.C. Code Ann. § 24-3-560 (2006); S.D. Cod. Laws § 23A-27A-32 (2006); Tex. Code Crim. Proc. Ann. art. § 43.20 (Vernon 2006); Va. Code Ann. § 53.1-234 (West 2006); Wash. Rev. Code Ann. § 10.95.180 (West 2007); Wyo. Stat. Ann. § 7-13-904 (2006).

[232] Those states are Colorado, Indiana, Kentucky, Louisiana, Mississippi, New Jersey, New Mexico, Ohio, Oklahoma, Texas, and Virginia.

[233] Those states are Colorado, Idaho, Kentucky, Mississippi, North Carolina, Oklahoma, South Carolina, South Dakota, Washington, and Wyoming.

[234] Those states are Alabama, Delaware, Florida, Georgia, New Hampshire, New Jersey, Oregon, and South Dakota.

[235] Those states are Montana ("the person administering the injection need not be a physician, registered nurse, or licensed practical nurse licensed or registered under the laws of this or any other state"), New Hampshire (same), and South Dakota (same). *See* Mont. Code Ann. § 46-19-103 (2005), N.H. Rev. Stat. §§ 630:5-6 (2006), S.D. Cod. Laws § 23A-27A-32 (2006).

[236] The statute reads in relevant part: "The Department of Corrections shall not request, require, or allow a health care practitioner licensed in Illinois, including but not limited to physicians and nurses, regardless of employment, to participate in an execution." 725 Ill. Comp. Stat. Ann. 5/119-5 (West 2006).

[237] *See* N.J. Stat. Ann. § 2C:49-3 (West 2007). "The commissioner shall designate persons who are qualified to administer injections and who are familiar with medical procedures, other than physicians, as execution technicians to assist in the carrying out of executions, but the procedures and equipment utilized in imposing the lethal substances shall be designed to ensure that the identity of the person actually inflicting the lethal substance is unknown even to the person himself." *Id.*

physicians in their lethal injection statutes. Illinois' statute demonstrates the potential way legislatures can compose language to comport with such guidelines. But, for now, Illinois is the exception.

Indeed, three states have statutory provisions that fly in the face of the medical ethical guidelines. These states ban disciplinary action, such as license suspension or revocation, against doctors who participate in executions.[238] One more state, North Carolina, is considering a similar statutory provision.[239] This increasingly bitter battle between law and medicine now has hit the courts, with medical boards facing lawsuits in both Georgia and North Carolina.[240]

In light of the extent of physician involvement, the current controversy swirling lethal injection could be a form of déjà vu. While *Breach* was published a dozen years before the recent revelations indicating the difficulties surrounding lethal injections,[241] it just as well could have been written this year. Yet, the litigation of today is not merely recycling an old dilemma. Even more is at stake now in terms of the physician's role.

First and foremost, the recommendations that *Breach* proposed never have been followed. Just the opposite has occurred. According to *Breach*, "[t]he law and regulations of all death penalty states should incorporate AMA guidelines on physician participation," particularly, "laws mandating physician presence and pronouncement of death should be changed to specifically exclude physician participation."[242] Likewise, "[l]aws should not be enacted that facilitate violations of medical ethical standards (such as anonymity clauses) [because] [t]he medical profession cannot regulate and police itself properly if laws protect violators from scrutiny and review."[243] Yet, as this Part shows, many lethal injection statutes have embraced the physician role or become vaguer about it,[244] perhaps confirming the *Breach* report's own conclusion that, the vaguer the statute, the more likely the physician participation.[245]

While the *Breach* report's impact appears negligible,[246] the questions the report raises have become only more integral. Since 1994, for example, an additional third of the death penalty states have adopted injection; with rare exception, any other execution method is a relic.[247] As such, further revelations about injection indicate a far more complicated and troublesome process than any legislature, court, or physician's group possibly could have realized.[248] According to the AMA Council, for example, medically trained, non-physicians

[238] Those states are Arizona, Georgia, and Oregon.
[239] *See* H.B. 442, Gen Assem., 2007 Sess. (N.C.).
[240] *See* Complaint, N.C. Dep't of Corr. v. N.C. Med. Board, 07-CV-003574 (Sup. Ct. Wake Co. Mar. 6, 2007); Complaint, Zitrin, et al., v. Ga. Composite Board of Med. State Examiners, 1-2005-CV-103905 (Sup. Ct. Fulton Co., July 2005).
[241] *See infra* Part IV.
[242] Breach of Trust, *supra* note 185, at 45.
[243] *Id.* at 45-46.
[244] *See infra* Part IV.
[245] *See supra* note 191 and accompanying text.
[246] *See generally* Breach of Trust, *supra* note 185. One explanation may be that the report was speaking for a minority of the medical profession, especially since two of the report's four authors are generic anti-death penalty groups; other national-based organizations, such as the AMA or the ASA, were not even mentioned. *See id.* at ix.
[247] *See supra* note 40.
[248] *See infra* Parts III, IV.

could perform the technical aspects of executions – thereby ensuring humanity to the procedure (albeit relatively less of it) without physician involvement.[249] Yet, the Council's conclusions were made in 1993.[250] The presumption of many states that non-physician personnel can serve as apt substitutes for physicians has proven inaccurate time and time again.[251]

In *Morales*, Judge Fogel agreed that "[b]ecause an execution is not a medical procedure, and its purpose is not to keep the inmate alive . . . the Constitution does not necessarily require the attendance and participation of a medical professional."[252] Judge Fogel also recognized, however, that such participation could increase the odds of a humane procedure, a conclusion that strikes at the core of the controversy: "[T]he need for a person with medical training would appear to be inversely related to the reliability and transparency of the means for ensuring that the inmate is properly anesthetized . . . ."[253] After all, Eighth Amendment doctrine centers on risk – the risk of "unnecessary and wanton infliction of pain"[254] – not foolproof perfection. While even the participation of medical personnel does not guarantee a humane execution,[255] the greater the availability of medical expertise, the more likely the procedure will be humane and meet constitutional commands.[256]

III. THE IMPORTANCE OF PROTOCOL

In lethal injection litigation, protocols take center stage. Courts have not defined the meaning of "protocol," but rather use the term broadly. In *Morales*, for example, California's protocol was multifaceted; the parties discussed not only whether physicians should participate in executions, but also which drugs and doses should be used as well as under what kinds of circumstances.[257]

A pivotal debate in *Morales*, one with constitutional implications, focused on the interpretation of a key, five-word, phrase: "five grams of sodium thiopental."[258] Why was this measurement so important and what did it mean? According to the state's anesthesiologist expert, the phrase signified that an execution under California's protocol would be unquestionably humane.[259] Such a large amount of this barbiturate quickly would render unconscious even the most drug-resistant inmate, irrespective of any effect the other two drugs would have.[260] The plaintiff's expert agreed in theory.[261] Yet, that expert emphasized that the

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[249] *See* Council on Ethical and Judicial Affairs, Am. Med. Ass'n, *Council Report: Physician Participation in Capital* Punishment, 270 JAMA 365, 366 (1993) ("Even when the method of execution is lethal injection, the specific procedures can be performed by nonphysicians with no more pain or discomfort for the prisoner.").
[250] *See id.*
[251] *See* Denno, *When Legislatures Delegate*, *supra* note 14, at 90-128, app. 1, tbl. 17.
[252] Morales v. Tilton, 465 F. Supp. 972, 983 (N.D. Calif. 2006).
[253] *Id.*
[254] Farmer v. Brennan, 511 U.S. 825, 842 (1994). For an extensive analysis of Eighth Amendment standards in the context of execution methods, see generally, Denno, *When Legislatures Delegate*, *supra* note 14, and Denno, *Getting to Death*, *supra* note 14.
[255] *See* Taylor v. Crawford, No. 05-4173-CV, 2006 WL 1779035, at *6 (W.D. Mo. June 26, 2006).
[256] *See Morales*, 465 F. Supp. at 983.
[257] *See generally id.*
[258] *Id.* at 983.
[259] *See Morales*, 415 F. Supp. at 1043-44.
[260] *See id.*

practice of California's lethal injection procedure would heighten the risk that the inmate never would receive all five grams.[262] Therefore, the execution would be inhumane, due to problematic injections, leaks, or mistakes.[263] As one California executioner explained during testimony in *Morales*, "sh-t does happen" when executions are conducted, no matter what the protocol says in writing.[264]

In 2001, this author conducted a nationwide study ("Study 1") of the lethal injection protocols for all thirty-six states that used the method.[265] The study focused on a number of key criteria common to many protocols, including the types and amounts of chemicals that are injected; the selection, training, and qualifications of the lethal injection team; and the involvement of medical personnel. One of the study's most problematic findings, however, was that the criteria set out in many of the protocols were far too vague to allow adequate assessment. When the protocols did offer details, such as the amount and type of chemicals that executioners inject, they often revealed striking errors and a shocking level of ignorance about the procedure.[266] The study concluded that such inaccurate or missing information heightened the likelihood that a lethal injection would be botched and suggested that some states were not capable of executing an inmate constitutionally.[267]

Four years later, this author conducted a second nationwide survey ("Study 2") to determine if states had changed their protocols during the years in which lethal injection litigation gained traction.[268] The results of this study, published here for the first time, focus on the protocols as they existed in 2005. This second survey provides a snapshot of lethal injection protocols at a key point in time – at the cusp of the increased scrutiny of protocols, but untainted by the onslaught of lethal injection challenges starting in 2006.

Lethal injections are far more complicated than the image of an inmate simply falling asleep might suggest. No "national consensus" exists on the specifics of how to kill someone, only on the general method of execution. [269] Likewise, with the exception of Judge Fogel and a few other engaged courts,[270] the entities most responsible for implementing the state's death sentence never want to be associated with the details of it – not the legislatures, not the courts, and, most certainly, not the Supreme Court. Primarily, the matter is left in the hands of department of corrections personnel, who have little-to-no expertise, and depend on unreliable advice about how lethal injections should be conducted.[271] Yet, every element of a protocol

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[261] *See id.* at 1044.
[262] *See id.*
[263] *See id.*
[264] *See* Morales v. Tilton, 465 F. Supp. 972, 979 (N.D. Cal. 2006).
[265] *See generally* Denno, *When Legislatures Delegate*, *supra* note 14.
[266] *See id.* at 90-128.
[267] *See id.* at 128.
[268] *See infra* Part IV.
[269] For a discussion of the meaning of "consensus," see Atkins v. Virginia, 536 U.S. 304, 316, 316 n.21 (2002), considering legislation prohibiting the practice, decreasing enforcement of legislation that permits practice, and the opinions of professional organizations and society as a whole in determining whether a practice is "unusual" because a national consensus has developed against it.
[270] *See infra* Part IV.
[271] *See, e.g.*, Morales v. Tilton, 465 F. Supp. 972, 979 (N.D. Cal. 2006).

could affect whether an execution involves the risk of "unnecessary and wanton infliction of pain."[272]

In essence, the technical terms of lethal injection protocols implicate Eighth Amendment standards when implemented. In light of the significance of this information, however, states have scrambled in wildly different directions because they do not know which direction is right. Nor do they attempt to find out. Some states have changed their statutes to accommodate the terms of the protocol. Other states have modified their protocols to fortify the state's use of lethal injection against constitutional attack. And yet another group of states has done nothing, leaving their statutes and protocols the same – inaction that does not indicate constitutional viability, but rather stubborn adherence to the status quo.

A. Lethal Injection Statutes

By 2001, all death penalty states in this country had switched to lethal injection, either entirely or as an option, with two exceptions.[273] In 2002, Alabama changed from an electrocution-only execution state to a state that that allows inmates to choose between electrocution and lethal injection.[274] Nebraska still applies just electrocution.[275]

Only recently, however, has any state substantially changed the language of its lethal injection statute. In the early part of 2007 the powerful effects of snowballing litigation resulted in such statutory changes in two states – South Dakota[276] and Wyoming.[277] Both states enacted legislative changes to correspond more closely to the actual injection procedure. While both states started with identical statutes, they went in opposite directions. Neither state's revision is quite explicable or adequate. Wyoming's statute became more specific – naming the three lethal injection chemicals to conform to the state's protocol.[278] In contrast, South Dakota's statute

[272] *See* Gregg v. Georgia, 428 U.S. 153, 173 (1976); Louisiana *ex rel.* Francis v. Resweber, 329 U.S. 459, 463 (1947) (plurality opinion).
[273] *See supra* note 39-41.
[274] *See* Ala. Code § 15-18-82.1 (2006). Therefore, Alabama is in this author's 2005 study although it was not in the 2001 study. While the 2005 study adds Alabama, New York is not included in this study. The state, which rendered its death penalty unconstitutional in 2004 (see *People v. Lavelle*, 817 N.E.2d 341, 367 (N.Y. 2004)), is not in the 2005 study although it was in the 2001 study.
[275] *See supra* note 41.
[276] S.D. Cod. Laws § 23A-27A-32 (2006). The South Dakota governor stayed the execution of a condemned inmate on the day of the execution after attorneys for the inmate pointed out a discrepancy between the state's lethal injection statute and the information a spokesman for the Department of Corrections had provided for the survey of lethal injection protocols published in this author's 2002 article in the Ohio State Law Journal. *See* Nestor Ramos & Dan Haugen, *Law Flawed, Death Denied: Hours Before Execution A Reprieve*, Argus (S.D.) Leader, Aug. 30, 2006. South Dakota's statute mentioned the use of only two drugs, but the spokesman had stated that the protocol required three drugs. *Compare* S.D. Codified Laws § 23A-27A-32 (2006) *with* Denno, *When Legislatures Delegate*, *supra* note 14, at 251.
[277] Wyo. Stat. Ann. § 7-13-904 (2006).
[278] Wyoming's statute became more specific, naming three chemicals to conform with the state's protocol. *See id.* Like many states (including Oklahoma), Wyoming's original lethal injection statute referred only to two chemicals – "an ultra-short acting barbiturate in combination with a chemical paralytic agent." *Id.* Yet, the state's protocol specified three chemicals, including potassium chloride. *See* Denno, *When Legislatures Delegate*, *supra* note 14 at 260. The 2007 legislative change thereby added the phrase, ". . . and potassium chloride or other equally effective substances sufficient to cause death . . ." Wyo. Stat. Ann. § 7-13-904 (2006).

became more general – simply referring to "the intravenous injection of a substance or substances in lethal quantity."[279]

The comparison between Wyoming and South Dakota demonstrates the inconsistent reactions of states to the threat of lethal injection botches. Wyoming's statute provides more information, giving more guidance to corrections personnel and decreasing the power delegated to them by specifying the kinds of chemicals to be used. Therefore, the legislature controls more of the decision making. In contrast, the South Dakota legislature delegates nearly all power, giving the warden considerable control

Both types of changes are problematic. At the height of lethal injection litigation, the Wyoming legislature adopted a three-drug regimen that has been questioned for years and is, in California, currently unconstitutional.[280] South Dakota's approach also is troublesome, combining the over-delegation of authority with gaps in information – the same combination that has created so many of the difficulties with lethal injection. Instead of attempting to rectify the conflict, South Dakota retreated into greater secrecy, illustrating the common tendency for states to withhold when constitutional challenges appear threatening.

B. The Public Availability of Protocols

Since Study 1, states have withdrawn even more information from public scrutiny. In Study 2, states provided as little information about their protocols as possible, an indication of the validity of the *Morales* court's concern about "transparency."[281] States never have been forthcoming about how they perform lethal injections; remarkably, however, they now reveal less than ever before. States likely withhold crucial details because, almost invariably, the more data states reveal about their lethal injection procedures, the more those states demonstrate their ignorance and incompetence. The result is a perpetual effort by states to maintain secrecy about all aspects of the execution.[282]

For example, Study 2 showed that only six of the thirty-six states provided complete public protocols, offering basic information about how they conducted their lethal injections. On its own, this finding was dramatic. In comparison to Study 1, this finding is extraordinary. The number of states with complete public protocols fell to less than one-third of the 2001 numbers – from nineteen states in 2001 to six states in 2005.[283] Despite the increasing recognition of the

[279] South Dakota, which had the identical two-chemical wording in its statute as Wyoming ("an ultra-short acting barbiturate in combination with a chemical paralytic agent"), made its statutory information more vague: "The punishment of death shall be inflicted by the intravenous injection of a substance or substances in lethal quantity." H.B. 1175, S.D. Leg. (Feb. 23, 2007) (An Act to Provide for the Substances Used in the Execution of Sentence of Death and to Allow the Choice of the Substances Used in an Execution Under Certain Circumstances). In addition, the revised statute clearly delegates the decision-making to the department of corrections, adding that "[t]he warden . . . shall determine the substances and quantity of substances used for the punishment of death." *Id.*

[280] *See* Morales v. Tilton, 465 F. Supp. 972, 981 (N.D. Cal. 2006).

[281] *Id.*

[282] *See infra* Part III.B.

[283] Those states are Colorado, Connecticut, Georgia, New Mexico, Oregon, and Washington. *See infra* app. 1. *Compare id. with* Denno, *When Legislatures Delegate*, *supra* note 14, at app. 1, tbl. 19. All six of those states with public protocols in 2005 had public protocols in 2001. *Compare infra* app. 1 *with* Denno, *When Legislatures Delegate*, *supra* note 14, at app. 1, at 181, tbl. 19.

significance of protocols (or perhaps because of it), states have released less information over the years.

This lack of information makes it difficult – if not impossible – to evaluate the constitutionality of lethal injection on any level, without further investigation. For example, in Study 1, department of corrections officials asserted that the lethal injection protocols for four states were confidential, and could not be revealed.[284] In Study 2, the number of states claiming confidentiality increased fourfold (to sixteen states), while two states said protocols did not exist.[285] In other words, one-half (eighteen) of the states that currently apply lethal injection do not allow any evaluation of the protocol, either because the information is confidential or nonexistent. An additional ten states had "limited"[286] or "somewhat limited"[287] protocols that gave some information, but not enough to determine how lethal injection is applied.

C. Changes in Lethal Injection Protocols

When available, the protocol information on lethal injection chemicals is disturbing.[288] Because of the trend toward confidentiality, however, fewer states provided data on which chemicals they use. In Study 1, twenty-nine (80 percent) of the states surveyed disclosed chemical details. In Study 2, twenty-seven states (75 percent) provided such information.[289] The contrast is more acute than it seems because some states that had revealed the information in

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Of those states, five states changed from a public protocol to a confidential protocol: Idaho, Illinois, Montana, North Carolina, and Texas. *Compare infra* app. 1 *with* Denno, *When Legislatures Delegate*, *supra* note 14, at app. 1, at 181, tbl. 19. An additional four states with public protocols in 2001 did not have protocols at all in 2005. *Compare infra* app. 1 *with* Denno, *When Legislatures Delegate*, *supra* note 14, at app. 1, at 181, tbl. 19. New Jersey's protocol was under revision in 2005; New York's highest court declared the death penalty unconstitutional in 2004; New Hampshire and Wyoming both were listed as having partially private protocols in 2001, but are listed as not having a protocol for 2005. *Compare infra* app. 1 *with* Denno, *When Legislatures Delegate*, *supra* note 14, at app. 1, at 181, tbl. 19. And six states (Arizona, Arkansas, California, Florida, Oklahoma, and South Dakota) moved from a public protocol to partially private protocol. *Compare infra* app. 1 *with* Denno, *When Legislatures Delegate*, *supra* note 14, at app. 1, at 181, tbl. 19. Only one state, Virginia, provided more information in 2005 than in 2001, moving from a confidential protocol to a partially private protocol. *Compare infra* app. 1 *with* Denno, *When Legislatures Delegate*, *supra* note 14, at app. 1, at 181 tbl. 19.

[284] *See* Denno, *When Legislatures Delegate*, *supra* note 14, at 116 n.369 (The four states were Nevada, Pennsylvania, South Carolina, and Virginia).

[285] *See infra* app. 1. (Alabama, Delaware, Idaho, Illinois, Indiana, Kentucky, Mississippi, Missouri, Montana, Nevada, North Carolina, Ohio, Pennsylvania, Texas, and Utah).

[286] *See infra* app. 1 (Arizona, Arkansas, Kansas, Louisiana, Maryland, Oklahoma, Tennessee, and Virginia). In the 2001 survey, Kansas and Kentucky had indicated that information did not exist. *See* Denno, *When Legislatures Delegate*, *supra* note 14, at app. 1, at 146, tbl. 11.

[287] *See infra* app. 1 (California and Florida).

[288] In 2005, twenty-seven states provided information on the drugs used in lethal injections. *See infra* app. 1. Twenty-nine states had disclosed this information in 2001. *See* Denno, *When Legislatures Delegate*, *supra* note 14, at app. 1, at 146, tbl. 11. In 2005, twenty-six states used a lethal combination of sodium thiopental, pancuronium bromide, and potassium chloride. *See infra* app. 1. Those states are Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Florida, Georgia, Indiana, Kansas, Kentucky, Louisiana, Maryland, Missouri, Montana, New Mexico, North Carolina, Ohio, Oregon, Pennsylvania, South Dakota, Tennessee, Texas, Utah, Virginia, and Washington. *See infra* app. 1.

[289] In 2005, twenty-seven states provided information on the drugs used in lethal injections. *See infra* app. 1. In turn, twenty-nine states had disclosed this information in 2001. *See* Denno, *When Legislatures Delegate*, *supra* note 14, at app. 1, at 146, tbl. 11. In 2005, twenty-six states used a lethal combination of sodium thiopental, pancuronium bromide, and potassium chloride. *See infra* app. 1. Those states are: Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Florida, Georgia, Indiana, Kansas, Kentucky, Louisiana, Maryland, Missouri, Montana, New Mexico, North Carolina, Ohio, Oregon, Pennsylvania, South Dakota, Tennessee, Texas, Utah, Virginia, and Washington. *See id.* In 2005, Oklahoma was the sole exception. *See id.*

Study 1 did not do so in Study 2, and vice-versa.[290] Yet, in both studies, with two negligible exceptions,[291] all states that reported their lethal injection drugs shared the same three-chemical combination originally created in Oklahoma.[292]

Bucking the trend to provide less information, thirteen, or nearly half, of the twenty-seven states that revealed the chemicals used in lethal injections also disclosed the quantities of those chemicals in 2005.[293] Previously, in 2001, only nine (less than one-third) of the states had disclosed this information.[294]

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[290] For example, six states (Delaware, Idaho, Illinois, Mississippi, New Jersey, and Wyoming) that had provided information on the combination of chemicals used in lethal injections in 2001 did not do so in 2005. *Compare* Denno, *supra* note 14, at app. 1, at 146, tbl. 11 *with infra* app. 1. This figure of six does not include New York, which was in the survey sample in 2001 but not in the survey sample in 2005 because the death penalty had been declared unconstitutional in New York in 2004. *See supra* note 274. Four states that had not provided data in 2001 on the chemicals used did disclose such information in 2005 (Kansas, Kentucky, Pennsylvania, and Virginia). *Compare* Denno, *supra* note 14, at app. 1, at 146, tbl. 11 *with infra* app. 1. This figure does not include Alabama, which switched to lethal injection as an alternative method of execution in the interim period between studies. *See supra* note 274. Information for two states, Kansas and Kentucky, did not exist in 2001, but was provided in 2005. *Compare* Denno, *supra* note 14, at app. 1, tbl. 11 *with infra* app. 1. Information for Pennsylvania and Virginia was confidential in 2001, but those states provided the information in 2005. *Compare* Denno, *supra* note 14, at app. 1, tbl. 11 *with infra* app. 1.

[291] The two states that deviated from their 2001 protocols are easily explained. Oklahoma substituted vecuronium bromide in 2005 for pancuronium bromide in 2001. *Compare* Denno, *When Legislatures Delegate*, *supra* note 14, at app. 1, at 146, tbl. 11 *with infra* app. 1. North Carolina did not mention potassium chloride as part of its combination in 2001, but listed it as the third chemical in 2005. *Compare* Denno, *supra* note 14, at app. 1, tbl. 11 *with infra* app. 1. Oklahoma's substitution is not significant because vecuronium and pancuronium are very similar compounds. *See* A.G. McKenzie, *Historical Note: Prelude to Pancuronium and Vecuronium*, 55 Anaesthesia 551, 551-55 (2000).

[292] *See supra* note 127 and accompanying text.

[293] Those states were Alabama, California, Colorado, Connecticut, Florida, Georgia, Kentucky, Maryland, New Mexico, North Carolina, Tennessee, Texas, and Washington. *See infra* app. 1. The chemical combinations in those states were as follows: Alabama: 1. Sodium Pentothal (50 CC); 2. Sodium Pentothal (50 CC); 3. Saline (60 CC); 4. Pavulon (50 CC); 5. Saline (60 CC); 6. Potassium Chloride (60 CC), Saline (60 CC); California: 1. Sodium Pentothal (5 g) in 20-25 cc of diluent; 2. Pancuronium Bromide (50 cc); 3. Potassium Chloride (50 cc); Colorado: 1. 2.5 grams Sodium Pentothal; 2. 100 mg Pancuronium Bromide; 3. 100 mEq of Potassium Chloride; Connecticut: 1. Thiopental Sodium (2,500 mg) in 50 ml of clear Sodium Chloride 0.9 % solution of approximate concentration of mg/ml or 5 %; 2. Pancuronium Bromide (100 mg) (contents of ten 5 ml vials of 2 mg/ml concentration) in 50 ml; 3. 120 mEq of Potassium Chloride (contents of two 30 ml vials of 2 mEq/ml concentration) in 60 ml; Florida: 1. No less than 2 g of Sodium Pentothal (2 syringes); 2. Saline solution; 3. No less than 50 mg of Pancuronium Bromide (2 syringes); 4. Saline solution; 5. No less than 150 mEq of Potassium Chloride; Georgia: 1. Sodium Pentothal - 6 packages each containing 1GM + 50 cc of Sterile water; 2. Pavulon (Pancuronium Bromide) - 15 vials each containing 10 mgm; 3. Potassium Chloride - 9 vials each containing 40 mEq; 4. Intervals of Saline; Kentucky: 1. Sodium Pentothal 3 Gm; 2. Saline 25 mg; 3. Pavulon 50 mg; 4. Saline 25 mg; 5. Potassium Chloride 240 mEq; Maryland: 1. 120 cc/ 3 g/ two 60 cc syringes of Sodium Pentothal, 2. 50 cc/ 50 mEq./ one 50 cc syringe of Pavulon; 3. 50 cc/ 50 mEq./ one 50 cc syringe of Potassium Chloride; New Mexico: 1. One syringe of 2 g of Sodium Pentothal (contents of four 500 mg vials dissolved in the smallest amount of diluent possible to attain complete, clear suspension); 2. Three syringes each of 50 mg Pavulon; 3. Three syringes each of 50 mEq of Potassium Chloride; Two syringes each of 10-50 cc of saline; North Carolina: 1. No less than 3000 milligrams of Sodium Pentothal; 2. Saline flush; 3. No less than 40 milligrams of Pancuronium Bromide (Pavulon); 4. No less than 160 mEq of Potassium Chloride, saline to flush the IV lines clean; Tennessee: 1. 50 cc diluted Sodium Pentothal; 2. 100 cc Pancuronium Bromide; 3. 100 cc Potassium Chloride; Texas: 1. 30 ml of solution containing 3 grams of Thiopental Sodium (Sodium Pentothal); 2. 50 milliliters of solution containing 100 milligrams of Pancuronium Bromide; 3. 70 milliliters of solution containing 140 mEq of Potassium Chloride; Washington: 1. 2 g Thiopental Sodium; 2. 50 cc normal saline; 3. 100 mg Pancuronium Bromide; 4. 50 cc normal saline; 5. 1.50 to 2.70 mEq/kg, based on body weight, Potassium Chloride (KCl). *See id.*

[294] *See* Denno, *When Legislatures Delegate*, *supra* note 14, at app. 1, at 150, tbl. 15. Those nine states were California, Connecticut, Florida, Mississippi, Montana, New Mexico, North Carolina, Tennessee, and Washington. *Id.* Five states providing the quantities of chemicals in 2005 had not offered that information in 2001. *See infra* app. 1. Those states were Colorado, Georgia, Kentucky, Maryland, and Texas. *See id.* Notably, Alabama also provided this information in 2005. *See id.* Two states (Mississippi and Montana) that had disclosed the quantities of the chemicals used in 2001 did not do so in 2005. *Compare* Denno, *supra* note 14, at app. 1, tbl. 14 *with infra* app. 1. For two states (North Carolina and Washington), the amounts specified in 2005 differed from the amounts provided in 2001. *Compare* Denno, *supra* note 14, at app. 1., tbl. 15 *with infra* app.

As *Morales* showed, chemical quantities offer the most valuable and revealing indication of a particular state's knowledge of the lethal injection process. But the mere listing of chemicals is no assurance that department of corrections officials are conducting procedures correctly. This point became paramount in *Morales* when the court turned to the proper concentration of California's three-drug mixture.[295] Expert testimony revealed that the sodium thiopental was so highly concentrated that it could cause severe pain for an inmate.[296] As the expert explained, California's protocol mixture was "reckless" and "very injurious,"[297] as well as inexplicable: "There's no advantage in making it up like this, and there's significant disadvantage."[298]

While the chemical information the thirteen states revealed in Study 2 has the potential to provide insight, it lacks constitutionally critical details. Without knowing the concentrations of these chemicals, it is impossible to determine whether an inmate actually will be unconscious during the execution. Most states are inconsistent in their treatment of these calculations, indicating that they do not understand their importance.[299] For example, while Washington's 2001 protocol included chemical concentration information, such information was missing from its 2005 protocol,[300] heightening the likelihood of a problematic execution.

After the conclusion of Study 2, a flurry of states started making minor revisions to their protocols to placate the courts. For instance, both Oklahoma and Ohio altered their protocols while facing litigation regarding lethal injection procedures. In 2006, Oklahoma doubled the

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1. All other states that provided the chemical quantities in 2001 gave the same information in 2005. *Compare* Denno, *supra* note 14, at app. 1., at 150, tbl. 15 *with infra* app. 1.

[295] In general, chemical quantities should be specified in two ways to determine if the chemical concentration is sufficient: (1) by weight, which is indicated by grams (gm) or milligrams (mg), and (2) by volume, which is indicated by cubic centimeters (cc) or milliliters (ml). Information on both the weight and the volume of diluent can indicate whether the concentration is so weak it will have no effect, or so dense it can irritate an inmate's veins and cause pain. *See* Testimony of Dr. Mark Heath (Sept. 27, 2006) at 503-04, Morales v. Tilton, 465 F. Supp. 972 (N.D. Cal. 2006).

[296] *See id.* ("I've never heard of anybody making up pentothal at 20 percent. That's an off-the-charts concentration of pentothal.").

[297] *Id.*

[298] *Id.*

[299] As the quantities listed in note 293, *supra*, indicate, half of the six states that had no specified quantities in 2001, the information provided in 2005 is inadequate. For example, Alabama, Colorado, and Kentucky have incomplete protocols in which at least one, if not more, chemicals do not have both volume and weight. Therefore, the chemical concentrations are unknown. For the other three, the specified concentrations for Georgia, Maryland, and Texas seem relatively orderly and proper, at least on paper. The fact that Maryland's protocol is written in a cumbersome way, however, suggests that its authors do not appear to be medically sophisticated. North Carolina and Washington, which both specified the quantities of chemicals in 2001, changed their specifications in 2005. The 2005 North Carolina protocol is a substantial improvement over its 2001 variant because it mentions a proper concentration of potassium chloride; nonetheless, the 2005 North Carolina protocol only mentions the weight but not the volume of sodium thiopental and pancuronium bromide. The protocol for Washington became more problematic from 2001 to 2005. In 2001, Washington was one of four states in which the weights and volumes for sodium thiopental and pancuronium bromide were specified as well as predictably lethal; in turn, only the weight was provided for the potassium chloride. Yet, in 2005, there are a host of problems with the Washington protocol that make it more difficult to interpret. First, the protocol provides only the weight, and not the volume, of the three chemicals. Overall, then, the passage of time has had an odd and unexpected detrimental effect. Mississippi and Montana are perhaps the most perplexing because they did avail of their chemical quantities in 2001 but refused to give the information in 2005. *See* Denno, *When Legislatures Delegate*, *supra* note 14, at 118-121. In general, states that reported the same information at both time points also vary in the extent of their sophistication. *See id.*

[300] *See supra* note 299.

amount of sodium thiopental used.[301] In Ohio, the Department of Rehabilitation and Corrections investigated the state's lethal injection protocol following the botched May 2006 execution of Joseph Clark.[302] According to the department, the state's protocol would adopt several changes,[303] including the review of an inmate's medical file.[304] In turn, judges in California, Missouri, and North Carolina ordered the revision of state lethal injection protocols.[305] Only North Carolina has executed an inmate under a new protocol, which required the use of a machine to monitor the inmate's level of consciousness during the execution.[306]

In general, the divergent ways in which states are attempting to correct the problems with their protocols raise constitutional concerns beyond assessing whether protocols constitute "unnecessary pain and suffering." While it is established that each state now has the same three-drug procedure derived from Oklahoma,[307] increasingly, the similarities among states end there. No two states share the exact same protocol, as far as can be determined. The doses of drugs vary, the qualifications of the executioners lack uniformity, and the conditions under which the execution is performed differ. The umbrella of "lethal injection" conceals the fact that states are inflicting substantially disparate types of punishments. Given these circumstances, it can be questioned whether the method each state now follows is so unusual it violates the Eighth Amendment's standard of a "national consensus."[308] While there remains insufficient information on lethal injection to make that determination, the nature and extent of statewide variability suggests such a possibility.

IV. THE SEARCH FOR A HUMANE EXECUTION CONTINUES

In one way, this superficial similarity among states' lethal injection protocols has provided a shield for states to hide behind. When an inmate in one state would challenge a protocol, the court would point out that more than twenty states used the same drugs and that no court had held that any protocol violated constitutional mandates.[309] For this reason, the recent success of inmates challenging lethal injection protocols has created a snowball effect. Once one

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[301] *Compare Experts Testify on Lethal Injection: States Procedure Can Be Painful, Doctors Say*, Oklahoman, Aug. 9, 2006, at 11A (noting a doctor testified that the dose of thiopental was 1200 milligrams) *with* Jay F. Marks, *Inmates Fight to the Death: Lawsuits Try to Execute Lethal Injection Tactics*, Oklahoman, Aug. 21, 2006, at 9A (noting that the dose was set at 2400 milligrams). Oklahoma did not provide the amount of chemicals used in the 2005 survey. *See supra* note 299.

[302] *See* Letter from Terry J. Collins, director, Ohio Dep't of Rehabilitation and Corr., to Gov. Bob Taft (June 27, 2006); *see also* Provance & Hall, *supra* note 159 and accompanying text.

[303] *See* Letter from Terry J. Collins, director, Ohio Dep't of Rehabilitation and Corr., to Gov. Bob Taft (June 27, 2006) (indicating changes including making every effort to establish two intravenous lines, one in each arm and using a slow-drip process instead of a high-pressure syringe injection; removing time constraints on how quickly execution team members must complete their tasks).

[304] *See id.*

[305] *See* Morales v. Hickman, 415 F. Supp. 2d 1037, 1044–46 (N.D. Cal.), *aff'd per curiam*, 438 F.3d 926 (9th Cir.), *cert. denied*, 126 S. Ct. 1314 (2006); Taylor v. Crawford, No. 05-4173-CV, 2006 WL 1779035 (W.D. Mo. June 26, 2006).

[306] *See* Brown v. Beck, 445 F.3d 752 (4th Cir. 2006).

[307] *See supra* note 127.

[308] *See supra* note 269.

[309] *See, e.g.*, Evans v. Saar, 412 F. Supp. 2d 519 (D. Md. 2006) ("Circuit after Circuit (including the Fourth) has ruled that the [same lethal injection protocol that Maryland uses] does not run afoul of the Eighth Amendment."); Abdur'Rahman v. Bredesen, 181 S.W.3d 292 (Tenn. 2005) (noting that Tennessee used the method used by the vast majority of the states and had not been held unconstitutional).

court found a protocol problematic, an inmate in another state could point to the similarities to that state's protocol to bolster the claim.[310]

This part considers how the current wave of lethal injection lawsuits originated, particularly during the last several years of unprecedented speed and impact. Several themes arise. First, the past four years include an unusual level of Supreme Court review of an execution method. The consequences of the Supreme Court's attention were nearly immediate, as it legitimized inmates' challenges, triggering the domino effect. Second, such litigation has revealed the depth of the medical problems associated with injection. While lethal injection challenges began immediately after the method's hasty enactment in 1977,[311] at no time during the past three decades has information concerning medical complications and doctor participation been so pronounced.[312] It is this kind of "objective evidence" that Judge Fogel found so compelling in *Morales*.[313] Finally, this part briefly examines the parallel success of inmates attacking lethal injection from different angles. The growing sophistication of the legal parties and the complexity of the medical aspects of the litigation have invited a focus beyond simply a traditional Eighth Amendment lens, leading to a more in-depth scrutiny.

A. The Supreme Court's Involvement

A notable oddity of the American death penalty is the Supreme Court's complete constitutional disregard for how inmates are executed.[314] While the Court continually has recognized the Eighth Amendment hazards associated with prison conditions, particularly through section 1983 claims, it never has reviewed evidence of the constitutionality of execution methods despite repeated and horrifying mishaps.[315] Nonetheless, starting in December 2003, the Court granted certiorari on two lethal injection-related cases within just over a two-year span.[316] These cases centered on the procedural aspects of injection, but the Court's interest in the topic served as an impetus for broader movement in lethal injection litigation.

First, the Court agreed to hear *Nelson v. Campbell*, in which a condemned inmate sought to challenge the use of a cut-down procedure in his lethal injection.[317] David Nelson had filed

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[310] *See, e.g.*, Cooey v. Taft, 430 F. Supp. 2d 702 (S.D. Ohio 2006) (staying an execution for a condemned inmate, which the Sixth Circuit later overturned). In granting the stay, the district judge took note of the stays granted in challenges in California, Missouri, and North Carolina and the mounting evidence questioning the constitutionality of lethal injection protocols. *Id.* at 707.

[311] *See generally* Denno, *When Legislature Delegate*, *supra* note 14, at 100-16.

[312] *See supra* Part II.

[313] *See supra* Morales v. Hickman, 415 F. Supp. 2d 1037, 1039 (N.D. Cal.), *aff'd per curiam*, 438 F.3d 926 (9th Cir.), *cert. denied*, 126 S. Ct. 1314 (2006).

[314] *See* Denno, *When Legislatures Delegate*, *supra* note 14, at 70.

[315] *See* Denno, *Getting to Death*, *supra* note 14, at 321-348; *see also* Hill v. McDonough, 126 S.Ct. 2096 (2006) (holding that an inmate can use section 1983 to challenge an execution procedure, but not addressing the substantive claims).

[316] *See* Hill v. Crosby, 126 S. Ct. 1189 (2006) (granting stay of execution and granting leave to petition for writ of certiorari); Nelson v. Campbell, 540 U.S. 1046 (2003) (granting writ of certiorari for an inmate's Section 1983 claim challenging the use of the cut-down procedure in a lethal injection in Alabama). The Supreme Court agreed to hear the *Nelson* case on December 1, 2003 and agreed to hear the *Hill* case on Jan. 25, 2006. *See Hill*, 126 S.Ct. 1189; *Nelson*, 540 U.S. 1046. For excellent discussions of *Hill*, see Douglas A. Berman, *Finding Bickel Gold in a* Hill *of Beans*, 2005-2006 Cato Sup. Ct. Rev. 311 (2006); Note, *A New Test for Evaluating Eighth Amendment Challenges to Lethal Injections*, 120 Harv. L. Rev. 1301 (2007).

[317] *Nelson*, 540 U.S. 1046 (2006). The Supreme Court granted certiorari on "[w]hether a complaint brought under 42 U.S.C § 1983 by a death-sentenced state prisoner, who seeks to stay his execution in order to pursue a challenge to the procedures for carrying out the execution, is properly recharacterized as a habeas corpus petition under 28 U.S.C § 2254?" *Id.* The state had

his section 1983 claim three days before his execution, alleging that the cut-down procedure, which the state could not even guarantee would be performed by a physician, violated his Eighth Amendment rights.[318] A federal district court in Alabama – a state that had adopted lethal injection as an execution method only a year earlier – had dismissed Nelson's complaint at the pleading stage, characterizing the claim as a successive habeas application, and finding it barred, which the Eleventh Circuit affirmed.[319] The Supreme Court reversed, however, concluding that the mere issuance of a stay did not convert a valid section 1983 claim into a successive habeas petition.[320] While the Court followed an entirely procedural path to reach its holding, the decision highlighted an alternative avenue through which to bring such challenges, as opposed to the highly restricted federal habeas corpus petition.[321]

The Supreme Court handed down its decision in *Nelson* in May 2004, but did not address the question posed; the Court found it unnecessary to determine whether the inmate's claim was properly characterized as a section 1983 claim because the state conceded that it was.[322] While the Supreme Court in *Nelson* remanded the case for consideration of the constitutionality of the cut-down procedure, the Court agreed again to address the procedural question in *Hill v. McDonough*.[323]

In the interim, however, the Supreme Court did not ignore the increasing number of attacks lodged against lethal injection. Rather, an Eighth Circuit case relying on an unprecedented medical study, kept the justices apprised of the validity of such challenges.[324] That medical study, which appeared in an April 2005 issue of *The Lancet*, a British medical periodical, reported that the level of sodium thiopental used in lethal injection executions might be insufficient, particularly given the potential of poorly trained executioners, of previous inmate substance abuse, and of the heightened level of anxiety in inmates (who generally are not pre-medicated).[325]

Condemned inmates and their lawyers seized on *The Lancet*'s empirical evidence to support section 1983 claims challenging lethal injection.[326] In May 2005, the Eighth Circuit refused to grant a stay of execution for a Missouri inmate challenging the state's lethal injection protocol; but a dissenting judge cited *The Lancet* article and noted that the state had not rebutted

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planned to use a "cut-down" procedure on the inmate, who had a long history of drug abuse, cutting into the skin to establish intravenous access. *See Nelson v. Campbell*, 541 U.S. 637, 640 (2004).

[318] *See Nelson*, 541 U.S. at 639.

[319] *See id.* at 640, 642-43.

[320] *See id.* at 645-47.

[321] *See id* at 646-47.

[322] *See id.* at 644. However, the Supreme Court found "[t]hat venous access is a necessary prerequisite does not imply that a particular means of gaining such access is likewise necessary," and reversed and remanded the case. *Id.* at 644, 651.

[323] *See* Hill v. McDonough, 126 S.Ct. 2096 (2006) (finding that inmate could bring a Section 1983 claim to challenge the lethal injection procedure, however, the claimant still must prove the elements necessary for the issuance of a stay of execution).

[324] *See* Brown v. Crawford, 408 F.3d 1027 (8th Cir. 2005).

[325] Leonidas G. Koniaris, et al., *Inadequate Anaesthesia in Lethal Injection for Execution*, 365 The Lancet 1412, 1412 (April 16, 2005). This article examined the post-execution toxicology reports of forty-nine inmates and concluded that twenty-one of those inmates, or 43%, had levels of anesthesia "consistent with awareness." *Id.*

[326] *See, e.g.*, Rutherford v. Crosby, 438 F.3d 1087 (11th Cir. 2006); Brown v. Crawford, 408 F.3d 1027 (8th Cir. 2005); Timberlake v. Donahue, 2007 WL 141950 (S.D. Ind. Jan. 16, 2007); Crowe v. Head, 426 F. Supp. 2d 1310 (N.D. Ga. 2005); Hill v. State, 921 So.2d 579 (Fla. 2006); Bieghler v. State, 839 N.E.2d 691 (Ind. 2005).

the article's findings.[327] Justice John Paul Stevens, dissenting from the Supreme Court's denial of the stay, wrote that he would have granted the stay for the same reasons as the dissenting Eighth Circuit judge, alluding indirectly to *The Lancet* article.[328] While the Court chose not to hear the substantive issue of the section 1983 challenge, the Eighth Circuit case indicates that at least some justices took note of the recent revelations regarding the effectiveness of lethal injection protocols.[329]

Coincidentally, Clarence Hill, a Florida inmate, also relied on *The Lancet* article in bringing his section 1983 challenge.[330] The Supreme Court of Florida had rejected the claim, noting that the court already had addressed the question of the constitutionality of the state's lethal injection protocol in 2000.[331] But the United States Supreme Court granted certiorari to answer the limited procedural question of whether a section 1983 claim to challenge a lethal injection protocol could be classified as a successive habeas petition.[332] The Court held that Hill could bring his claim as a section 1983 action; but the lower courts declined to grant Hill the stay of execution he needed to litigate his claim because he could not show a likelihood of success that Florida's execution procedures violated his constitutional rights.[333] The state's highest court already had decided the question of the constitutionality of the state's protocol in *Sims v. State* in 2000.[334] And the new evidence provided by *The Lancet* article did not overcome the judicial precedent.[335] The district court in Florida found that Hill had not filed his claim in a timely manner, but rather was trying to delay his execution, which the Eleventh Circuit affirmed.[336]

B. The Ripple Effects of *Nelson* and *Hill*

While the Supreme Court has addressed only the procedural aspect of execution method challenges, the rarity of such attention awoke inmates and their lawyers, as well as the courts, to the legitimacy of such claims. In what proved to be a foreshadowing of things to come, a New

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[327] *See Brown*, 408 F.3d 1027 (denying a stay of execution for an inmate attempting to challenge Missouri's lethal injection protocol under Section 1983). The Eighth Circuit dismissed the inmate's challenge to lethal injection, however, a dissent from the denial of stay cited The Lancet article's findings that executed inmates might not have been anesthetized adequately. *Id.* at 1028 (Bye, J., dissenting).

[328] *See* Brown v. Crawford, 125 S.Ct. 2289 (2005) (denying to grant a stay of execution for a Missouri inmate challenging the state's lethal injection protocol). Justice Stevens dissented from the denial of stay and, in a two-sentence opinion in which Justices Ginsburg and Breyer joined, stated that he would grant the stay for the reasons discussed. *Id.*

[329] *Id.*

[330] *See* Hill v. State, 921 So.2d 579 (Fla. 2006) (denying challenge to lethal injection with a dissent noting the reasons to have an evidentiary hearing on the issue). The inmate cited The Lancet article in alleging the state's lethal injection protocol could constitute cruel and unusual punishment. *Id.* at 582.

[331] *Id.* at 582-83 (agreeing with the trial court that the information did not sufficiently call into question the holding in *Sims v. State*, 754 So.2d 657 (Fla.2000), which found that Florida's protocol did not violate the ban on cruel and unusual punishment). One judge would have granted an evidentiary hearing based on the fact that the evidence from The Lancet and supporting affidavit were "totally beyond anything considered by this Court or the trial court in Sims" and the state had failed to rebut the findings. *Id.* at 586-87 (Anstead, J., concurring and dissenting).

[332] *See Hill*, 126 S.Ct. 1189.

[333] *See* Hill v. McDonough, 464 F.3d 1256 (11th Cir. 2006) (denying Hill's request for a stay of execution); Hill v. McDonough, No. 4:06-CV-032, 2006 WL 2556938 (N.D. Fla. 2006) (dismissing condemned inmate's Section 1983 complaint for unnecessary delay in filing).

[334] *See Hill*, 2006 WL 2556938, at *3 (noting that "[w]hile the Lancet study itself may be relatively new, the factual basis of Hill's claim, has been raised and disposed of in other cases").

[335] *See Hill*, 464 F.3d at 1259.

[336] *Id.*

Jersey court refused to allow the application of the state's new lethal injection regulations two months after the Supreme Court agreed to hear Nelson's challenge.[337] A group of citizens advocating for a death penalty moratorium challenged the adoption of new regulations implementing New Jersey's lethal injection statute.[338] The court, however, required the department of corrections to justify changes in the procedure,[339] stressing its concern over the lack of medical involvement in determining the merit of the changes.[340] Although the challenge in New Jersey took a different form from subsequent actions, the theme of a lack of medical input persisted. Indeed, the New Jersey advocacy group later filed an amicus brief in the Supreme Court in the *Hill* case.[341]

Challenges to lethal injection protocols existed years before these two recent Supreme Court cases,[342] but the Court's spark of encouragement, no matter how indirect, propelled attorneys to bring claims that may have remained dormant otherwise. While the *Nelson* case started the ball rolling, the effects of the Court's decision to take up *Hill* were widespread and immediate. The simple granting of certiorari in *Hill* served as the basis for stays of executions for condemned inmates bringing section 1983 claim.[343] The broad ripples of these cases spread quickly and could be felt in state and federal courts, in legislatures, and in governors' offices in a number of states. The following sections examine six states in particular.

1. California

The *Morales* litigation in California that stretched throughout 2006 emphasized many of the common issues embodied in a majority of lethal injection challenges.[344] However, *Morales* was not California's first encounter with a section 1983 challenge to the state's lethal injection procedures. Donald Beardslee, a condemned inmate, brought the same claim in *Beardslee v. Woodford* filed on December 20, 2004.[345] Judge Fogel, the same district court judge who presided over the *Morales* case, denied a preliminary injunction for Beardslee.[346] The Ninth Circuit found that the district court should have conducted an analysis of the facts to determine

[337] In re Readoption with Amendments of Death Penalty Regulations, N.J.A.C. 10A:23, by the New Jersey Department of Corrections, 842 A.2d 207 (N.J. App. Div. Feb. 20, 2004). The New Jersey court halted executions in the state because the Department of Corrections had failed to justify proposed regulations for lethal injection, describing some of the regulations as "arbitrary and unreasonable." *Id.* at 68. For instance, the court stated that the Department of Corrections had not justified a regulation removing the use of a heart monitor by merely stating that there was no need for an emergency revival cart and that the lethal substances rejected are lethal; rather, the court stated a medical opinion to that effect might be necessary to justify the regulation. *Id.* at 68-69.

[338] *Id.* at 65-66.

[339] *Id.* at 68.

[340] *See id.* at 69. "Our concern is that [Department of Corrections] itself does not have medical expertise, and nothing in the record suggests medical consultation and opinion on the reversibility issue or, indeed, whether there are any appropriate lethal drugs whose effects might be reversible." *Id.*

[341] *See* Brief of Amicus Curiae New Jerseyans for Alternatives to the Death Penalty in Support of Petitioner, Hill v. McDonough, 126 S. Ct. 2096 (2006).

[342] *See* Denno, *When Legislatures Delegate*, *supra* note 14, at 90-116.

[343] *See, e.g.*, Bieghler v. Donahue, 163 Fed. Appx. 419 (7th Cir. 2006); Jackson v. Taylor, No. Civ. 06-300, 2006 WL 1237044 (D. Del. May 9, 2006); Roane, et. al, v. Gonzales, 05-2337 (D.D.C. Feb. 24, 2006).

[344] *See* Introduction, *supra*.

[345] *See* Beardslee v. Woodford, 395 F.3d 1064, 1067 (9th Cir. 2005)

[346] *See id.* at 1066. Beardslee previously had asserted in challenges to both lethal gas and lethal injection. *See id.* at 1068.

whether Beardslee could have brought his claim earlier;[347] yet, the Ninth Circuit nonetheless affirmed the dismissal of Beardslee's claim because its review of the district court's decision was "limited and deferential."[348]

Indeed, when the Northern District of California considered this same question in *Morales*,[349] it was only because the anesthesiologists withdrew at the last moment[350] that the court held evidentiary hearings that set the stage for Morales' lethal injection challenge, in which he ultimately prevailed.[351] Courts in three of the states discussed below (Missouri, North Carolina, and Florida), took judicial notice of the California district court's February 12, 2006 order.[352] Indeed, the lawyers representing the inmates in California also represented the inmate who successfully challenged Missouri's implementation of lethal injection.[353]

2. Missouri

In June 2005, Michael Anthony Taylor, a death row inmate, brought a section 1983 claim in federal court in Missouri.[354] A year later, in the same month that the Supreme Court handed down its decision in *Hill*, that Missouri federal district court became the first court to hold a state's lethal injection protocol, as implemented, unconstitutional.[355] The district court initially denied Taylor's claims.[356] But in a second, more complete round of discovery and evidentiary hearings, the court uncovered shocking details about Missouri's lax execution procedures.

On June 5, 2006, attorneys representing Taylor conducted an anonymous deposition of the supervising execution doctor, known in court records only as John Doe I.[357] When asked about Missouri's written execution procedures, Dr. Doe said he had never seen any written procedures.[358] When asked about the method of mixing a solution of sodium thiopental – a drug that, when improperly mixed, can cause an inmate excruciating pain – Dr. Doe said he improvised because the powder form of the drug had not been dissolving.[359] When asked why he did not remember preparing lower doses of sodium thiopental for some inmates, Dr. Doe

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[347] *See id.* at 1070.
[348] *Id.* at 1076.
[349] *See* Morales v. Hickman, 438 F.3d 926, 927, 927 n.2 (9th Cir. 2006) (citing the district court order).
[350] *See* Morales v. Hickman, Order on Defendant's Motion to Proceed on Alternative Method to Order Denying Preliminary Injunction (N.D. Cal. Feb. 21, 2006).
[351] *See supra* notes 446-47 and accompanying text.
[352] *See* Taylor v. Crawford, No. 05-4173-CV, 2006 WL 1779035, at *6 (W.D. Mo. June 26, 2006)*;* Brown v. Beck, NO. 5:06CT3018 H 2006 WL 3914717, *3 (E.D.N.C. Apr 07, 2006); Diaz v. State, 945 So.2d 1136, 1144 (Fla. 2006).
[353] *Compare* Morales v. Tilton, 465 F. Supp. 972, 973 (2006) *with* Taylor, 2006 WL 1779035, at *1.
[354] *See Taylor*, 2006 WL 1779035, at *1.
[355] *Id.* at *8.
[356] *See* Taylor v. Crawford, 445 F.3d 1095 (8th Cir. 2006) (remanding to the district court). The Eighth Circuit previously had reversed a stay of execution for the inmate that the district judge had ordered to allow for time for evidentiary hearings, which the judge's calendar could not accommodate until after the execution date. *Id.* at 1097-98. The Eighth Circuit had reassigned the case to a different judge, who held limited evidentiary hearings before the execution date. *Id.* at 1098. However, the Eighth Circuit ruled that the limited evidentiary hearing did not suffice and noted that the Supreme Court's decision to hear the *Hill* case (which had not yet been decided) militated in favor of remanding the case and giving thirty days for discovery and thirty days for hearings. *Id.* at 1099.
[357] *See* Taylor, 2006 WL 1779035, at *4.
[358] *See id.* at *4-5.
[359] *See id.* at *5.

responded that he had dyslexia, which hindered his memory: *"So, it's not unusual for me to make mistakes . . . . That's why there are inconsistencies in what I call drugs. . . . but it's not medically crucial in the type of work I do as a surgeon.*"[360] Dr. Doe's deposition also revealed that he had sole authority to modify the state's protocol at a moment's notice.[361]

Three weeks after Dr. Doe's deposition, the district court held unconstitutional Missouri's lethal injection protocol.[362] The court found numerous problems with Missouri's execution procedures. The state lacked a written protocol and Dr. Doe had cut in half the amount of sodium thiopental used.[363] The court expressed grave concern for the complete discretion Dr. Doe had in modifying the protocol, especially given that he seemed unqualified for the job and lacked training in anesthesiology.[364] As a result, not only did the district court conclude that such procedures subjected inmates to an unnecessary risk of unconstitutional pain and suffering, but the court also banned Dr. Doe from participating in executions in the future.[365]

In its order, the district court stated that a board certified anesthesiologist had to mix the lethal drugs and must directly observe the injection of the drugs.[366] The court also required that the dose of sodium thiopental be at least five grams, and that the anesthesiologist certify that the inmate had reached a sufficient anesthetic depth before injecting the next two drugs in the sequence.[367] The court also required the constant monitoring of the inmate by the anesthesiologist.[368]

Yet the state's insistence on an anesthesiologist was short-lived. Missouri sent a letter to 298 anesthesiologists in the area, asking for their participation.[369] The Department of Corrections submitted an affidavit to the court eight days after mailing the letter, representing that the department had been unable to retain an anesthesiologist.[370] In September 2006, the district court subsequently revised its requirement of a board-certified anesthesiologist, allowing the state to use a physician trained in anesthesiology, potentially in combination with equipment purchased to monitor anesthetic depth, but maintained that Dr. Doe was banned from participating in future executions.[371] Missouri appealed to the Eighth Circuit, arguing that the district court exceeded its authority in fashioning a remedy beyond what the Constitution required.[372]

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[360] *Id.* (emphasis in original).
[361] *See id.* at *7.
[362] *See id.* at *8.
[363] *See id.* at *7.
[364] *See id.* at *7.
[365] *See id.* at *8; *see also* Taylor v. Crawford, No. 05-4173-CV (W.D. Mo. Sept. 12, 2006) (order rejecting state's revised protocol).
[366] *See* Taylor, 2006 WL 1779035, at *8.
[367] *See id.* at *9.
[368] *See id.*
[369] Affidavit of Terry Moore, Taylor v. Crawford, No. 05-4173-CV (July 14, 2006).
[370] *See id.*
[371] *See* Taylor v. Crawford, No. 05-4173-CV (W.D. Mo. Sept. 12, 2006) (order rejecting state's revised protocol)
[372] *See* Brief of Appellants, Taylor v. Crawford, No. 06-3651, at 51-61 (Dec. 4, 2006).

3. North Carolina

In a similar section 1983 challenge in North Carolina during 2006, Willie Brown, Jr., a condemned inmate, achieved limited success.[373] The North Carolina district court found that the state needed to revise its protocol to ensure the inmate was unconscious.[374] In response, the Department of Corrections chose to purchase a machine to monitor the inmate's level of consciousness.[375] The district court found the execution could proceed.[376] The Fourth Circuit affirmed over the dissent of one judge, who maintained that the state's solution was inadequate[377] because of evidence that the machine on its own could not provide a sufficient measure of anesthetic depth.[378] Additionally, while medical personnel must monitor the machine's output readings, the district court order "ma[de] no provision for these medical professionals to actually *do* anything" if a sufficient level of anesthetic depth was not achieved.[379] Likewise, "even if a medical professional could respond," there was no evidence to show that "the professional would possess the skills necessary to ensure Brown's unconsciousness."[380] Nonetheless, North Carolina executed Brown on April 21, 2006.[381]

In practice, North Carolina's response proved flawed. First, the manufacturer of the machine protested its use in executions:[382] It did not want to give the execution the appearance of a medical procedure.[383] In fact, California had attempted to purchase the same machine from the company for Morales' execution, but the company refused to sell the machine to the state.[384] North Carolina, however, stated on its order form that the machine would be used to monitor inmates recovering from surgeries.[385] The company subsequently enacted a policy that required departments of corrections to sign contracts specifying that the machine would not be used in executions.[386] Of course, the company may be powerless to contain the use of its equipment, because machines are offered for resale on the Internet.[387]

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[373] *See Brown v. Beck*, 2006 WL 3914717 (E.D.N.C. April 7, 2006).
[374] *See id.* The district court found that Brown raised sufficient doubts about the constitutionality of his execution that the state needed to address those concerns before the execution could proceed. *Id.* at *8. "Specifically, the Court finds that the questions raised could be resolved by the presence of medical personnel who are qualified to ensure that Plaintiff is unconscious at the time of his execution." Id. at *8. The district court gave the state one week in which to respond. *Id.*
[375] *See* Brown v. Beck, 5:06-CT-3018 (E.D.N.C. 2006) (Apr. 17, 2006) (ruling that North Carolina could proceed with the execution because it had taken sufficient precautions to make sure the inmate was unconscious through the use of the monitoring device).
[376] *See id.*
[377] *See* Brown v. Beck, 445 F.3d 752 (4th Cir. 2006)
[378] *See id.* at 754 (Michael, J., dissenting).
[379] *Id.* at 755.
[380] *Id.* at 756.
[381] *See* N. C. Dep't of Corr., *Execution Carried Out Under Current Death Penalty Statute*, http://www.doc.state.nc.us/DOP/deathpenalty/executed.htm.
[382] *See* Robert Steinbrook, *New Technology, Old Dilemma—Monitoring EEG Activity During Executions* 354 New Eng. J. Med. 2525 (2006) (examining the use of bispectral index monitors in executions).
[383] *See id.* at 2526.
[384] *See id.*
[385] *See id.* at 2527.
[386] *See id.*
[387] *See id.* at 2526.

Events in 2007 also called into question the adequacy of the state's response to the court's order and highlighted the validity of the dissenting judge's concerns. In March 2007, a North Carolina district court halted executions until the state could guarantee the participation of a licensed physician, as required by the state's lethal injection statute.[388] On that same day, North Carolina filed a complaint against the state medical board seeking to prevent the board from taking disciplinary actions against those physicians who chose to participate in executions.[389] In depositions taken for that lawsuit, however, the parties discovered a deviation from the district court's order allowing the execution to proceed.[390] The physician present at previous executions said he did not monitor inmate unconsciousness and that the Department of Corrections had never informed him of the order requiring such monitoring.[391] As a result of such revelations, the lawyers who represented a North Carolina inmate executed in August suggested they would file a wrongful death lawsuit against the state.[392]

4. Florida

While Hill emerged successful from the Supreme Court, the victory proved to be of little use to Hill himself. The federal courts in Florida declined to grant Hill a stay so he could pursue the challenge and Florida executed Hill on September 20, 2006.[393] But the next chapter in Florida's battle with lethal injection began three months later. Florida would execute two more inmates before the execution of Angel Diaz would cast Hill's claims in a new light.[394]

For thirty-four minutes on December 12, 2006, execution personnel in Florida attempted to put Diaz to death.[395] But Diaz was not dying. Newspaper accounts of the execution painted the gruesome scene: Diaz lay on the execution table, squinting and grimacing, while trying to speak; executioners had to inject a second round of chemicals.[396] The medical examiner's report revealed that the IV had infiltrated, meaning that the lethal chemicals flowed into Diaz's tissue, rather than his bloodstream.[397] Ironically, Diaz unsuccessfully had challenged the state's lethal injection procedures.[398]

Two days after the Diaz execution (and, notably, the day after the *Morales* decision), Florida Governor Jeb Bush established a commission to investigate the state's lethal injection

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[388] *See* North Carolina v. Holman, 97-CRS-49226 (Wake Co. Sup. Ct. Mar. 6, 2007) (canceling the execution until the state could meet the requirements of the statute).
[389] *See* Complaint N.C. Dep't of Corr. v. N.C. Med. Board (Wake Co. Sup. Ct . Mar. 6, 2007) (alleging that executions are not medical procedures regardless of participation by physicians or EMTs and, therefore, requesting a preliminary injunction preventing the N.C. Medical Board from taking action against doctors who participate and requesting the court declare that executions are not medical procedures).
[390] *See* Andrea Weigl, *Did Doctor Monitor Executions?*, The (N.C.) News & Observer, Mar. 29, 2007, at xx.
[391] *See* Andrea Weigl, *Doc's Execution Role: Be Present*, The (N.C.) News & Observer, Mar. 30, 2007, at xx.
[392] *See id.*
[393] *See* Florida Department of Corrections, *Execution List, 1976 to Present*, http://www.dc.state.fl.us/oth/deathrow/execlist.html (last visited Mar. 9, 2007).
[394] *See id.*
[395] *See* Florida Commission Report, *supra* note 30, at 8.
[396] *See id.* at 10.
[397] *See id.* at 8.
[398] *See* Diaz v. State, 945 So.2d 1136, 1144 (Fla. 2006)

procedure.[399] During the first two months of 2007, the commission held five days of evidentiary hearings,[400] concluding in a report that the state's protocol and execution training procedures required revising.[401] Specifically, the report noted that, during Diaz's execution, execution team members had failed to establish the intravenous access properly or even to follow the state's protocol.[402] The commission recommended ways to address these problems (including ensuring the inmate's level of unconsciousness); yet, citing ethical reasons, the three medical professionals on the commission "refrained from rendering [their] medical expertise or consent[ing] to these specific recommendations."[403] These same medical professionals concluded that the recommendations would require the employment of medical personnel who would violate ethical guidelines and, as such, "the inherent risks, and therefore the potential unreliability of lethal injection cannot be fully mitigated."[404]

5. Kentucky, Maryland

Relative to the successes garnered in California, Missouri, North Carolina, and Florida, inmates pursued challenges in far less dramatic fashion in a slew of other states. For example, two states, Maryland and Kentucky, halted executions based on violations of administrative enactment procedures.[405] Maryland's ruling still stands; yet, the Kentucky court reversed itself after finding that subjecting lethal injection procedures to public review would turn the process into "nothing but a series of collateral attacks precluding capital punishment."[406]

C. Parallel Success without a Solution

Historically, challenges to execution methods have followed a fairly predictable Eighth Amendment path. When one method of execution became problematic, such as hanging, for example, states would sense constitutional vulnerability and switch to another method, such as electrocution or lethal gas. When those two methods established a record of serious botches, states switched to lethal injection.[407] Yet, the past four years have shown a striking array of continually changing strategies – ranging from action in the courts in the form of the more-frequent section 1983 challenges and less-frequent administrative law claims to gubernatorial attempts to investigate lethal injection without court involvement and state legislative efforts to permit doctor participation in executions.

In 2006 alone, two district courts held state lethal injection protocols unconstitutional, two governors put executions on hold, and another handful of states effectively halted executions

[399] *See* Fla. Exec. Order No. 260 (Dec. 15, 2006) (staying all executions after the botched execution of Angel Diaz).
[400] *See* Florida Commission Report, *supra* note 30, at 3-4.
[401] *See id.* at 8-13.
[402] *See id.* at 8.
[403] *See id.* at 15.
[404] *Id.*
[405] *See* Evans v. State, 914 A.2d 25, 80-81 (Md. 2006); Bowling v. Ky. Dep't of Corr., No. 06-CI-00574 (Ky. Franklin Cir. Ct. Div. 1 Nov. 22, 2006).
[406] Bowling v. Ky. Dep't of Corr., No. 06-CI-00574, at 8 (Ky. Franklin Cir. Ct. Div. 1 Dec. 27, 2006).
[407] *See* Denno, *When Legislatures Delegate*, *supra* note 14, at 81-86, 129-31.

as inmates pursued lethal injection challenges.[408] Indeed, the actions in California, Maryland, and Florida occurred over five days in December 2006.[409] In early 2007, Tennessee's governor established a ninety-day stay of executions to review the state's procedures and a Delaware court certified a class action section 1983 lawsuit by the state's sixteen death row inmates.[410] The start of 2007 also showed a high level of involvement on the part of state legislatures.[411] The appropriate degree of medical participation served as one common thread weaving through these actions.

Presumably, the impact and visibility of this litigation, and the problems it revealed, would encourage states to make substantial changes in their protocols as well as assess issues pertaining to medical involvement. However, the disjointed ways in which states have reviewed their protocols – at times responding on the fly to court orders, as in California, or establishing a quick-and-dirty review of execution procedures, as in Florida – indicate a need for a more comprehensive and cohesive effort to address the problems. The next part offers recommendations for such a response.

V. THE SEARCH FOR SOLUTIONS

In *Morales*, Judge Fogel stated that this country's lethal injection process can be "fixed."[412] Yet, it is questionable whether the remedies that have been proposed can fix lethal injection protocols with a sufficient degree of reliability. The difficulty with identifying the "fix" is that states have not provided enough information on the problems. Recent revelations about lethal injection in this country have resulted in more questions than answers: What is the

[408] Federal district courts in California and Missouri held execution protocols unconstitutional in 2006. *See* Morales v. Tilton, 465 F. Supp. 2d 972 (N.D. Cal. 2006); Taylor v. Crawford, No. 05-4173-CV, 2006 WL 1779035, *8 (W.D. Mo., 2006). In 2006, governors in three states, Florida, South Dakota, and Tennessee, imposed a moratorium on executions by executive order. *See* Fla. Exec. Order No. 260 (Dec. 15, 2006) (staying all executions after a botched execution); Tenn. Exec. Order No. 43, (placing executions on hold for ninety days); Aug. 29, 2006 Press Release from Governor's Office: Gov. Rounds Issues Statement on the Stay of Execution for Elijah Page, http://www.state.sd.us/governor/. Courts in four others states—Arkansas, Delaware, Maryland, and Ohio—stayed executions in 2006 and have not had an execution since the stay. *See* Cooey v. Taft, 430 F. Supp. 2d 702 (S.D. Ohio 2006); Jackson v. Taylor, Civ. No. 06-3000 (D. Del. May 9, 2006), available at http://www.law.berkeley.edu/clinics/dpclinic/Lethal%20Injection%20Documents/Delaware/2006.05.09%20District%20Ct%20order.pdf; Nooner v. Norris, No. 5:06 CV 00110, (E.D. Ark. 2006) available at http://www.law.berkeley.edu/clinics/dpclinic/Lethal%20Injection%20Documents/Arkansas/2006.06.26%20order%20granting%20PI.pdf; Evans v. State, Nos. 107, 122-24, 2006 WL 3716363 (Md. Dec. 19 2006). In February 2007, the Delaware district court certified the suit challenge Delaware's lethal injection protocol as a class action lawsuit and joined to the suit the additional fifteen death row inmates. *See* Jackson v. Danberg, No. CIV.06 300, 2007 WL 549731 (D. Del. Feb. 22, 2007).

[409] The Northern District of California issued its opinion holding the state's protocol unconstitutional as implemented on December 15, 2006; the Florida governor and the Maryland Court of Appeals both halted executions on December 19, 2006. *See* Evans, 2006 WL 3716363, at *; Fla. Exec. Order No. 260 (Dec. 15, 2006); Morales v. Tilton, 465 F. Supp. 2d at 981.

[410] *See Jackson v. Danberg*, No. CIV.06 300, 2007 WL 549731 (D. Del. Feb. 22, 2007) (certifying class action suit challenging Delaware's lethal injection protocol and joining to the suit the additional fifteen death row inmates); Tenn. Exec. No. 43 (Feb. 1, 2007).

[411] The governor signed two bills relating to lethal injection. First, revisions to the lethal injection statute eliminated the reference to "substance or substances in a lethal quantity." *See* H.B. 1175, *An Act to provide for the substances used in the execution of a sentence of death and to allow the choice of the substances used in an execution under certain circumstances* (S.D. 2007 (signed Feb. 23, 2007). Second, a separate bill repealed any mention of physician involvement from the death penalty sections of the statutory code. *See* H.B. 1160, *An Act to repeal the requirement for physician involvement in the execution of a sentence of death by eliminating certain specified roles* (S.D. 2007) (signed Feb. 23, 2007).

[412] Morales v. Tilton, 465 F. Supp.2d 972, 974 (N.D. Cal. 2006).

appropriate level of medical involvement? And who should decide? Are states using the correct drugs? Do less constitutionally vulnerable alternatives exist?

This part recommends a method for solving the underlying problem – the lack of accurate information – as a pre-requisite for answering the key questions. First, states should provide for an adequate time to conduct an in-depth study of the proper implementation of lethal injection. Second, states should make transparent lethal injection procedures. An apt analysis of the constitutionality of lethal injections cannot succeed without states' release of all critical information on the execution process.

A. In-Depth Study of Lethal Injection

States adopted lethal injection without medical or scientific justification for the procedure.[413] As such, it is not surprising that Texas botched this country's first lethal injection and that states continuously have failed to prevent such debacles.[414] From the start, however, the medical profession strongly opposed the use of lethal injection for executions, fearing that the public would associate the practice of medicine with death.[415] Yet, lethal injection's link to medicine did make executions appear more humane and palatable – a perception states encouraged.[416] The vision of a serene inmate gently falling asleep evoked all the beneficial associations that only the medial profession could bring. Such inaccurate depictions have shielded states from careful review of their implementation of lethal injection.

Within the past few years, however, growing skepticism over troublesome executions has dented this shield, as well as threatened the viability of the death penalty itself.[417] In response, a few states quickly organized commissions of experts in an attempt to review and possibly repair their lethal injection procedures. In both Florida and Ohio, for example, highly publicized botched executions served as the focal point for the states' appointed commissions.[418]

On the surface, these efforts seem like sensible solutions to lethal injection's problems. The commissions incorporate, for example, a number of the Human Rights Watch Report's recommendations to state and federal corrections agencies on improving lethal injection procedures. These include an effort to "[r]eview lethal injection protocols by soliciting input from medical and scientific experts, and by holding public hearings and seeking public comment."[419] While Florida assembled such a commission,[420] the haste in which its members were selected, organized, and prepared cast doubt on both the credibility and thoroughness of the final report released less than four months after Diaz was executed.[421] For example, the commission provided its testifying experts with very short notice of their role or the purpose of

[413] *See supra* note 83 and accompanying text.
[414] *See supra* note 155 and accompanying text.
[415] *See supra* note 168-170 and accompanying text.
[416] *See supra* note 96 and accompanying text.
[417] *See supra* notes 44-45 and accompanying text; *see also* Part IV.
[418] *See supra* note 93, 390 and accompanying text.
[419] *See* Human Rights Watch, *supra* note 130, at 7.
[420] *See supra* notes 386-390 and accompanying text.
[421] *See* Florida Commission Report, *supra* note 30.

their statements.[422] Such sporadically scheduled testimony and meetings, as well as comments from the public, ultimately resulted in the commission's hurriedly produced, sixteen-page report, which offered only a limited number of skeletal recommendations.[423]

Other states have fared even worse than Florida. For example, Ohio's "study" of the causes of its lethal injection botch resulted in a two-and-a-half page report.[424] In Ohio, only when a condemned inmate strapped to the gurney told the state – "It's not working"[425] – did department officials acknowledge their lethal injection procedures might be "broken."[426] It is doubtful that the procedures truly were "fixed" by the time Ohio executed its next inmate two months later.[427]

In early 2007, Tennessee provided a ninety-day moratorium and less than an hour of public hearings for its "quick fix" examination of its lethal injection procedures, which delegated all responsibility for the study to the corrections department.[428] In the Tennessee Governor's own words, the ninety-day review "would give the state time to correct 'sloppy cut and paste' execution proceedings that were 'full of deficiencies.'"[429] Yet, the Governor himself is mirroring the same kind of mistake he accuses the department of corrections making. The constrained time frame is "neither realistic nor responsible."[430] Accounts also indicate that no medical personnel spoke at the public hearings and there was no clear documentation that any attended.[431]

The criticism of Tennessee's approach and the sheer inadequacy of Ohio's method exemplify the built-in failures of attempted speedy resolutions. Overall, these states' efforts at examining lethal injection have been so limited in time and expertise, that their recommendations should carry no weight. Ironically, execution moratoria fuel these rushed and reckless assessments of lethal injection's problems and solutions because of the pressure to carry out the punishments. Regardless of the establishment of moratoria, states should conduct an extensive review.

In contrast to recent cursory studies of lethal injection, New York's nineteenth century approach to examining execution methods was far more thorough than any other ever attempted in this country since. The state's 1890 Commission spent two years carefully evaluating every execution method ever used, while also conducting a massive review of materials to prepare for a detailed evidentiary hearing on electrocution.[432] Given the medical complexity of lethal injection, modern attempts at studying execution methods are frivolous in comparison.

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[422] *See supra* note 391and accompanying text.
[423] *See generally* Florida Commission Report, *supra* note 30.
[424] *See* Letter from Terry J. Collins, director, Ohio Dep't of Rehabilitation and Corr., to Gov. Bob Taft (June 27, 2006).
[425] Adam Liptak, *Trouble Finding Inmate's Vein Slows Lethal Injection in Ohio*, N.Y. Times, May 3, 2006, at A16.
[426] *See* Letter from Terry J. Collins, director, Ohio Dep't of Rehabilitation and Corr., to Gov. Bob Taft (June 27, 2006).
[427] *See* Ohio Executions, http://www.drc.state.oh.us/web/Executed/executed25.htm (last visited Mar. 22, 2007).
[428] Sheila Burke, *Lawyers Doubt Quick Fix for Executions; State Says It Will be Set to Kill Workman May 9*, Tennessean, Apr. 6, 2007.
[429] Jared Allen, *90-Day Execution Review Unrealistic, Inadequate, Critics Say*, Nashville City Paper, Apr. 6, 2007.
[430] *Id.*
[431] *See id.*
[432] *See New York Commission Report, supra* note 50 and accompanying text.

There is also impressive precedent from mid-twentieth century Great Britain.[433] For example, the Royal Commission consisted of a group of the highest-ranking experts in the United Kingdom.[434] Over a five-year period, these experts produced a five-hundred page report considering all aspects of capital punishment, including a detailed assessment of execution methods, particularly lethal injection.[435]

With this perspective, the Royal Commission could make informed recommendations on how the country should proceed if in fact the death penalty would continue. For instance, highly respected medical societies participated in the review, even though they opposed their participation in executions.[436] The Commission took seriously expert medical input about the hazards and impracticalities of injection, but also believed that the medical profession's unwillingness to be involved only "magnified" the "consequences" of medicine's link to capital punishment and was not a reason for rejecting a particular execution method.[437] Indeed, the Commission favored another medical take the matter: The medical profession should view physician participation "as one of individual conscience, and not all doctors would feel debarred from giving instruction for such a purpose."[438]

Of course, one key factor of current analyses of lethal injection in the United States concerns physician participation. But this area is the most immersed in paradox. While the AMA Ethics Council derided physician involvement in executions, the Council also concedes that physicians can make executions more humane.[439] This stance bears on the Eighth Amendment because it brings some substantive contours to the "very narrow question" of whether a "lethal-injection protocol – as actually administered in practice – creates an undue and unnecessary risk that an inmate will suffer pain so extreme that it offends the Eighth Amendment?"[440] Without physician participation, is any pain an inmate experiences "unnecessary"? That question is one that demands the input of medical organizations, but they are loathe to provide it. As Judge Fogel noted in *Morales*, "the need for a person with medical training would appear to be inversely related to the reliability and transparency of the means for ensuring that the inmate is properly anesthetized . . . "[441]

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[433] *See supra* notes 69-77 and accompanying text.
[434] *See Royal Commission Report*, *supra* note 69, at 3.
[435] *See generally id.*
[436] *Id.* at 258. For example, the Commission quoted the view of the British Medical Association:

> "No medical practitioner should be asked to take part in bringing about the death of a convicted murderer. The Association would be most strongly opposed to any proposal to introduce, in place of judicial hanging, a method of execution which would require the services of a medical practitioner, either in carrying out the actual process of killing or in instructing others in the technique of the process."

Id.
[437] *Id.* at 259.
[438] *Id*. at 259. Such a view conforms to the finding of a recent survey of American physicians, in which nineteen percent of those physicians polled stated that they would be willing to participate in an execution, despite opposition from influential medical societies. *See* Neil J. Farber, et al., *Physicians' Willingness to Participate in Process of Lethal Injection for Capital Punishment*, 135 Ann. Intern. Med. 884, 886 (2001).
[439] *See supra* note 229 and accompanying text.
[440] Morales v. Tilton, 465 F. Supp.2d 972, 974 (N.D. Calif. 2006).
[441] *Id.*

While the medical associations can – and perhaps should – protest their involvement, most doctors are not even members of these organizations. A more thorough study might reveal the willingness of some doctors to participate – something the law does not prohibit. In turn, medical associations' participation in evaluations of lethal injection could give their arguments against it more credibility. As time has shown, the current hands-off strategy of medical associations has not worked. In addition to decrying medical participation in lethal injections, medical associations should accept the reality that some doctors do participate and work to solve the conflict, rather than contributing to it.

B. Increased Transparency of Lethal Injection Procedures

Of course, even the most thorough and comprehensive study would prove meaningless if its recommendations were not implemented properly. As Judge Fogel emphasized in *Morales*, "the reliability and transparency" of the injection process impacted the need to have medical personnel involved.[442] Such a philosophy need not be limited to medical involvement. It should be applied to every aspect of lethal injection.

Evidence shows that states currently do not follow even their vague protocols. Missouri's Dr. Doe altered the amount of sodium thiopental delivered. Ohio executioners failed to maintain the required dual IV lines. The Florida commission acknowledged that the execution team did not heed the state's existing guidelines for the delivery of chemicals. In California, state officials mislead the anesthesiologists about their role. And, in North Carolina, the state and participating doctor ignored a court-order to monitor the inmate's level of unconsciousness.[443]

Given such blatant disregard for existing procedures, states cannot be trusted to perform executions without oversight. States have withdrawn information in the face of challenges, reinforcing the belief that they lack the ability or willingness to conduct executions in line with constitutional mandates. As this author's study showed, in 2005, a disturbingly high number of states failed to provide public protocols, thereby hiding from public scrutiny how they execute. Even the mere delegation of execution procedures to corrections officials decreases their visibility.

Judge Fogel tried to improve transparency by placing the responsibility of lethal injection where it belonged – with the governor, an elected official.[444] Ironically, California's governor insisted in operating in complete secrecy in its protocol review, a request that Judge Fogel rightly denied.[445] Likewise, Florida's legislature recently promised greater oversight of the state's lethal

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[442] *Id.*

[443] *See supra* Part IV.

[444] Morales v. Tilton, 465 F. Supp.2d 972, 974 (N.D. Calif. 2006) (noting that the Governor's Office "is in the best position to insist on an appropriate degree of care and professionalism").

[445] *See* Order Denying without Prejudice Joint Motion for a Protective Order *Morales v. Tilton*, 06 219 JF RS, 06 926 JF RS (N.D. Cal. Mar. 6, 2007). Judge Fogel expected the state to file its revised protocol by May 15, 2007. *See id.* Ironically, the Department of Corrections and Rehabilitation attempted to build a new execution chamber in secret in 2007. *See* Henry Weinstein, *Arnold Kills Death Chamber Project at San Quentin*, L.A. Times, Apr. 20, 2007 (discussing Governor Arnold Schwarzenegger's decision to stop the construction).

injection procedure.[446] The state court decisions in Maryland and Kentucky struck at the heart of this matter, with inmates arguing that implementation regulations should be subject to public review.[447] Maryland found such review necessary; while the Kentucky court initially ruled in the same way, it then reversed itself, fearing that the focus of such proceedings would be the death penalty itself rather than the regulations for implementing lethal injection.[448]

Such public availability of execution procedures is critical, however, to ensuring the constitutionality of executions. And such transparency might also help resolve the conflict between law and medicine because society will start to take responsibility for implementing executions. Devoid of the distracting need to finger-point, law and medicine can work jointly, sharing communications and expertise to better understand how to "fix" the "broken" system.

CONCLUSION

On February 20, 2006, Michael Morales was hours away from execution when two anesthesiologists declined to participate in the lethal injection procedure. As Judge Fogel would later explain, there had been "'a disconnect'" between the anesthesiologists' and the courts' "expectations" of what the doctors' roles should be. This disconnect, however, went beyond one execution in California. The events surrounding Morales' impending fate brought to the surface the long-running schism between law and medicine, raising the question of whether any connection between the professions ever existed at all. History shows it never did. Decades of botched executions prove it.

Until states address this schism, instead of ignoring it, lethal injections will remain constitutionally vulnerable. Inmates will continue to challenge the implementation of the method; states will continue to make uninformed changes to ensure the death penalty survives. Only by conducting a thorough study of the method will society be able to know whether lethal injection can meet constitutional mandates.

[446] *See* Bill Kaczor, *Senators Says Lawmakers Will Monitor Lethal Injection Reforms*, Bradenton (Fla.) Herald, Mar. 28, 2007.
[447] *See supra* notes 405-06 and accompanying text.
[448] *See supra* note 406 and accompanying text.

APPENDIX

SOURCES FOR 2005 PROTOCOLS FOR 36 STATES

Alabama	Facsimile from Brian Corbett, Public Info. Officer, Alabama Dep't of Corr. to Daniel Auld, Research Assistant, Fordham Law School (June 15, 2005) (providing syringe preparation sheet with chemical names and quantities).
Arizona	Ariz. Dep't of Corr., Ariz. State Prison Complex—Florence, http://www.azcorrections.gov/prison/FlorenceHist.htm (containing information on Arizona's lethal injection procedures, including the chemicals) (on file with Fordham Law School); E-mail from Jill Berger, Executive Secretary II, Deputy Director's Office to Daniel Auld, Research Assistant, Fordham Law School (July 20, 2005) (stating Arizona's policy is restricted).
Arkansas	Facsimile from Dina Tyler, Public Info. Officer, Ark. Dep't of Corr. to Daniel Auld, Research Assistant, Fordham Law School (Arkansas procedure for execution) (June 16, 2005) (providing information on Arkansas's procedures with handwritten revisions).
California	Cal. Execution Proc.: Lethal Injection, Cal. Dep't of Corr., http://www.corr.ca.gov/CommunicationsOffice/CapitalPunishment/lethal_injection.asp (last visited June 15, 2005) (giving some details of California execution procedure); Telephone interview with Vernell Crittendon, Public Info. Officer, San Quentin (concerning California procedure).
Colorado	Colorado Capital Punishment in Colo., Colo. Dep't of Corr., http://www.doc.state.co.us/DeathRow/DeathRow.htm (last visited June 15, 2005) (detailing the procedure that occurs in Colorado on execution day and providing the chemical names); Telephone interview with Katherine Sanguinetti, Spokeswoman for Dep't of Corr. (July 1, 2005) (providing additional information on Colorado procedures).
Connecticut	State of Conn. Dep't of Corr. Pub. Defender's Admin. Directive 6.15 Administration of Capital Punishment (effective October 19, 2004); Telephone interview with Brian Garnett, Director of External Affairs (June 15, 2005) (providing additional information on Connecticut's execution procedure).
Delaware	Del. Dep't of Corr., http://www.state.de.us/deathp_history.html (providing Delaware's protocol) (last visited June 16, 2005); Telephone interview with Beth Welch, Del. Dep't of Corr., Chief of Media Relations (July 1, 2005).
Florida	Sims v. State, 754 So.2d. 657, 665 (Fla. 2000) (listing chemical information); Facsimile from Debbie Buchanaan, Bureau of Public Affairs to Daniel Auld, Research Assistant, Fordham Law School (June 16, 2005) (providing Florida's protocol with portions redacted).
Georgia	Letter from Rhoda S. McCabe, Senior Assistant Counsel, Ga. Dep't. of Corr., Legal Office (July 25, 2005) (containing information regarding Georgia's lethal injection procedures).
Idaho	E-mail from Melinda O'Malley Keckler in Public Info. Office to Daniel Auld, Fordham University School of Law (July 19, 2005) (stating that Idaho's information on lethal injection was confidential).
Illinois	Telephone interview with John Hosteny, Ill. Dep't of Corr., (July 13, 2005) (stating that the Illinois' procedure is confidential).
Indiana	Ind. Dep't Corr. Execution Process (containing information on chemicals, but not the quantities); Telephone interview with Barry Nothstine, Indiana State Prison (June 20, 2005).
Kansas	Facsimile from Frances Breyne, Public Info. Officer, Kan. Dep't of Corr. to Daniel Auld, Fordham Law School (July 19, 2005) (containing execution procedure).
Kentucky	Ky. Corr. Policy & Proc. 9.5 (effective Dec. 17, 1998); Letter from Jeff Middendorf, General Counsel (July 11, 2005) (listing chemical quantities for Kentucky).
Louisiana	Facsimile from Sara Calvert to Daniel Auld, Research Assistant, Fordham Law School (June 20, 2005) (containing Louisiana Dep't of Public Safety and Corr. Reg. C-03-001 Field Operations Death Penalty); Telephone interview with Deputy Warden Richard Peabody of Angola Penitentiary, Louisiana (July 19, 2005) (providing additional information about Louisiana's procedure).
Maryland	Facsimile from George Gregory, Public Info. Officer, to Daniel Auld, Research Assistant, Fordham Law School (Aug. 12, 2005) (containing Md. Dep't of Pub. Safety & Correctional Serv. Execution Operations Manual); E-mail from Tara Frazier, Commn's Officer, to Daniel Auld, Research Assistant, Fordham Law School (July 1, 2005) (denying request for Maryland's protocol).
Mississippi	E-mail from Tara Frazier, Communications Officer, Miss. Dep't of Corr., to Daniel Auld, Fordham University School of Law (July 19, 2005).
Missouri	Telephone interview with John Fougere, Chief Public Info. Officer (June 29, 2005).
Montana	Mont. Dep't of Corr., http://www.cor.state.mt.us/Facts/deathrow.asp, taken on June 25, 2005; Mont. State Prison Policies and Procedures, MSP 3.6.1, Execution (effective Feb. 5, 2001); Telephone interview with

	Linda Moodry, Public Info. Officer, Mont. State Prison (July 19, 2005).
Nevada	Telephone interview with Fritz Schlottman, Public Info. Officer (July 1, 2005) (stating that Nevada's protocol is confidential).
New Hampshire	E-mail from Jeffrey Lyons, Public Information Officer, sent to Daniel Auld, Fordham Law School (June 20, 2005) (stating that New Hampshire has no formal policy).
New Jersey	E-mail from Matthew Schuman, Spokesman for the Department of Corrections, sent to Daniel Auld, Fordham Law School (Aug. 3, 2005) (stating that the New Jersey's protocol is under revision).
New Mexico	Telephone interview with Keith Norwood, Deputy Warden, Penitentiary of New Mexico, Santa Fe (July 19, 2005) (stating that New Mexico's protocol had not changed since it was provided in 2001).
North Carolina	Facsimile from Pam Walker, Public Affairs Dir. to Daniel Auld, Fordham Law School (June 30, 2005) (containing Affidavit of Marvin L. Polk, Warden of Central Prison in Raleigh, N.C. (last visited Sept. 27, 2004); Execution Method, N.C. Dep't of Corr., http://www.doc.state.nc.us/DOP/deathpenalty/method.htm.
Ohio	Ohio Capital Punishment in Ohio, Ohio Dep't of Rehab. and Corr., http://www.drc.state.oh.us/public/capital.htm (last visited Mar. 22, 2005); Facsimile from Ohio Director's Office to Daniel Auld, Fordham Law School (June 29, 2005); Telephone interview with Andrea Dean, Commn's Chief, Director's Office (June 29, 2005) (answering questions about Ohio's protocol).
Oklahoma	Okla. Dep't of Corr., http://www.doc.state.ok.us/DOCS/CapitalP.HTM (last visited July 19, 2005).
Oregon	Or. Administrative Rules, Dep't of Corr., Div. 24: Capital Punishment, http://arcweb.sos.state.or.us/rules/OARS_200/OAR_291/291_024.html; Capital Punishment in Oregon, Dep't of Corr, Public Affairs, http://www.oregon.gov/DOC/PUBAFF/cap_punishment/cap_punishment.shtml (last visited June 28, 2005); Telephone interview with Perrin Damon, Commn's Manager (June 30, 2005); Telephone interview with Leigh Mann, Public Info. Officer (July 19, 2005).
Pennsylvania	Penn. Dep't of Corr., http://www.cor.state.pa.us/deathpenalty/site/default.asp?portalNav=%7C (last visited June 29, 2005); Telephone interview with Sue McNaughtan, Press Secretary (June 29, 2005).
South Carolina	No information provided.
South Dakota	S.D. Execution Guidelines, SDLC 23A-27A-15 to 23A-27A-41; Telephone interview with Michael Winder, Commn's & Info. Manager (July 20, 2005); Telephone interview with Ricky Bell, Warden, Riverbend Maximum Security Institution (June 30, 2005).
Tennessee	Tennessee Execution Process, Tenn. Dep't of Corr., http://www.state.tn.us/correction/newsreleases/executionprocess.html (last visited June 30, 2005); Telephone interview with Amanda Sluss, Commn's Officer (June 30, 2005).
Texas	E-mail from Susan Schumacher, Exec. Dir.'s Office, to Daniel Auld (Aug. 10, 2005) (providing chemical combination and quantities for Texas); Telephone interview with Jim Frazier, General Counsel's Office (Aug. 3, 2005).
Utah	Tom Anderson, *Capital Punishment and the Utah State Prison* (Jan. 15, 2004) (on file with author); Telephone Interview with Bruce Bailey, Records, Corrections Coordinator (Aug. 3, 2005).
Virginia	E-mail from Larry Traylor, Dir. of Commn's, Va. Dep't of Corr., to Daniel Auld, Fordham Law School (July 7, 2005).
Washington	Wash. Dep't of Corr., *The Washington State Death Penalty*, http://www.doc.wa.gov/deathpenalty.deathpnlty.htm (providing a broad description of execution process); Telephone interview with Laurie Scamahorn, Media Liaison, Wash. Dep't of Corr. (June 30, 2005).
Wyoming	Telephone interview with Melinda Brazzale, Public Info. Officer, Wyo. Dep't of Corr. (June 30, 2005) (explaining that the state did not have a protocol, but was developing one for an upcoming execution).