I. INTRODUCTION

On September 15, 2009, Ohio Governor Ted Strickland stopped the lethal injection of Romell Broom after state prison officials struggled for two hours to find a usable vein.1 The failed attempt to execute Romell Broom was Ohio’s third botched execution in as many years.2 On October 5, 2009, the Sixth Circuit Court of Appeals ordered the stay of death row inmate Lawrence Reynolds’ execution in response to the “serious and troubling difficulties” the State experienced in their recent lethal injection attempts.3 On November 30, 2009, Ohio became the first state to adopt a one-drug system of lethal injection to carry out death sentences.4 The newly adopted protocol utilizes a single lethal dose of an anesthetic, eliminating the use of two other drugs that are included in the common three-drug protocol other states use in their execution procedure.5

In 2008, the Supreme Court of the United States upheld a form of the three-drug lethal injection used by Kentucky in Baze v. Rees.6 The Court concluded that a method of execution violates the Eighth Amendment’s ban on cruel and unusual punishment only if it presents an “objectively intolerable risk of harm” or “substantial risk of serious harm.”7 Lethal
injection is the exclusive or primary means of execution in all thirty-six states that currently impose capital punishment and is the method used by the federal government.\textsuperscript{8} With the recent changes in execution procedure, Ohio became the first state to eliminate two of the drugs from the three-drug lethal injection protocol and carry out executions using only a single lethal dose of an anesthetic.\textsuperscript{9} Although Ohio’s new protocol resolves many of the issues addressed by the Court in \textit{Baze}, it remains to be seen whether the new system sufficiently addresses the inherent risks of administration, such that it will be safe from all future challenges.

First, this article focuses on the development of the Cruel and Unusual Punishment Clause of the Eighth Amendment through \textit{Baze}. Next, it reviews the debate raised in \textit{Baze} concerning the legislative decisions that resulted in a nationwide consensus on the three-drug lethal injection and the allegations that this consensus is the product of “administrative convenience.” The third section assesses the scientific and medical evidence presented in \textit{Baze} that supports the claim that the three-drug method presents a “substantial risk of serious harm.” Finally, the fourth section examines Ohio’s recent struggles with carrying out lethal injections using a form of the three-drug protocol and concludes with an analysis of whether the new one-drug procedure resolves these problems.

\section*{II. HISTORY OF THE EIGHTH AMENDMENT: THE PATH TO \textit{BAZE}}

\subsection*{A. Cruel and Unusual Punishment}

The United States Constitution’s Eighth Amendment provides that “[e]xcessive bail shall not be required, nor excessive fines imposed, nor cruel and unusual punishments inflicted.”\textsuperscript{10} The Cruel and Unusual Punishment Clause forbids federal agencies from imposing punishments of torture or “unnecessary cruelty,”\textsuperscript{11} and it is applicable to the states through the Fourteenth Amendment’s Due Process Clause.\textsuperscript{12} The phrase “cruel and unusual,” adopted from the English Bill of Rights of 1689,\textsuperscript{13} was included in the Eighth Amendment by American founders who were primarily

\begin{footnotes}
\item[8] \textit{Id.} at 1526–27.
\item[10] U.S. \textit{CONST.} amend. VIII.
\item[12] \textit{Baze}, 128 S. Ct. at 1529 (citing Robinson v. California, 370 U.S. 660, 666 (1962)).
\end{footnotes}
concerned with “barbarous” methods of punishment commonly used by colonial powers of the time.\textsuperscript{14}

On three occasions, the Supreme Court has considered the constitutionality of a specific method of execution.\textsuperscript{15} In 1876, the Court upheld the use of a firing squad to execute a convicted murderer in Wilkerson v. Utah.\textsuperscript{16} The Court acknowledged the difficulty of explicitly defining what constitutes cruel and unusual punishment, but noted that “it is safe to affirm that punishments of torture . . . and all others in the same line of unnecessary cruelty, are forbidden by [the Eighth Amendment].”\textsuperscript{17} The use of a firing squad to carry out a death sentence was common for military crimes, and the Court found ample authority to suggest that either shooting or hanging could be used to execute a convicted murderer.\textsuperscript{18}

In 1890, the Court heard a challenge to the use of the newly created electric chair in In Re Kemmler.\textsuperscript{19} The Court held that New York’s use of electrocution to carry out a death sentence was not cruel and unusual, concluding, “Punishments are cruel when they involve torture or a lingering death . . . [and] something more than the mere extinguishment of life.”\textsuperscript{20} The Court also noted that New York passed the statute authorizing the use of electrocution in an effort to devise the most humane method of execution.\textsuperscript{21} However, these statements were extraneous to the Court’s actual holding that the Eighth Amendment did not apply to the states.\textsuperscript{22}

In 1947, the Court considered a prisoner’s Eighth and Fourteenth Amendment challenges to a second attempt at electrocution in Louisiana ex rel. Francis v. Resweber.\textsuperscript{23} The petitioner was convicted of murder and sentenced to death by electrocution, but after a mechanical failure, he was removed from the chair and returned to prison.\textsuperscript{24} The plurality found that

\textsuperscript{14} Id. at 171.
\textsuperscript{15} Louisiana ex rel. Francis v. Resweber, 329 U.S. 459 (1947); In re Kemmler, 136 U.S. 436 (1890); Wilkerson, 99 U.S. 130.
\textsuperscript{16} 99 U.S. 130, 134–35 (1878).
\textsuperscript{17} Id. at 136.
\textsuperscript{18} Id. at 134–36.
\textsuperscript{19} 136 U.S. 436, 441 (1890).
\textsuperscript{20} Id. at 447.
\textsuperscript{21} Id.
\textsuperscript{22} Id. at 448–49 (holding that the enactment of the act was within the state’s legitimate sphere of the legislative power of the state and did not abridge any privilege or immunity of the petitioner).
\textsuperscript{23} 329 U.S. 460 (1947).
\textsuperscript{24} Id. at 460–61.
there was no constitutional violation because the Eighth Amendment imposes a “[p]rohibition against the wanton infliction of pain”\textsuperscript{25} and does not extend to protect against “the necessary suffering involved in any method employed to extinguish life humanely.”\textsuperscript{26} However, in a separate opinion, Justice Frankfurter noted that such a decision “involves the application of standards of fairness and justice very broadly conceived.”\textsuperscript{27} Although he concluded that the “innocent misadventure” in this case does not offend these standards, he noted that a hypothetical situation involving “a series of abortive attempts at electrocution or even a single, cruelly willful attempt” could invoke a different conclusion.\textsuperscript{28}

In each of these cases, the Court distinguished the execution procedures at issue from punishments of torture that sought to inflict unnecessary pain beyond the sentence of death.\textsuperscript{29} However, the decisions do not establish a clear standard for determining the constitutionality of a method of execution.\textsuperscript{30} They do establish that punishments designed to inflict pain are clearly cruel and unusual, but the clause has not solely been confined to punishments of torture. Rather, it “has been interpreted in a flexible and dynamic manner” that acquires meaning as public perceptions of decency and justice change over time.\textsuperscript{31} When assessing whether a punishment is cruel and unusual, the “evolving standards of decency” of our society guide the law.\textsuperscript{32} The Court decided the most recent of the three aforementioned cases over fifty years ago and the others over one hundred

\textsuperscript{25} Id. at 463.
\textsuperscript{26} Id. at 464.
\textsuperscript{27} Id. at 470 (Frankfurter, J., concurring).
\textsuperscript{28} Id. at 470–71.
\textsuperscript{29} Id. at 464 (“[A]n unforeseeable accident prevent[ing] the prompt consummation of the sentence cannot . . . add an element of cruelty to a subsequent execution.”); In re Kemmler, 136 U.S. 436, 447 (1890) (upholding an electrocution statute because the legislature passed it in an attempt to find the most humane method of execution available); Wilkerson v. Utah, 99 U.S. 130, 134–35 (1879) (distinguishing execution by firing squad from punishments where “terror, pain, or disgrace” were “superadded” to the sentence of death).
\textsuperscript{30} Baze, 128 S. Ct. at 1568.
years ago. The age of these opinions diminishes their utility in representing our contemporary values.

More recently, in 1992, the Court considered a challenge to California’s use of the gas chamber, but the Court did not review the case on its substantive merits and dismissed it on procedural grounds. The United States Court of Appeals for the Ninth Circuit issued an order to stay the execution of Robert Alton Harris, who then brought an action alleging that execution by lethal gas was cruel and unusual in violation of the Eighth Amendment. The State appealed the stay. The majority of the Court found that the prisoner could not avoid the application of McCleskey v. Zant and granted the State’s application to vacate the stay of execution.

Although the majority’s decision was without a consideration on the merits, the dissent argued, “[E]xecution by cyanide gas is both cruel and unusual, [and] violates contemporary standards of human decency.” In consideration of what we now know regarding execution by lethal gas, the majority’s decision may have effectively condemned the inmate to a tortuous death.

34 Baze, 128 S. Ct. at 1568 ( “Whatever little light our prior method-of-execution cases might shed is thus dimmed by the passage of time.”).
35 Gomez v. United States Dist. Court for N. Dist. Cal., 503 U.S. 653, 653 (1994) (holding that the claim should not be considered on the merits because there was “no convincing showing of cause for [inmate’s] failure to raise this claim in his [four] prior petitions”).
36 Id. at 658 (Stevens, J., dissenting).
37 See id.
38 499 U.S. 467, 467–68 (1991) (holding that petitioner bears the burden to show cause for the failure to raise a claim earlier when it appears for the first time in a second or subsequent habeas petition).
39 Gomez, 503 U.S. at 653–54.
40 Id.
41 Id. at 658 (Stevens, J., dissenting) (asserting that the gas chamber is no different than a medieval torture device designed to execute by strangulation).
42 See id. at 655–56; see also Deborah W. Denno, The Lethal Injection Quandary: How Medicine Has Dismantled the Death Penalty, 76 FORDHAM L. REV. 49, 63 (2007) (describing an execution after which “one reporter cried continuously, two other reporters were rendered walking vegetables for days, the attorney general ended up vomiting, and the prison warden claimed he would resign if forced to conduct another lethal gas execution.” (internal quotations omitted)).
B. Expanding the Framework: “Substantial Risk of Serious Harm”

In addition to the infliction of actual pain, the Eighth Amendment has also been interpreted to prohibit subjecting an individual to a risk of future harm.\(^{43}\) In *Helling v. McKinney*,\(^{44}\) the Court held that “deliberate indifference”\(^{45}\) to a “sufficiently imminent” risk of harm may be actionable under the Eighth Amendment, but only if exposure to such harm is “contrary to current standards of decency.”\(^{46}\) In this case, a Nevada state prisoner alleged that he was subjected to cruel and unusual punishment by being exposed to his cellmate’s second-hand tobacco smoke.\(^{47}\) The Court concluded that these conditions of confinement may violate the Eighth Amendment, but this requires an assessment of “whether society considers the risk . . . to be so grave that it violates contemporary standards of decency to expose anyone unwillingly to such a risk.”\(^{48}\) Therefore, to succeed on a claim challenging the conditions of confinement, a prisoner must not only demonstrate that the risk is objectively intolerable in light of these standards, but also that prison officials were deliberately indifferent to that risk.\(^{49}\)

The Court refined that holding in *Farmer v. Brennan*\(^{50}\) and held that disregarding a “substantial risk of serious harm” may violate the Eighth Amendment, but only when a prison official is subjectively aware of the risk.\(^{51}\) The prisoner in *Farmer* alleged that prison officials were “deliberately indifferent” in placing him in the general prison population, despite being aware that his transsexual identity would make him particularly vulnerable to sexual assault.\(^{52}\) The Supreme Court granted certiorari to settle the inconsistent tests for “deliberate indifference” that various courts of appeals had adopted.\(^{53}\) The Court held that the proper test for determining “deliberate indifference” is the criminal law standard for subjective recklessness.\(^{54}\) Therefore, to grant injunctive relief to

\(^{44}\) 509 U.S. 25 (1993).
\(^{46}\) Id. at 34–35.
\(^{47}\) Id. at 28.
\(^{48}\) Id. at 36.
\(^{49}\) Id. at 35.
\(^{50}\) 511 U.S. 825 (1994).
\(^{51}\) Id. at 828–29.
\(^{52}\) Id. at 830–31.
\(^{53}\) Id. at 832.
\(^{54}\) Id. at 839–40.
prevent a future risk of harm, petitioners must show a risk was “objectively intolerable,” so that prison officials could not plausibly claim they were not subjectively reckless in failing to address it.55

The risk of harm test has subsequently been used in deciding method of execution challenges, but without the intent requirement.56 Unlike prison condition cases, the subjective intent of prison officials is irrelevant in these challenges because they address the specific punishment sought to be imposed. Thus, an “objectively intolerable risk” inherent in a method of execution may offend the Eighth Amendment regardless of the humane intentions of the state officials imposing the punishment.

C. Baze v. Rees

Petitioners Ralph Baze and Thomas C. Bowling, each convicted of double homicide and sentenced to death, sued Kentucky state officials, alleging that the State’s lethal injection protocol violated the Eighth Amendment’s ban on cruel and unusual punishment.57

Kentucky’s lethal injection protocol called for the use of a three-drug combination to execute an inmate.58 The first drug, sodium thiopental, is a sedative intended to induce unconsciousness so that prisoners do not feel any pain from the injection of the second drug, pancuronium bromide, which paralyzes the diaphragm and stops respiration, or the third drug, potassium chloride, which induces cardiac arrest.59 The procedure requires that qualified personnel with at least one year of professional experience insert the intravenous catheters.60 The drugs are then remotely administered from a control room, while the warden and deputy warden remain in the execution chamber with the prisoner to visually inspect for unconsciousness before the second and third drugs are given.61 The petitioners in Baze alleged that there are certain inherent risks in this protocol, which could result in the second and third drugs being administered while they are still fully conscious.62 This would result in

55 Id. at 846 n.9.
56 E-mail from Dana Hansen Chavis, Assistant Federal Community Defender, Federal Defender Services of Eastern Tennessee, Inc. (Jan. 31, 2009) (on file with author); see also Aarons, supra note 32, at 461.
58 Id. at 1527.
59 Id.
60 Id. at 1528.
61 Id.
62 Id. at 1533.
“slow asphyxiation” from the pancuronium bromide and “burning and intense pain” as the potassium chloride circulates throughout the conscious inmate’s bloodstream.63

After extensive hearings, the trial court upheld the protocol, concluding that Kentucky’s procedure did not constitute cruel and unusual punishment within the meaning of the Constitution.64 On appeal, the Kentucky Supreme Court affirmed.65 The Supreme Court granted certiorari to determine whether Kentucky’s three-drug lethal injection protocol, a procedure followed by twenty-nine other states, satisfies the Eighth Amendment.66

The issue raised in Baze was whether the three-drug lethal injection procedure used in Kentucky poses a constitutionally unacceptable risk of severe pain amounting to cruel and unusual punishment.67 More specifically, the issue was whether there was a sufficient risk that the first drug would not take effect before the administration of the second and third drugs, causing an inmate to remain conscious, but unable to exhibit any signs of the excruciating pain they would experience.68 The petitioners contended that this was a substantial and unnecessary risk that can be “eliminated by adopting alternative procedures,” and that the failure to do so qualifies as cruel and unusual punishment.69

1. Plurality Holding and Rationale

The plurality opinion, delivered by Justice Roberts, held that the petitioners did not satisfy their burden of demonstrating that the risk of pain from improper administration of the lethal injection protocol amounted to cruel and unusual punishment.70 The plurality also ruled that Kentucky’s failure to adopt the petitioner’s proposed alternatives did not demonstrate that the State’s lethal injection protocol was cruel and unusual.71 Although seven Justices agreed with the judgment, only two

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63 Id. at 1567 (Ginsburg, J., dissenting).
64 Id. at 1526.
65 Id.
66 Id. at 1527–29.
67 Id. at 1530.
68 Id.
69 Id. at 1530–31.
70 Id. at 1526.
71 Id. at 1534.
Justices joined the plurality opinion and five delivered separate concurrences.72

The plurality began by noting that the constitutionality of the death penalty was not at issue in the case.73 Capital punishment has been deemed constitutional, and thus, “It necessarily follows that there must be a means of carrying it out.”74 Because there is an inherent risk of pain in any method of execution, the plurality reasoned “that the Constitution does not demand the avoidance of all risk of pain in carrying out executions.”75 However, the prison condition cases of Helling and Farmer established that subjecting an individual to a future risk of harm may also qualify as cruel and unusual punishment.76 As in Louisiana ex rel. Francis v. Resweber, the Court noted that there is always an inherent risk of an accident when carrying out an execution, but it violates the Eighth Amendment only if it is “an ‘objectively intolerable risk of harm’ that officials may not ignore.”77 Although not necessarily conclusive, the plurality noted, “[I]t is difficult to regard a practice as objectively intolerable when it is in fact widely tolerated.”78 This test requires an assessment of societal standards, and because “legislative judgment weighs heavily in ascertaining such standards,” there is “a heavy burden” on challenging a method chosen by elected representatives.79

According to the plurality, allowing a lesser standard, such as an “unnecessary risk” proposed by the petitioners or an “untoward risk” suggested by the dissent, would lead to endless litigation and “transform courts into boards of inquiry charged with determining ‘best practices’ for executions.”80 Therefore, the plurality held that a method of execution is cruel and unusual punishment if it presents a “substantial risk of serious harm.”81 In addition, a state’s refusal to adopt a proposed alternative

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72 Id. at 1524.
73 Id. at 1529 (citing Gregg v. Georgia, 428 U.S. 153, 177 (1976)).
74 Id.
75 Id.
77 Baze, 128 S. Ct. at 1531 (quoting Farmer, 511 U.S. at 846).
78 Id. at 1532 (internal quotations omitted).
79 Gregg v. Georgia, 428 U.S. 153, 175 (1976) (“[I]n assessing a punishment selected by a democratically elected legislature against the constitutional measure, we presume its validity.”); see discussion infra Part III.
80 Baze, 128 S. Ct. at 1531–32.
81 Id. at 1532 (quoting Farmer, 511 U.S. at 842).
procedure that is “feasible, readily implemented, and in fact significantly reduce[s] a substantial risk of severe pain” may also be “cruel and unusual” under the Eighth Amendment.\textsuperscript{82}

2. \textit{Concurrences}

Justice Alito’s concurrence cautioned that misapplication of the plurality’s holding or adoption of the dissent’s standard would create a danger of “litigation gridlock.”\textsuperscript{83} Proceeding on the assumption that lethal injection is constitutional, he stated that “the use of that method by the Federal Government and the States must not be blocked by procedural requirements that cannot practicably be satisfied.”\textsuperscript{84} Therefore, “Objections to features of a lethal injection protocol must be considered against the backdrop of the ethics rules of medical professionals and related practical restraints.”\textsuperscript{85} Justice Alito also opined that proving an alternative would “significantly reduce a substantial risk of pain” requires a “well-established scientific consensus” to show the kind of “deliberate indifference,” as seen in \textit{Farmer}, and not simply a few studies or expert opinions.\textsuperscript{86}

Justice Stevens argued that the decision will only generate further debate about the three-drug protocol.\textsuperscript{87} However, he joined the Court’s judgment because the petitioners failed to prove an Eighth Amendment violation under the established framework.\textsuperscript{88} Justice Stevens also voiced significant concern regarding the inclusion of pancuronium bromide and determined that the risks associated with its use do not justify the purposes of its inclusion.\textsuperscript{89} He noted that lethal injection protocols are generally designed and implemented by prison officials, and therefore, “their drug selections are not entitled to the kind of deference afforded legislative decisions.”\textsuperscript{90} Justice Stevens also remained skeptical towards the presumption of validity given to the protocols in general, stating that they

\textsuperscript{82} \textit{Id.}
\textsuperscript{83} \textit{Id.} at 1542 (Alito, J., concurring).
\textsuperscript{84} \textit{Id.} at 1539.
\textsuperscript{85} \textit{Id.} at 1540 (“[A] suggested modification . . . cannot be regarded as ‘feasible’ or ‘readily’ available if . . . [it] would require participation . . . [by medical professionals whose] ethics rules . . . [prohibit their involvement].”).
\textsuperscript{86} \textit{Id.} at 1540; see supra notes 52–54 and accompanying text.
\textsuperscript{87} \textit{Id.} at 1542–43 (Stevens, J., concurring).
\textsuperscript{88} \textit{Id.} at 1552.
\textsuperscript{89} \textit{Id.} at 1544; see discussion infra Part IV.B.
\textsuperscript{90} \textit{Id.} at 1545; see discussion infra Part III.
appear to be “a ‘stereotyped reaction’ to an issue, rather than a careful analysis of relevant considerations favoring or disfavoring a conclusion.”

Justice Thomas, joined by Justice Scalia, stated that “a method of execution violates the Eighth Amendment only if it is deliberately designed to inflict pain.” Justice Thomas argued that early commentators on the Eighth Amendment focused entirely on punishments that “were purposely designed to inflict pain and suffering beyond that necessary to cause death.” He concluded that the risk-based standards proposed by the petitioners and the dissenters have no support in history or legal precedent.

Finally, Justice Breyer’s concurring opinion accepted the dissent’s standard of review for a method of execution challenge, but reached the opposite conclusion and joined the judgment of the Court.

3. Dissent

Justice Ginsburg, joined by Justice Souter, argued that Kentucky’s protocol lacks basic safeguards to ensure an inmate is unconscious before the administration of the second and third drugs of the procedure. She argued that the standard for determining the constitutionality of a death penalty procedure should be whether it “poses an untoward, readily avoidable risk of inflicting severe and unnecessary pain.” She agreed with the plurality that “the degree of risk, magnitude of pain, and availability of alternatives” are the factors to be considered, but argued that there should not be a threshold test for the risk factor, and that “[t]he three factors are interrelated; a strong showing on one reduces the importance of the others.” Under this analysis, the dissent would have found that the lack of basic safeguards used by other states and the degree of pain a conscious inmate would experience warranted remanding the case for

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91 Id. (quoting Mathews v. Lucas, 427 U.S. 495, 519–21 (1976) (Stevens, J., dissenting)).
92 Id. at 1556 (Thomas, J., concurring).
93 Id. at 1557.
94 Id. at 1559–61 (emphasizing that the three method-of-execution cases heard by the Court distinguished the challenged methods from punishments of torture or unnecessary cruelty).
95 Id. at 1563 (Breyer, J., concurring).
96 Id. at 1567 (Ginsburg, J., dissenting).
97 Id.
98 Id. at 1568.
The plurality of the Court found that Kentucky’s lethal injection protocol was constitutional, based largely on the trial court’s findings of fact regarding the measures used by Kentucky to ensure proper administration of the protocol. The decision in Baze provides only a general framework of analysis that depends predominantly on the specific facts regarding a particular protocol and a state’s steps to properly administer that protocol.

D. Baze’s Eighth Amendment Framework

A method of execution is cruel and unusual if there is a “substantial risk of serious harm, [or] an objectively intolerable risk of harm that prevents prison officials from pleading that they were subjectively blameless for purposes of the Eighth Amendment.” Although accidents can occur in the administration of an execution, such “isolated mishaps” do not violate the Eighth Amendment precisely because they did not suggest cruelty, and the procedures at issue did not give rise to a “substantial risk of serious harm.”

Further, a showing of a “slightly or marginally safer alternative” to a challenged method of execution does not establish an actionable Eighth Amendment claim. Rather, the suggested alternative “must effectively address a substantial risk of serious harm” and not simply propose “one more step the State could take as a failsafe for other, independently adequate measures.” The alternative must be “feasible” and “readily implemented” in light of the practical constraints in place.

Although largely decided prior to the Baze decision, various federal courts have found certain, unconstitutional flaws present in specific lethal injection protocols that are illustrative of what could constitute a

99 Id. at 1569–72 (noting that elementary checks of consciousness, such as calling an inmate’s name, shaking the inmate, brushing an inmate’s eyelashes, or applying a noxious stimulus, are present in several other states’ protocols).
100 Id. at 1526.
101 See id. at 1542 (Stevens, J., concurring).
102 Id. at 1531 (citing Farmer v. Brennan, 511 U.S. 825, 846 (1994)) (internal quotations omitted).
103 Id.
104 Id. at 1532.
105 Id. at 1531.
106 Id. at 1537.
107 Id. at 1532.
108 Id. at 1540 (Alito, J., concurring).
“substantial risk of serious harm.” These flaws include: (1) the inclusion of pancuronium bromide or other paralytic drug;\textsuperscript{109} (2) the inclusion of sodium thiopental;\textsuperscript{110} (3) the lack of an anesthesiologist present during the execution;\textsuperscript{111} (4) the lack of resuscitation equipment on hand;\textsuperscript{112} or (5) a lack of specificity in the execution protocol.\textsuperscript{113} Although the Court has been reluctant to invalidate a state’s chosen method of execution, “[t]he broad framework of the Eighth Amendment has accommodated this progress toward more humane methods of execution.”\textsuperscript{114} This framework defers to the decisions of state legislatures to determine death penalty procedures that are the most humane.\textsuperscript{115} Some commentators have suggested, however, that these decisions are spurred by other considerations, rather than a desire to ensure a humane death.\textsuperscript{116} As the next section explores, the progress that led to the current consensus on lethal injection has lacked serious inquiry and is, often times, surprisingly haphazard.

III. THREE-DRUG LETHAL INJECTION: A NATIONWIDE CONSENSUS

A petitioner challenging a method of execution as cruel and unusual must meet the “heavy burden” of overcoming judicial deference to the legislative judgment of the states.\textsuperscript{117} The principal opinion in \textit{Baze} pointed out that the broad consensus on the three-drug combination as the preferred method of execution makes it difficult to regard the practice as “objectively intolerable.”\textsuperscript{118} However, in Justice Stevens’ dissenting opinion, he questioned the deference given to the states’ decisions, noting

\begin{footnotes}
\item[109] Harris v. Johnson, 323 F. Supp. 2d 797, 807 (S.D. Tex. 2004), \textit{vacated}, 376 F.3d 414, 415–16 (5th Cir. 2004) (holding that the claim was untimely).
\item[111] Morales v. Hickman, 438 F.3d 926, 930–31 (9th Cir. 2006).
\item[113] Taylor v. Crawford, 457 F.3d 902, 903–04 (8th Cir. 2006).
\item[114] \textit{Baze} v. Rees, 128 S. Ct. 1520, 1538 (“The firing squad, hanging, the electric chair, and the gas chamber have each in turn given way to more humane methods, culminating in today’s consensus on lethal injection.”).
\item[115] See id. at 1532–33.
\item[116] See infra text accompanying notes 128, 226.
\item[117] \textit{Baze}, 128 S. Ct. at 1533; see Gregg v. Georgia, 428 U.S. 153, 175 (1976) (“[I]n assessing a punishment selected by a democratically elected legislature against the constitutional measure, we presume its validity.”).
\item[118] \textit{Baze}, 128 S. Ct. at 1532.
\end{footnotes}
that “the trial court found that the various states simply fell in line behind Oklahoma, adopting the protocol without any critical analysis of whether it was the best available alternative.”

For much of American history, capital punishment was carried out by public hanging. The method required no central facility and enabled the public affected by the crime to view the punishment. Hangings became public spectacles that were sometimes attended by tens of thousands of people, including families with children. The public hanging imparted a moral message to the community regarding the consequences of crime. However, the public nature of a hanging also resulted in unruliness and occasional sympathy for the condemned.

In 1888, the Governor of New York assembled a commission to find “the most humane and practical method known to modern science of carrying into effect the sentence of death.” The commission decided on electrocution on the “well-grounded belief that electrocution is less painful and more humane than hanging.” However, some commentators have argued that the newly proposed method’s benefit was the removal of executions from the public eye, rather than considerations of a more dignified and less painful method of death. New York carried out the first execution by electrocution in 1890, but, contrary to the intentions of the legislature, the process was far from humane. Despite the initial failure and subsequent botches, New York electrocuted twenty-one people

119 Id. at 1545 (Stevens, J. dissenting) (internal quotations omitted).
121 Id.
122 Id. at 25.
123 Id. at 24 (“It was a powerful symbolic statement of the gravity of crime and its consequences.”).
125 See id. at 790–91 (2008).
127 Id. (quoting Malloy v. South Carolina, 237 U.S. 180, 185 (1915)).
128 See BANNER, supra note 120, at 184; Dieter, supra note 124, at 791–92; Denno, supra note 42, at 62.
129 CRAIG BRANDON, THE ELECTRIC CHAIR: AN UNNATURAL AMERICAN HISTORY 182 (1999) (“There is no doubt that Kemmler’s execution was botched. The current was cut off too soon and then, on the second application, left on so long that it burned his body.”).
by the end of 1893.130 By 1915, fourteen other states had followed suit.131 It remained the predominant method of execution for nearly a century, although hanging, firing squad, and lethal gas were also in use at one time.132

In the 1970s, states began to respond to public calls for a reexamination of the electric chair as a humane means to carry out death sentences.133 New York considered lethal injection as a method of execution after its 1888 study and six decades later after the publication of Great Britain’s Royal Commission on Capital Punishment, but both commissions rejected the method because of its links to medicine and necessity of medical skill to carry it out effectively.134 Despite the problems highlighted by these two studies and the considerable medical and scientific evidence gathered, Oklahoma adopted lethal injection in 1977.135

In her article tracing the origins and development of lethal injection, Deborah Denno argued that “concerns about cost, speed, aesthetics, and legislative marketability trumped any medical interest that the procedure would ensure a humane execution.”136 Accounts of Oklahoma’s adoption of lethal injection suggest that, at most, only two doctors were contributors to the method’s creation.137 Then Chief Medical Examiner for Oklahoma, A. Jay Chapman, was contacted by two politicians for his assistance in the development of a new execution method.138 Although Chapman first responded that he “was an expert in dead bodies but not an expert in getting them that way,” his recommendations formed the basis for the current three-drug protocol, and he is recognized as the major creator of lethal injection.139

130 BANNER, supra note 120, at 188.
131 Id. at 189.
132 Baze, 128 S. Ct. at 1526.
133 Denno, supra note 42, at 65.
134 Id. at 64.
135 Id. at 65.
136 Id.
137 Id.
138 Id. at 66.
139 Id. at 66–68.
Chapman originally intended each of the drugs to be lethal individually, with the combination providing redundancy. Dr. Stanley Deutsch, then Chairman of Anesthesiology at the Oklahoma University Medical School, arrived at a similar design. Both Chapman and Deutsch proposed the combination of a fast-acting barbiturate and a paralytic agent, but the third drug, potassium chloride, was added to the protocol later. After the lethal injection statute passed in the Oklahoma legislature, Chapman immediately warned of the dangers of improper administration. Many of these concerns have come to fruition. Recently, Chapman expressed doubt regarding the efficacy of the procedure, especially the fact that it is generally not performed by competent medical personnel.

Oklahoma adopted lethal injection on May 11, 1977, and Texas, Idaho, and New Mexico followed suit shortly thereafter. Within twenty-five years, thirty-seven states had adopted similar three-drug protocols. The pattern of adoption, “a fast-moving cascade of multistate clusters,” suggests the type of “administrative convenience” that Justice Stevens pointed out in his concurring opinion in Baze. As Stevens argued, the fact that a method has not been outlawed by Congress or state legislatures should not “be viewed as a nationwide endorsement of an unnecessarily dangerous practice.”

The history of the three-drug lethal injection protocol demonstrates that there was very little forethought in the adoption of a particular state’s method, other than copying existing statutes or protocols. Often, the specific guidelines for this rather intricate medical procedure were left up

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141 Id.
142 Id.
143 Denno, supra note 42, at 72.
144 Id. at 72–73.
145 Id. at 73.
146 Id. at 78.
147 Id.
149 Id. at 1545.
150 See supra text accompanying note 147.
to prison officials with no medical experience.\footnote{Baze, 128 S. Ct. at 1545 (Stevens, J., concurring) ("In the majority of States that use the three-drug protocol, the drugs were selected by unelected Department of Correction officials with no specialized medical knowledge and without the benefit of expert assistance or guidance.").} An examination of the history and development of lethal injection shows that these procedures were never scientifically or medically studied.\footnote{See, e.g., Denno, supra note 42, at 70; Ty Alper, Anesthetizing the Public Conscience: Lethal Injection and Animal Euthanasia, 35 Fordham Urb. L. J. 817, 834 (2008).} The next section explores the medical and scientific evidence presented to the Court in \textit{Baze} and assesses whether the potential problems rise to the level of a “substantial risk of serious harm.”

\textbf{IV. SCIENTIFIC AND MEDICAL STUDY OF LETHAL INJECTION}

Lethal injection was originally developed as a method of execution for its simplicity and fast-acting nature,\footnote{\textit{Baze}, 128 S. Ct. at 1527.} but current research has begun to reveal startling questions regarding the efficacy of this method. The petitioners in \textit{Baze} accepted that, if Kentucky’s protocol was properly administered, a humane death would result.\footnote{\textit{Id.} at 1526.} The general argument in a lethal injection claim, rather, is that there is a substantial risk that the procedure could not work properly, resulting in an extremely painful death.\footnote{\textit{Id.} at 1531.} Although at first glance it seems that this is simply another litigation tactic of death penalty opponents, an examination of lethal injection research reveals that these concerns regarding improper administration are very real, and the potential problems alleged in lethal injection challenges are not that uncommon.\footnote{See, e.g., Denno, supra note 42, at 109 (discussing how Missouri’s execution methods were declared unconstitutional when a written protocol could not be found, complete discretion was given to a single doctor in regards to changing protocol, and that doctor was not an actual anesthesiologist); \textit{id.} at 113 (explaining that a Florida execution lasted thirty-four minutes while the inmate squinted, grimaced, and attempted to speak due to a tissue infiltration in error rather than a proper intravenous injection); \textit{id.} at 114 (explaining that in 2007, the Tennessee governor acknowledged that lethal injection procedures in the State were extremely flawed).}
The specific details of execution protocols vary from state to state,\textsuperscript{157} but “[t]hirty states, as well as the Federal Government, use a series of sodium thiopental, pancuronium bromide, and potassium chloride, in varying amounts.”\textsuperscript{158} As the previous section illustrated, Oklahoma’s version of the three-drug lethal injection has served as the guideline for virtually every state that currently uses this method.\textsuperscript{159} Therefore, regardless of the variations of the protocol, certain identifiable risks are inherent in any administration of a three-drug lethal injection.

\textbf{A. Problems with the I.V.}

Lethal injection is often referred to as a three-drug “cocktail,”\textsuperscript{160} but this is slightly inaccurate because the drugs themselves are never mixed together.\textsuperscript{161} The term, “injection,” is also a bit misleading. Rather than a simple hypodermic needle, administration requires an I.V. line to be established with a saline drip, through which the drugs are successively administered to the inmate.\textsuperscript{162} The first drug, sodium thiopental, is intended to anesthetize the prisoner so that he does not experience the painful effects of the second and third drugs.\textsuperscript{163} If the prisoner is not completely anesthetized by the first drug, either by an inadequate dose or the I.V. missing the vein, “then the inmate would suffer the sensations of paralysis and suffocation induced by the pancuronium and intense burning, and cardiac arrest induced by the potassium chloride.”\textsuperscript{164}

An examination of California’s execution logs revealed that many inmates did not undergo cardiac arrest after being administered potassium chloride, and several required multiple injections.\textsuperscript{165} An analysis of data from North Carolina, which has employed three different versions of lethal injection,\textsuperscript{166} shows no difference in times of death between executions using potassium chloride and those that did not.\textsuperscript{167} These inconsistencies

\textsuperscript{158} \textit{Baze}, 128 S. Ct. at 1532.
\textsuperscript{159} Denno, \textit{supra} note 42, at 78–79.  
\textsuperscript{160} Alper, \textit{supra} note 152, at 818.
\textsuperscript{161} Id.
\textsuperscript{162} Id.
\textsuperscript{163} Id. at 818–19.
\textsuperscript{164} Zimmers & Koniaris, \textit{supra} note 140, at 921.
\textsuperscript{165} Id. at 928. 
\textsuperscript{166} Id.
\textsuperscript{167} Id.
reveal “that the assumptions underlying the lethal injection protocol that have been propagated in the non-scientific literature and in the courtroom are not supported by the literature, clinical veterinary practice, or the objective data collected in lethal injections in several states.”

Many of the risks of lethal injection arise from the potential problems associated with establishing and maintaining I.V. lines in the condemned inmate. The potential problems include:

[An] I.V. catheter [being] improperly inserted into a vein, or into the soft tissue; the I.V. catheter, though properly inserted into a vein, may migrate out of the vein; the vein injected may perforate, rupture, or otherwise leak; or, a retrograde injection may occur where the drug backs up into the tubing and deposits in the I.V. bag.

Lethal injection protocols generally provide for certain safeguards to address these risks. In Baze, the Court found that Kentucky’s protocol sufficiently protected against these risks by requiring members of the I.V. team to have at least one year of related professional experience and to participate in ten practice sessions per year, as well as requiring the establishment of both primary and backup I.V. lines.

The risks associated with establishing and maintaining I.V. lines are heightened by the fact that condemned inmates are sometimes chronic abusers of intravenous drugs. The resulting damage makes it even more difficult to find a suitable vein to establish an I.V., especially if non-medical personnel are attempting the procedure. In some cases, this

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168 Id. at 929.
169 State v. Rivera, No. 04CR065940, No. 05CR068067 at 3 (Ohio Ct. of Comm. Pl. June 10, 2008).
170 Id.
172 Id. at 1533–34.
173 See 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, 109–10 (2002) (noting that other conditions, including diabetes, heavily pigmented skin, obesity, or extreme muscularity, may also complicate the I.V. insertion process).
situation requires I.V. insertion in the leg or neck, or necessitates a “cut-down” incision to locate a suitable vein.\textsuperscript{175}

B. The Risk of Inadequate Anesthesia

Although the results of various scientific studies were presented in \textit{Baze}, the plurality simply noted that there was still dispute regarding some of the conclusions and stated that they did not wish to involve themselves in a debate beyond their expertise.\textsuperscript{176} However, according to the authors of the Lancet study, “the nature of the legal system does not permit open, objective scientific inquiry and debate in the manner that is provided by peer-review and publication.”\textsuperscript{177} Outside of the legal arena, the studies that the \textit{Baze} plurality deemed to be in dispute “provide strong evidence that the lethal injection protocol provides a substantial risk of inadequate anesthesia both due to failures of process, as well as problems in the protocol design itself.”\textsuperscript{178}

The study, published in the Lancet in 2005, presented a comprehensive collection and analysis of data collected from “freedom of information requests, open records requests, court testimony, interviews, and the public record.”\textsuperscript{179} According to the authors of the study, the following conclusions represented the major findings of their research: “(1) in many jurisdictions the execution personnel received no anesthesia or medical training; (2) drugs were administered remotely; (3) there was no monitoring for depth of anesthesia; (4) there was no review of outcomes; and (5) the protocol design contradicted veterinary practice.”\textsuperscript{180} The study examined the depth of anesthesia by the only available measure: testing the levels of thiopental in the blood samples taken after the deaths of executed inmates.\textsuperscript{181} Although this measure was admittedly problematic, the research found “extraordinary variability of thiopental levels across executions” and concluded that this “was consistent with the concerns regarding protocol design, credentials, and techniques employed.”\textsuperscript{182}

\textsuperscript{176} \textit{Baze}, 128 S. Ct. at 1531 n.2.
\textsuperscript{177} Zimmers & Koniaris, \textit{supra} note 140, at 929.
\textsuperscript{178} \textit{Id.} at 929.
\textsuperscript{179} \textit{Id.} at 923.
\textsuperscript{180} \textit{Id.} at 923 (citing Leonidas F. Koniaris et al., \textit{Inadequate Anaesthesia in Lethal Injection for Execution}, 365 \textit{Lancet} 1412, 1412–14 (April 16, 2005)).
\textsuperscript{181} \textit{Id.} at 924.
\textsuperscript{182} \textit{Id.}
Some commentators questioned the study’s use of “post-mortem thiopental levels,” and this was the source of the Baze Court’s conclusion that the results of this study were in dispute.\textsuperscript{183} These researchers asserted that the results were inaccurate because they were testing blood samples taken “several hours to days after” inmates’ deaths.\textsuperscript{184} Therefore, because the drug diffuses from the blood into tissue, the post-mortem concentrations are not accurate indicators of concentrations during life.\textsuperscript{185} The authors responded by stating that, although the methodology was admittedly problematic, “the unexpectedly low levels are consistent with other evidence that the anesthetic component may be inaccurate, including eyewitness reports of movement and apparent awareness.”\textsuperscript{186} In addition, the authors of the original study argued that the drug can actually diffuse from the tissue back into the blood after death, suggesting that post-mortem levels might actually be an overestimate of the levels at the time of execution.\textsuperscript{187} Although the Court was reluctant to accept scientific findings deemed to be in dispute, the authors asserted that “the Lancet paper has withstood three years of scrutiny in the scientific literature without having a single claim disproved or even substantively challenged.”\textsuperscript{188}

In a medical context, anesthesia is typically based upon body weight to ensure a proper dose and anesthetic depth.\textsuperscript{189} Lethal injection protocols typically call for a dose between two to five grams, an amount that is intended to be lethal.\textsuperscript{190} However, when calculated using a hypothetical body weight for the prisoner, a two-gram dose of thiopental actually overlaps with the recommended clinical range, which is clearly not supposed to be lethal.\textsuperscript{191} A further complication is that condemned inmates


\textsuperscript{184} Groner, \textit{supra} note 183, at 1073.

\textsuperscript{185} \textit{Id}.

\textsuperscript{186} Zimmers & Koniaris, \textit{supra} note 140, at 924–26 (citing Jamie Fellner & Sarah Toft, \textit{So Long as They Die: Lethal Injection in the United States}, 18 HUMAN RIGHTS WATCH 46 (April 2006)).

\textsuperscript{187} \textit{Id.} at 925 (citing Derrick J. Punder, \textit{The Nightmare of Postmortem Drug Changes, in Legal Medicine} 163–191 (C.H. Wecht ed. 1993); Groner, \textit{supra} note 183, at 1073.

\textsuperscript{188} Zimmers & Koniaris, \textit{supra} note 140, at 925.

\textsuperscript{189} \textit{Id.} at 926.


\textsuperscript{191} \textit{Id}.
are often chronic drug abusers.\textsuperscript{192} Past intravenous drug-use not only makes it more difficult to establish an I.V. line, but also it increases the likelihood that an inmate will be more resistant to the effects of thiopental.\textsuperscript{193} Likewise, an inmate’s fearful and anxious state will also increase the likelihood of resistance.\textsuperscript{194}

Early studies of lethal injection foresaw many of the recurring problems faced by the method today, but this research was largely ignored by its pioneers.\textsuperscript{195} As Deborah Denno stated, “The legal system relied on anesthesiology just enough to understand the concept of lethal injection, but not to account sufficiently for its barbarity when misapplied on human beings.”\textsuperscript{196}

\textbf{C. Preserving the Dignity or Masking the Pain?}

The inclusion of pancuronium bromide exacerbates the concerns over improper administration of lethal injection. Contrary to conventional wisdom and expert testimony, there is significant evidence that the cardiac arrest from potassium chloride may not cause death, but death “is likely effected by paralysis and asphyxiaton” from pancuronium bromide.\textsuperscript{197} Because pancuronium paralyzes the inmate, it masks any visible signs of an inmate suffering pain due to a “botched” execution.\textsuperscript{198} In fact, the use of the drug “virtually ensures that the execution looks ‘peaceful’ when it may have been anything but.”\textsuperscript{199}

States include pancuronium in their lethal injection procedures because of this paralyzing effect, as it spares witnesses and prison officials “the experience of seeing the twitching and gasping that sometimes accompanies even painless deaths.”\textsuperscript{200} In his \textit{Baze} concurrence, Justice Stevens concluded, “States wishing to decrease the risk that future litigation will delay executions or invalidate their protocols would do well to reconsider their continued use of pancuronium bromide.”\textsuperscript{201}

\begin{itemize}
\item \textsuperscript{192} See \textit{supra text accompanying note} 173.
\item \textsuperscript{193} Zimmers & Koniaris, \textit{supra note} 140, at 927.
\item \textsuperscript{194} \textit{Id}.
\item \textsuperscript{195} See \textit{supra text accompanying note} 143.
\item \textsuperscript{196} Denno, \textit{supra note} 42, at 63.
\item \textsuperscript{197} Zimmers & Koniaris, \textit{supra note} 140, at 928–29.
\item \textsuperscript{198} Alper, \textit{supra note} 152, at 819.
\item \textsuperscript{199} \textit{Id}.
\item \textsuperscript{200} \textit{Id}. at 822.
\item \textsuperscript{201} \textit{Baze v. Rees}, 128 S. Ct. 1520, 1546 (2008) (Stevens, J., concurring).
\end{itemize}
drug, but found that the interest in “preserving the dignity of the procedure” outweighed the concerns.\footnote{Id. at 1535.}

In an article comparing lethal injection to animal euthanasia practices, Ty Alper argued that this explanation demonstrates that “pancuronium is designed to maintain appearances at all costs,” and that it serves only to anesthetize “the public conscience.”\footnote{Alper, \textit{supra} note 152, at 833.} Alper found startling inconsistencies between the decisions to ban its use on animals and the continued inclusion of the drug in lethal injection protocol.\footnote{\textit{Id.} at 845–50.} The Baze Court also addressed this argument, which death penalty opponents frequently assert, that the use of paralytic agents is often explicitly or implicitly banned by states’ animal euthanasia regulation.\footnote{\textit{Baze}, 128 S. Ct. at 1535–36 (2008).} Therefore, advocates for death row inmates routinely cite to these laws in support of two main arguments: “first, that the veterinary community bans the use of paralytics in animal euthanasia for good reason, and second, that the veterinary community has, for many years, been using a safer, readily-available procedure that states have refused to adopt for human lethal injections.”\footnote{Alper, \textit{supra} note 152, at 821.} The plurality in \textit{Baze} argued that there is a less compelling concern of preventing “a prolonged, undignified death” in an animal context, and concluded “that veterinary practice for animals is not an appropriate guide to humane practices for humans.”\footnote{\textit{Baze}, 128 S. Ct. at 1535–36.} Yet, as Alper argued, the comparison of a particular drug’s effect on animals is routinely extrapolated to determine the effect on humans.\footnote{See, \textit{e.g.}, Zimmers & Koniaris, \textit{supra} note 140, at 927–28; Alper, \textit{supra} note 152, at 851.}

In defense of their policy to euthanize stray cats and dogs, the Humane Society of the United States maintains that the practice is “an absolute necessity.”\footnote{Alper, \textit{supra} note 152, at 851.} The credibility and sustainability of this policy is reinforced because it is done in the most humane and compassionate method available.\footnote{\textit{Id.} at 851–52.} Alper found a stark contrast between this approach and the states’ “aggressive defense” of the three-drug lethal injection method.\footnote{\textit{Id.} at 852.} He concluded:

\begin{itemize}
\item \footnote{Id. at 1535.}
\item \footnote{Alper, \textit{supra} note 152, at 833.}
\item \footnote{\textit{Id.} at 845–50.}
\item \footnote{\textit{Baze}, 128 S. Ct. at 1535–36 (2008).}
\item \footnote{Alper, \textit{supra} note 152, at 821.}
\item \footnote{\textit{Baze}, 128 S. Ct. at 1535–36.}
\item \footnote{See, \textit{e.g.}, Zimmers & Koniaris, \textit{supra} note 140, at 927–28; Alper, \textit{supra} note 152, at 851.}
\item \footnote{Alper, \textit{supra} note 152, at 851.}
\item \footnote{\textit{Id.} at 851–52.}
\item \footnote{\textit{Id.} at 852.}
\end{itemize}
The Humane Society mandates a method of euthanasia the primary benefit of which is that it is actually humane. The states, on the other hand, have clung to a method whose primary benefit is that it looks humane—but that in reality risks the unnecessary infliction of excruciating pain and suffering.212

The next section explores some of these scientific conclusions, as well as the constitutional standards established in Baze, in the context of Ohio’s recent struggles to properly administer its lethal injection protocol.

V. EXAMINING OHIO’S LETHAL INJECTION PROTOCOL

As of January 2010, there were 166 inmates on death row in Ohio.213 In response to the botched execution of Romell Broom, Governor Ted Strickland delayed three scheduled executions while the State conducted an extensive review of its three-drug lethal injection protocol.214 As a result of this review, Ohio adopted a one-drug execution process with a “back-up procedure” calling for an intramuscular injection when an intravenous line cannot be established.215 As of this writing, Ohio has carried out three executions under the newly adopted one-drug protocol without incident.216 Other states are closely watching Ohio’s experience with this untested procedure.217 With nine scheduled executions this year, and five more pending requests,218 Ohio faces a unique situation regarding these issues that warrants further examination into the current and future use of capital punishment in the State.

212 Id.
216 Welsh-Huggins, supra note 4.
217 Id.
218 Id.
A. Lethal Injection in Ohio

Since Ohio first became a state in 1803, capital punishment has been a part of its justice system. Executions were carried out by public hanging in the county where the crime was committed until 1885 when the State enacted a statute requiring executions to be carried out at the Ohio Penitentiary in Columbus. In 1897, the electric chair replaced hanging as Ohio’s method of execution. Between 1897 and 1963, Ohio electrocuted 315 prisoners.

In response to the nationwide trend towards the use of lethal injection as a more humane alternative to the problematic electric chair, in 1993 Ohio enacted a statute, which gave prisoners the option to choose between death by electrocution or lethal injection. The electric chair was eliminated as a form of execution in 2001, but this may not have been motivated by a desire to ensure a humane death. In fact, the timing of the measure suggests that its adoption was motivated by a fear of a major public relations embarrassment, resulting from a condemned prisoner’s request to be executed in the antiquated electric chair to protest the barbaric nature of the death penalty. Given what we now know about the effects of the electric chair, the decision, in addition to sparing the State potential embarrassment, may have spared the prisoner a tortuous death.

More recently, problems with Ohio’s three-drug lethal injection protocol became public following the May 2006 botched execution of

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219 Capital Punishment in Ohio, supra note 213; see David L. Hoeffel, Ohio’s Death Penalty: History and Current Developments, 31 CAP. U. L. REV. 659 (2003), for an interesting and more detailed account of Ohio’s death penalty history.

220 Capital Punishment in Ohio, supra note 213.

221 Id.

222 Id.

223 Hoeffel, supra note 219, at 666.

224 Capital Punishment in Ohio, supra note 213.

225 Id.

226 Hoeffel, supra note 219, at 685–86.

227 See, e.g., BRANDON, supra note 129, at 205–06 (“[T]he prisoner’s eyeballs sometimes pop out and rest on his cheeks. The prisoner often defecates, urinates, and vomits up blood and drool. The body turns bright red as its temperature rises and the prisoner’s flesh swells and his skin stretches to the point of breaking. Sometimes the prisoner catches on fire, particularly if he perspires excessively.”).
inmate Joseph Clark. The execution lasted an “unprecedented amount of time,” as the execution team struggled to establish an I.V. line in the inmate. The difficulties encountered may have been due to Clark’s past intravenous drug abuse. According to the Ohio Department of Rehabilitation and Corrections’ (ODRC) review of the procedure, only one needle site was established prior to Clark entering the execution chamber. However, after the process of delivering chemicals was initiated, the inmate lifted his head from the gurney, and repeatedly stated, “It don’t work.” The execution team found establishing another site “difficult and time-consuming,” but eventually they accomplished it, and they carried out the execution. Family members of Joseph Clark filed a federal lawsuit against the State of Ohio, alleging inadequate training and “deliberate indifference to the substantial risk of a problematic execution.” The complaint alleged that an autopsy of Clark found nineteen needle puncture wounds, as well as evidence of paravenous (outside the vein) injection of the lethal drugs. In response to this episode, the ODRC issued several recommendations, including eliminating time restraints for execution team members to complete their tasks, making every effort to establish two intravenous sites and using a low-pressure saline drip to maintain the I.V. line’s viability.

Despite the recommendations of the ODRC, one year later, Ohio botched another lethal injection. The May 2007 execution of inmate Christopher Newton lasted nearly two hours. Newton laughed at the execution team when they allowed him a bathroom break after more than

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229 Id.
231 Letter from Terry J. Collins, supra note 228.
232 Complaint at 5–6, Clark v. Voorhies, No. 1107CV510 (S.D. Ohio July 2, 2007); see also Dieter, supra note 124, at 812.
233 Letter from Terry J. Collins, supra note 228.
235 Id. at 6–7.
236 Letter from Terry J. Collins, supra note 228.
237 Denno, supra note 42, at 100.
an hour of attempting to establish an I.V. Witnesses later reported that Newton’s belly heaved when the execution team finally administered the lethal chemicals.

The difficulties encountered by Ohio prison officials in establishing access to a condemned inmate’s veins remain unresolved. Although Ohio executed six death row inmates without any reported incidents following Newton’s botched execution, the failed attempt to execute Romell Broom in September 2009 revealed once again that the issue of vein access is not going away.

B. Ohio’s Former Three-Drug Lethal Injection Protocol

Ohio’s capital punishment statute calls for “a lethal injection of a drug or combination of drugs of sufficient dosage to quickly and painlessly cause death.” This language proved significant in the consolidated cases of State v. Rivera and State v. McCloud. The trial judge ordered the State to discontinue the use of two drugs in their lethal injection protocol. He found that the protocol did not meet the demands of the Ohio capital punishment statute, because the phrase, “combination of drugs,” in the statute had permitted the use of substances that “create an unnecessary risk of causing an agonizing or an excruciatingly painful death.” The State charged each defendant with aggravated murder from two separate and unrelated cases and sought the death penalty. Through a pre-trial motion, the defendants asked the judge to remove the option of a death sentence, alleging that the way Ohio executed prisoners is unconstitutional.

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239 Id.
242 OHIO REV. CODE ANN. § 2949.22(A) (LexisNexis 2006) (emphasis added).
244 Id. at 8.
245 Id.
247 Id.
The ODRC released information regarding the former three-drug execution protocol because of this litigation.\(^{248}\) The released materials consisted of the Department’s guidelines for selection of the execution team, the results of the review conducted after the botched execution of Joseph Clark, internal memorandum concerning contingency planning for the 2006 execution of Darrell Ferguson, and responses to a general questionnaire regarding the execution protocol in general.\(^{249}\) The materials also included over 100 pages of ODRC policy statements dating back to 1994.\(^{250}\) The most recent statement of procedure went into effect in October 2006.\(^{251}\) This protocol reflects the revisions made to the protocol following the problems with Clark’s execution.

According to an ODRC policy statement, the intubation procedure occurs while the inmate remains in the holding cell.\(^{252}\) The policy requires the execution team to “make every effort” to establish two I.V. sites, with arm veins as the preferred location.\(^{253}\) The sites are established and maintained by “heparin locks” (catheters) that are then flushed with saline to ensure their viability.\(^{254}\) After escorting the inmate to the death chamber, the three lethal injection drugs are prepared in five different syringes.\(^{255}\) The protocol calls for two grams of sodium thiopental,\(^{256}\) 100 milligrams of pancuronium bromide, and 100 milliequivalents of potassium chloride.\(^{257}\) After reading the inmate’s death warrant and permitting his last words, the Warden and Execution Team Commander signal to the equipment room, where the team remotely administers the drugs.\(^{258}\) The Warden and Commander remain in the chamber to inspect the I.V. sites and visually assess the inmate’s consciousness after the sodium thiopental is injected.\(^{259}\) The I.V. lines are then flushed with saline


\(^{249}\) Id.

\(^{250}\) Id. at “Tab” 7–9.


\(^{252}\) Id. at 68.

\(^{253}\) Id.

\(^{254}\) Id.

\(^{255}\) Id.

\(^{256}\) Id.

\(^{257}\) Id.

\(^{258}\) Id. at 69.

\(^{259}\) See id. at 68–70.
before and between the injection of the second and third drugs.\textsuperscript{260} As the ODRC is now well aware, the performance of this protocol does not always go according to plan.\textsuperscript{261} Although the newly adopted protocol attempts to address many of these problems, the difficulty of establishing vein access still remains, and the untested nature of a one-drug or intramuscular injection may present new problems.

\textbf{C. Can Ohio’s New One-Drug Protocol Quickly and Painlessly Cause Death?}

In the consolidated cases of \textit{State v. Rivera} and \textit{State v. McCloud}, Judge James Burge held that the use of a combination of drugs for an execution could not meet the demands of Ohio’s capital punishment statute requiring a procedure that “quickly and painlessly” causes death.\textsuperscript{262} Judge Burge found that the inclusion of pancuronium bromide and potassium chloride were not necessary to cause death.\textsuperscript{263} In addition, their inclusion creates “an unnecessary risk of causing an agonizing or an excruciatingly painful death.”\textsuperscript{264}

Judge Burge concluded that the language of Ohio’s death penalty statute invokes an expectation that the procedure be “painless.”\textsuperscript{265} He also noted that the ethics rules of medical professionals preclude the participation of physicians, or even the sale of medical equipment used for the purpose of carrying out an execution.\textsuperscript{266} In addition, he found that mistakes are routinely made in the delivery of anesthesia, even in a clinical setting.\textsuperscript{267} In light of the fact that pancuronium bromide and potassium chloride “will cause an agonizing or excruciatingly painful death” without proper anesthesia, their inclusion in the protocol is inconsistent with the intent of the death penalty statute.\textsuperscript{268} Therefore, the Judge ordered that the language “or combination of drugs” be removed from section 2949.22 of the Ohio Revised Code, that the ORDC “eliminate the use of pancuronium bromide and potassium chloride from the lethal injection protocol,” and, if

\begin{itemize}
  \item \textsuperscript{260} \textit{Id.} at 69.
  \item \textsuperscript{261} \textit{See supra} text accompanying notes 228–36.
  \item \textsuperscript{262} \textit{State v. Rivera}, No. 04CR065940, No. 05CR068067, at 9 (Ohio Ct. Comm. Pl. June 10, 2008).
  \item \textsuperscript{263} \textit{Id.} at 7.
  \item \textsuperscript{264} \textit{Id.}
  \item \textsuperscript{265} \textit{Id.}
  \item \textsuperscript{266} \textit{Id.} at 3.
  \item \textsuperscript{267} \textit{Id.} at 4.
  \item \textsuperscript{268} \textit{Id.} at 3, 7.
\end{itemize}
the defendants are convicted and sentenced to death by lethal injection, the State should employ only a single anesthetic drug.269

Judge Burge’s findings proved to be prescient, as Ohio’s newly implemented lethal injection protocol reflects many of his recommendations.270 The new protocol eliminates the use of pancuronium bromide and potassium chloride, and instead, relies upon a single lethal dose of sodium thiopental.271 In addition, the protocol establishes a “back-up procedure” to address the State’s prior difficulties with establishing intravenous lines to inject the chemicals.272 When the execution team finds that an I.V. line cannot be established or maintained, the protocol allows for an intramuscular injection of ten milligrams of midazolam and forty milligrams of hydromorphone.273 Because of the untested nature of these new procedures, it is unclear whether their use may present new issues to be challenged. Intramuscular injection, in particular, has been labeled by some death penalty opponents as human experimentation because it has never been tried on humans before.274

Despite these questions, Ohio has executed three inmates under the one-drug lethal injection protocol and appears poised to carry out many more executions this year, potentially setting an annual record.275 Ohio’s first one-drug lethal injection was carried out on December 8, 2009 on inmate Kenneth Biros.276 Although the execution team took roughly thirty minutes to establish an I.V. line, the execution was completed without further incident.277 As of March 2010, two subsequent executions have also been performed under the new protocol without any documented problems.278

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269 Id. at 9.
270 Affidavit of Terry Collins, Cooey v. Taft, 2:04-cv-1156 (S.D. Ohio) (Frost, D.J.).
271 Id.
272 Id.
273 Id.
274 Ian Urbina, New Execution Method Is Used in Ohio, N.Y. TIMES, Dec. 9, 2009, at A18.
275 Welsh-Huggins, supra note 4.
276 Id.
277 Id.
278 Id.
D. Has Ohio Solved Its Lethal Injection Problems?

There are a substantial number of Ohio death row inmates eligible for execution dates.\textsuperscript{279} However, there were three well-publicized, botched executions in the last three years.\textsuperscript{280} Although the newly adopted one-drug protocol attempts to eliminate many of the recurring problems in the former procedure, it is unclear whether the State’s solution is constitutionally viable. The Supreme Court declined to intervene prior to Ohio’s first use of the one-drug procedure, but the argument remains that the new protocol is no longer “substantially similar” to the procedure reviewed by the Court in \textit{Baze}.\textsuperscript{281} The experimental nature of an intramuscular injection, and the lack of medical guidance in forming the new protocol, may also present issues that could be subject to future challenges.\textsuperscript{282} Competent defense attorneys will continue to present all of their available claims when the State goes to the extreme measure of taking a criminal’s life. It remains to be seen whether future litigation or scientific study will expose any unconstitutional risks in Ohio’s one-drug lethal injection protocol. Some have argued that the process of implementing the new protocol suffered from a lack of informed debate, and because the conclusions of the ODRC were accepted without question, the proceedings failed to satisfy due process requirements.\textsuperscript{283}

In light of these considerations, the Ohio legislature should appoint a commission to engage in a comprehensive study of the death penalty and the newly implemented procedure for executions. The Supreme Court’s decision in \textit{Baze} was limited to the particular protocol used in Kentucky, and therefore, did not provide conclusive answers to this debate. In the absence of legislative action, courts will “continue to fashion their own remedies on a case by case basis.”\textsuperscript{284} The legislative branch is in the best position to conduct an examination of the execution protocol in place and

\textsuperscript{279} See Reginald Fields, \textit{Executions Are Coming Too Fast, Official Says}, \textit{Cleveland Plain Dealer}, August 10, 2009, at A8 (stating that because of a backlog of cases and inmates sentenced in the 1980s and early 1990s are running out of appeal options, there is a substantial influx of inmates becoming eligible for execution dates).

\textsuperscript{280} See supra text accompanying notes 228–36.

\textsuperscript{281} Urbina, supra note 274.

\textsuperscript{282} Id.

\textsuperscript{283} Id.

\textsuperscript{284} Gaitan, supra note 174, at 788.
any viable alternatives.\textsuperscript{285} This kind of assessment will provide more
guidance for the courts in their determination of these issues.\textsuperscript{286}

According to a pleading filed by the State in the consolidated cases
before Judge Frost, significant efforts were undertaken to locate qualified
medical personnel who were willing to advise the State regarding
alternative approaches to the administration of lethal injection.\textsuperscript{287}
However, even with the enlisted help of five Ohio legislators, the State
could not find any medical professionals willing to participate because of
ethical and professional rules.\textsuperscript{288} The State’s pleading in \textit{Cooey, et. al. v.
Strickland, et. al.}\textsuperscript{289} revealed some of the other proposed methods that were
under consideration, but also the difficulty of weighing these options
without qualified expert assistance.\textsuperscript{290}

The one-drug lethal injection protocol and the back-up intramuscular
injection procedure may present new risks and problems of administration.
As such, a comprehensive reexamination of the execution protocol is
necessary to properly weigh the potential risks against the State’s interest
in effectively carrying out punishment, the victims’ interest in justice, and
the constitutional demands of our “evolving standards of decency.”\textsuperscript{291}

The change in Ohio’s execution protocol and procedures should be
implemented and performed as transparently as possible. Without a
publicly-available, written protocol, there is the potential for the State to
“abdicat[e] its responsibility to ensure that the execution of a given
defendant does not violate the Constitution.”\textsuperscript{292} The protocol should also

\begin{footnotes}
\item[285] Id.
\item[286] Id.
\item[287] Notice of Consideration by Defendants of Changes to Defendants’ Policies and
Procedures for the Execution of Condemned Prisoners, Richard Cooey v. Ted Strickland,
Case No. 2:04-cv-1156 (S.D. Ohio, Oct. 23, 2009) [hereinafter Notice of Consideration].
\item[288] Andrew Welsh-Huggins, \textit{Ohio Can’t Find Doctors to Offer Execution Advice,
\item[289] Notice of Consideration, \textit{supra} note 287.
\item[290] Id. at 2–3.
\item[291] \textit{See, e.g.}, Aarons, \textit{supra} note 32, at 443–45 (2008) (discussing the development of
the Supreme Court’s Eighth Amendment jurisprudence under the so-called “evolving
standards of decency” test). In 1958, the Supreme Court attempted to provide more
meaning to the Eighth Amendment’s prohibition of “cruel and unusual punishments and
“declared that the Eighth Amendment ‘must draw its meaning from the \textit{evolving standards
of decency} that mark the progress of a maturing society.’” \textit{Id.} (quoting Trop v. Dulles, 356
U.S. 86, 101 (1958)).
\item[292] Gaitan, \textit{supra} note 174, at 785.
\end{footnotes}
provide a measure of oversight over the administration of the execution procedure. The entire process would gain legitimacy by informing the public and the courts of the potential risks and the protections taken to guard against those risks.

VI. CONCLUSION

The opinions in *Baze* repeatedly stated that, despite the Court’s refusal to declare a method of execution unconstitutional, states have continued to adopt more humane methods of carrying out capital punishment. This trend can also be seen as a movement away from the public spectacles of nineteenth century hangings to state-controlled facilities away from the public eye, where the details regarding the protocols are often kept confidential and revealed only when compelled by a court. The inclusion of pancuronium bromide in the common three-drug regimen only further reinforces this secrecy by masking any outward signs of distress or extreme pain that an inmate may feel. As Federal District Judge Fernando Gaitan, Jr. stated, “[W]e cannot expect a public’s standards to evolve if the public is unaware of what procedures are actually performed upon the condemned.” Despite the trend of taking capital punishment away from the public’s conscience, recent challenges to execution procedures and the highly publicized botches of executions in Ohio have revealed that the modern lethal injection protocol may be constitutionally vulnerable.

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293 Id. at 784–86 (encouraging transparency and oversight in state protocols for performing executions).

294 *Baze* v. Rees, 128 S. Ct. 1520, 1538 (2008) (“The firing squad, hanging, the electric chair, and the gas chamber have each in turn given way to more humane methods, culminating in today’s consensus on lethal injection.”).

295 See *Banner*, supra note 120, at 168 (“[W]ith executions conducted behind closed doors, before a small group of the well connected, out of the public eye, the people [are] no longer punishing the criminal. Now the government [is] doing the punishing, and the people [are] reading about it later.” (emphasis in original)); see also *Capital Punishment in Ohio*, supra note 213 (discussing the evolution of capital punishment procedures in Ohio).

296 See, e.g., Gaitan, *supra* note 174, at 786 (“[T]o [make] public as many details of the executions as possible, so that the condemned can know what to expect and the public can know what the state is doing.”); Denno, *supra* note 42, at 121–23 (“States’ agencies have the ability to change protocols without informing the public, and often information about protocols is not subject to state freedom of information laws.”).

297 See discussion *supra* Part IV.C.

It remains to be seen whether Ohio’s new protocol is safe from future constitutional challenge, or whether it simply repeats the mistakes of past changes to the State’s execution procedure. The patchwork recommendations offered by the ODRC after the botched execution of Joseph Clark did not eliminate the flaws in Ohio’s lethal injection protocol. The same problems occurred during Christopher Newton’s execution one year later and arose once again in the most recent botched execution of Romell Broom. It is unclear whether the new protocol has sufficiently addressed the risks. By engaging in a comprehensive study of the one-drug protocol and by explicitly defining its execution procedures statutorily, Ohio will take an important step to ensure that, if the State takes a life, it is taking a life justly.

299 See supra text accompanying notes 228–233.
300 See supra text accompanying note 238.
301 See supra text accompanying note 241.