SUPREME COURT OF THE UNITED STATES

No. 07–5439

RALPH BAZE AND THOMAS C. BOWLING, PETITIONERS *v.* JOHN D. REES, COMMISSIONER, KENTUCKY DEPARTMENT OF CORRECTIONS, ET AL.

ON WRIT OF CERTIORARI TO THE SUPREME COURT OF KENTUCKY

[April 16, 2008]

CHIEF JUSTICE ROBERTS announced the judgment of the Court and delivered an opinion, in which JUSTICE KENNEDY and JUSTICE ALITO join.

Like 35 other States and the Federal Government, Kentucky has chosen to impose capital punishment for certain crimes. As is true with respect to each of these States and the Federal Government, Kentucky has altered its method of execution over time to more humane means of carrying out the sentence. That progress has led to the use of lethal injection by every jurisdiction that imposes the death penalty.

Petitioners in this case—each convicted of double homicide—acknowledge that the lethal injection procedure, if applied as intended, will result in a humane death. They nevertheless contend that the lethal injection protocol is unconstitutional under the Eighth Amendment's ban on "cruel and unusual punishments," because of the risk that the protocol's terms might not be properly followed, resulting in significant pain. They propose an alternative proto-

col, one that they concede has not been adopted by any State and has never been tried.

The trial court held extensive hearings and entered detailed Findings of Fact and Conclusions of Law. It recognized that "[t]here are no methods of legal execution that are satisfactory to those who oppose the death penalty on moral, religious, or societal grounds," but concluded that Kentucky's procedure "complies with the constitutional requirements against cruel and unusual punishment." App. 769. The State Supreme Court affirmed. We too agree that petitioners have not carried their burden of showing that the risk of pain from maladministration of a concededly humane lethal injection protocol, and the failure to adopt untried and untested alternatives, constitute cruel and unusual punishment. The judgment below is affirmed.

I

A

By the middle of the 19th century, "hanging was the 'nearly universal form of execution' in the United States." *Campbell* v. *Wood*, 511 U. S. 1119 (1994) (Blackmun, J., dissenting from denial of certiorari) (quoting *State* v. *Frampton*, 95 Wash. 2d 469, 492, 627 P. 2d 922, 934 (1981)); Denno, Getting to Death: Are Executions Constitutional? 82 Iowa L. Rev. 319, 364 (1997) (counting 48 States and Territories that employed hanging as a method of execution). In 1888, following the recommendation of a commission empaneled by the Governor to find "'the most humane and practical method known to modern science of carrying into effect the sentence of death,'" New York became the first State to authorize electrocution as a form of capital punishment. *Glass* v. *Louisiana*, 471 U. S. 1080, 1082, and n. 4 (1985) (Brennan, J., dissenting from denial of certiorari); Denno, *supra*, at 373. By 1915, 11 other States had followed suit, motivated by the "well-grounded

belief that electrocution is less painful and more humane than hanging." *Malloy* v. *South Carolina*, 237 U. S. 180, 185 (1915).

Electrocution remained the predominant mode of execution for nearly a century, although several methods, including hanging, firing squad, and lethal gas were in use at one time. Brief for Fordham University School of Law et al. as *Amici Curiae* 5–9 (hereinafter Fordham Brief). Following the 9-year hiatus in executions that ended with our decision in *Gregg* v. *Georgia*, 428 U. S. 153 (1976), however, state legislatures began responding to public calls to reexamine electrocution as a means of assuring a humane death. See S. Banner, The Death Penalty: An American History 192–193, 296–297 (2002). In 1977, legislators in Oklahoma, after consulting with the head of the anesthesiology department at the University of Oklahoma College of Medicine, introduced the first bill proposing lethal injection as the State's method of execution. See Brief for Petitioners 4; Fordham Brief 21–22. A total of 36 States have now adopted lethal injection as the exclusive or primary means of implementing the death penalty, making it by far the most prevalent method of execution in the United States.[1] It is also the method used by the

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[1] Twenty-seven of the 36 States that currently provide for capital punishment require execution by lethal injection as the sole method. See Ariz. Rev. Stat. Ann. §13–704 (West 2001); Ark. Code Ann. §5–4–617 (2006); Colo. Rev. Stat. Ann. §18–1.3–1202 (2007); Conn. Gen. Stat. §54–100 (2007); Del. Code Ann., Tit. 11, §4209 (2006 Supp.); Ga. Code Ann. §17–10–38 (2004); Ill. Comp. Stat., ch. 725, §5/119–5 (West 2006); Ind. Code §35–38–6–1 (West 2004); Kan. Stat. Ann. §22–4001 (2006 Cum. Supp.); Ky. Rev. Stat. Ann. §431.220 (West 2006); La. Stat. Ann. §15:569 (West 2005); Md. Crim. Law Code Ann. §2–303 (Lexis Supp. 2007); Miss. Code Ann. §99–19–51 (2007); Mont. Code Ann. §46–19–103 (2007); Nev. Rev. Stat. §176.355 (2007); N. J. Stat. Ann. §2C:49–2 (West 2007) (repealed Dec. 17, 2007); N. M. Stat. Ann. §31–14–11 (2000); N. C. Gen. Stat. Ann. §15–187 (Lexis 2007); N. Y. Correc. Law Ann. §658 (West 2003) (held unconstitutional in *People* v. *LaValle*, 3 N. Y. 3d

Federal Government. See 18 U. S. C. §3591 *et seq.* (2000 ed. and Supp. V); App. to Brief for United States as *Amicus Curiae* 1a–6a (lethal injection protocol used by the Federal Bureau of Prisons).

Of these 36 States, at least 30 (including Kentucky) use the same combination of three drugs in their lethal injection protocols. See *Workman* v. *Bredesen*, 486 F. 3d 896, 902 (CA6 2007). The first drug, sodium thiopental (also known as Pentathol), is a fast-acting barbiturate sedative that induces a deep, comalike unconsciousness when given in the amounts used for lethal injection. App. 762–763, 631–632. The second drug, pancuronium bromide (also

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88, 130–131, 817 N. E. 2d 341, 367 (2004)); Ohio Rev. Code Ann. §2949.22 (Lexis 2006); Okla. Stat., Tit. 22, §1014 (West 2001); Ore. Rev. Stat. §137.473 (2003); Pa. Stat. Ann., Tit. 61, §3004 (Purdon 1999); S. D. Codified Laws §23A–27A–32 (Supp. 2007); Tenn. Code Ann. §40–23–114 (2006); Tex. Code Crim. Proc. Ann., Art. 43.14 (Vernon 2006 Supp. Pamphlet); Utah Code Ann. §77–18–5.5 (Lexis Supp. 2007); Wyo. Stat. Ann. §7–13–904 (2007). Nine States allow for lethal injection in addition to an alternative method, such as electrocution, see Ala. Code §§15–18–82 to 82.1 (Supp. 2007); Fla. Stat. §922.105 (2006); S. C. Code Ann. §24–3–530 (2007); Va. Code Ann. §53.1–234 (Lexis Supp. 2007), hanging, see N. H. Rev. Stat. Ann. §630:5 (2007); Wash. Rev. Code §10.95.180 (2006), lethal gas, see Cal. Penal Code Ann. §3604 (West 2000); Mo. Rev. Stat. §546.720 (2007 Cum. Supp.), or firing squad, see Idaho Code §19–2716 (Lexis 2004). Nebraska is the only State whose statutes specify electrocution as the sole method of execution, see Neb. Rev. Stat. §29–2532 (1995), but the Nebraska Supreme Court recently struck down that method under the Nebraska Constitution, see *State* v. *Mata*, No. S–05–1268, 2008 WL 351695, *40 (2008).

Although it is undisputed that the States using lethal injection adopted the protocol first developed by Oklahoma without significant independent review of the procedure, it is equally undisputed that, in moving to lethal injection, the States were motivated by a desire to find a more humane alternative to then-existing methods. See Fordham Brief 2–3. In this regard, Kentucky was no different. See *id.*, at 29–30 (quoting statement by the State Representative who sponsored the bill to replace electrocution with lethal injection in Kentucky: "if we are going to do capital punishment, it needs to be done in the most humane manner" (internal quotation marks omitted)).

known as Pavulon), is a paralytic agent that inhibits all muscular-skeletal movements and, by paralyzing the diaphragm, stops respiration. *Id.,* at 763. Potassium chloride, the third drug, interferes with the electrical signals that stimulate the contractions of the heart, inducing cardiac arrest. *Ibid.* The proper administration of the first drug ensures that the prisoner does not experience any pain associated with the paralysis and cardiac arrest caused by the second and third drugs. *Id.,* at 493–494, 541, 558–559.

B

Kentucky replaced electrocution with lethal injection in 1998. 1998 Ky. Acts ch. 220, p. 777. The Kentucky statute does not specify the drugs or categories of drugs to be used during an execution, instead mandating that "every death sentence shall be executed by continuous intravenous injection of a substance or combination of substances sufficient to cause death." Ky. Rev. Stat. Ann. §431.220(1)(a) (West 2006). Prisoners sentenced before 1998 have the option of electing either electrocution or lethal injection, but lethal injection is the default if—as is the case with petitioners—the prisoner refuses to make a choice at least 20 days before the scheduled execution. §431.220(1)(b). If a court invalidates Kentucky's lethal injection method, Kentucky law provides that the method of execution will revert to electrocution. §431.223.

Shortly after the adoption of lethal injection, officials working for the Kentucky Department of Corrections set about developing a written protocol to comply with the requirements of §431.220(1)(a). Kentucky's protocol called for the injection of 2 grams of sodium thiopental, 50 milligrams of pancuronium bromide, and 240 milliequivalents of potassium chloride. In 2004, as a result of this litigation, the department chose to increase the amount of sodium thiopental from 2 grams to 3 grams. App. 762–

763, 768. Between injections, members of the execution team flush the intravenous (IV) lines with 25 milligrams of saline to prevent clogging of the lines by precipitates that may form when residual sodium thiopental comes into contact with pancuronium bromide. *Id.,* at 761, 763–764. The protocol reserves responsibility for inserting the IV catheters to qualified personnel having at least one year of professional experience. *Id.,* at 984. Currently, Kentucky uses a certified phlebotomist and an emergency medical technician (EMT) to perform the venipunctures necessary for the catheters. *Id.,* at 761–762. They have up to one hour to establish both primary and secondary peripheral intravenous sites in the arm, hand, leg, or foot of the inmate. *Id.,* at 975–976. Other personnel are responsible for mixing the solutions containing the three drugs and loading them into syringes. *Id.*, at 761.

Kentucky's execution facilities consist of the execution chamber, a control room separated by a one-way window, and a witness room. *Id.*, at 203. The warden and deputy warden remain in the execution chamber with the prisoner, who is strapped to a gurney. The execution team administers the drugs remotely from the control room through five feet of IV tubing. *Id.,* at 286. If, as determined by the warden and deputy warden through visual inspection, the prisoner is not unconscious within 60 seconds following the delivery of the sodium thiopental to the primary IV site, a new 3-gram dose of thiopental is administered to the secondary site before injecting the pancuronium and potassium chloride. *Id.,* at 978–979. In addition to assuring that the first dose of thiopental is successfully administered, the warden and deputy warden also watch for any problems with the IV catheters and tubing.

A physician is present to assist in any effort to revive the prisoner in the event of a last-minute stay of execution. *Id.,* at 764. By statute, however, the physician is

prohibited from participating in the "conduct of an execution," except to certify the cause of death. Ky. Rev. Stat. Ann. §431.220(3). An electrocardiogram (EKG) verifies the death of the prisoner. App. 764. Only one Kentucky prisoner, Eddie Lee Harper, has been executed since the Commonwealth adopted lethal injection. There were no reported problems at Harper's execution.

C

Petitioners Ralph Baze and Thomas C. Bowling were each convicted of two counts of capital murder and sentenced to death. The Kentucky Supreme Court upheld their convictions and sentences on direct appeal. See *Baze* v. *Commonwealth*, 965 S. W. 2d 817, 819–820, 826 (1997), cert. denied, 523 U. S. 1083 (1998); *Bowling* v. *Commonwealth*, 873 S. W. 2d 175, 176–177, 182 (1993), cert. denied, 513 U. S. 862 (1994).

After exhausting their state and federal collateral remedies, Baze and Bowling sued three state officials in the Franklin Circuit Court for the Commonwealth of Kentucky, seeking to have Kentucky's lethal injection protocol declared unconstitutional. After a 7-day bench trial during which the trial court received the testimony of approximately 20 witnesses, including numerous experts, the court upheld the protocol, finding there to be minimal risk of various claims of improper administration of the protocol. App. 765–769. On appeal, the Kentucky Supreme Court stated that a method of execution violates the Eighth Amendment when it "creates a substantial risk of wanton and unnecessary infliction of pain, torture or lingering death." 217 S. W. 3d 207, 209 (2006). Applying that standard, the court affirmed. *Id.*, at 212.

We granted certiorari to determine whether Kentucky's lethal injection protocol satisfies the Eighth Amendment. 551 U. S. ___ (2007). We hold that it does.

II

The Eighth Amendment to the Constitution, applicable to the States through the Due Process Clause of the Fourteenth Amendment, see *Robinson* v. *California*, 370 U. S. 660, 666 (1962), provides that "[e]xcessive bail shall not be required, nor excessive fines imposed, nor cruel and unusual punishments inflicted." We begin with the principle, settled by *Gregg*, that capital punishment is constitutional. See 428 U. S., at 177 (joint opinion of Stewart, Powell, and STEVENS, JJ.). It necessarily follows that there must be a means of carrying it out. Some risk of pain is inherent in any method of execution—no matter how humane—if only from the prospect of error in following the required procedure. It is clear, then, that the Constitution does not demand the avoidance of all risk of pain in carrying out executions.

Petitioners do not claim that it does. Rather, they contend that the Eighth Amendment prohibits procedures that create an "unnecessary risk" of pain. Brief for Petitioners 38. Specifically, they argue that courts must evaluate "(a) the severity of pain risked, (b) the likelihood of that pain occurring, and (c) the extent to which alternative means are feasible, either by modifying existing execution procedures or adopting alternative procedures." *Ibid.* Petitioners envision that the quantum of risk necessary to make out an Eighth Amendment claim will vary according to the severity of the pain and the availability of alternatives, Reply Brief for Petitioners 23–24, n. 9, but that the risk must be "significant" to trigger Eighth Amendment scrutiny, see Brief for Petitioners 39–40; Reply Brief for Petitioners 25–26.

Kentucky responds that this "unnecessary risk" standard is tantamount to a requirement that States adopt the "'least risk'" alternative in carrying out an execution, a standard the Commonwealth contends will cast recurring constitutional doubt on any procedure adopted by the

States. Brief for Respondents 29, 35. Instead, Kentucky urges the Court to approve the "'substantial risk'" test used by the courts below. *Id.*, at 34–35.

A

This Court has never invalidated a State's chosen procedure for carrying out a sentence of death as the infliction of cruel and unusual punishment. In *Wilkerson* v. *Utah*, 99 U. S. 130 (1879), we upheld a sentence to death by firing squad imposed by a territorial court, rejecting the argument that such a sentence constituted cruel and unusual punishment. *Id.*, at 134–135. We noted there the difficulty of "defin[ing] with exactness the extent of the constitutional provision which provides that cruel and unusual punishments shall not be inflicted." *Id.*, at 135–136. Rather than undertake such an effort, the *Wilkerson* Court simply 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. *Id.*, at 136. By way of example, the Court cited cases from England in which "terror, pain, or disgrace were sometimes superadded" to the sentence, such as where the condemned was "embowelled alive, beheaded, and quartered," or instances of "public dissection in murder, and burning alive." *Id.*, at 135. In contrast, we observed that the firing squad was routinely used as a method of execution for military officers. *Id.*, at 137. What each of the forbidden punishments had in common was the deliberate infliction of pain for the sake of pain—"superadd[ing]" pain to the death sentence through torture and the like.

We carried these principles further in *In re Kemmler*, 136 U. S. 436 (1890). There we rejected an opportunity to incorporate the Eighth Amendment against the States in a challenge to the first execution by electrocution, to be carried out by the State of New York. *Id.*, at 449. In

passing over that question, however, we observed that "[p]unishments are cruel when they involve torture or a lingering death; but the punishment of death is not cruel within the meaning of that word as used in the Constitution. It implies there something inhuman and barbarous, something more than the mere extinguishment of life." *Id.*, at 447. We noted that the New York statute adopting electrocution as a method of execution "was passed in the effort to devise a more humane method of reaching the result." *Ibid.*

B

Petitioners do not claim that lethal injection or the proper administration of the particular protocol adopted by Kentucky by themselves constitute the cruel or wanton infliction of pain. Quite the contrary, they concede that "if performed properly," an execution carried out under Kentucky's procedures would be "humane and constitutional." Brief for Petitioners 31. That is because, as counsel for petitioners admitted at oral argument, proper administration of the first drug, sodium thiopental, eliminates any meaningful risk that a prisoner would experience pain from the subsequent injections of pancuronium and potassium chloride. See Tr. of Oral Arg. 5; App. 493–494 (testimony of petitioners' expert that, if sodium thiopental is "properly administered" under the protocol, "[i]n virtually every case, then that would be a humane death").

Instead, petitioners claim that there is a significant risk that the procedures will *not* be properly followed—in particular, that the sodium thiopental will not be properly administered to achieve its intended effect—resulting in severe pain when the other chemicals are administered. Our cases recognize that subjecting individuals to a risk of future harm—not simply actually inflicting pain—can qualify as cruel and unusual punishment. To establish that such exposure violates the Eighth Amendment, how-

ever, the conditions presenting the risk must be "*sure or very likely* to cause serious illness and needless suffering," and give rise to "sufficiently *imminent* dangers." *Helling* v. *McKinney*, 509 U. S. 25, 33, 34–35 (1993) (emphasis added). We have explained that to prevail on such a claim there must be a "substantial risk of serious harm," an "objectively intolerable risk of harm" that prevents prison officials from pleading that they were "subjectively blameless for purposes of the Eighth Amendment." *Farmer* v. *Brennan*, 511 U. S. 825, 842, 846, and n. 9 (1994).

Simply because an execution method may result in pain, either by accident or as an inescapable consequence of death, does not establish the sort of "objectively intolerable risk of harm" that qualifies as cruel and unusual. In *Louisiana ex rel. Francis* v. *Resweber*, 329 U. S. 459 (1947), a plurality of the Court upheld a second attempt at executing a prisoner by electrocution after a mechanical malfunction had interfered with the first attempt. The principal opinion noted that "[a]ccidents happen for which no man is to blame," *id.*, at 462, and concluded that such "an accident, with no suggestion of malevolence," *id.*, at 463, did not give rise to an Eighth Amendment violation, *id.*, at 463–464.

As Justice Frankfurter noted in a separate opinion based on the Due Process Clause, however, "a hypothetical situation" involving "a series of abortive attempts at electrocution" would present a different case. *Id.*, at 471 (concurring opinion). In terms of our present Eighth Amendment analysis, such a situation—unlike an "innocent misadventure," *id.*, at 470—would demonstrate an "objectively intolerable risk of harm" that officials may not ignore. See *Farmer*, 511 U. S., at 846, and n. 9. In other words, an isolated mishap alone does not give rise to an Eighth Amendment violation, precisely because such an event, while regrettable, does not suggest cruelty, or that the procedure at issue gives rise to a "substantial risk of

serious harm." *Id.*, at 842.

C

Much of petitioners' case rests on the contention that they have identified a significant risk of harm that can be eliminated by adopting alternative procedures, such as a one-drug protocol that dispenses with the use of pancuronium and potassium chloride, and additional monitoring by trained personnel to ensure that the first dose of sodium thiopental has been adequately delivered. Given what our cases have said about the nature of the risk of harm that is actionable under the Eighth Amendment, a condemned prisoner cannot successfully challenge a State's method of execution merely by showing a slightly or marginally safer alternative.

Permitting an Eighth Amendment violation to be established on such a showing would threaten to transform courts into boards of inquiry charged with determining "best practices" for executions, with each ruling supplanted by another round of litigation touting a new and improved methodology. Such an approach finds no support in our cases, would embroil the courts in ongoing scientific controversies beyond their expertise, and would substantially intrude on the role of state legislatures in implementing their execution procedures—a role that by all accounts the States have fulfilled with an earnest desire to provide for a progressively more humane manner of death. See *Bell* v. *Wolfish*, 441 U. S. 520, 562 (1979) ("The wide range of 'judgment calls' that meet constitutional and statutory requirements are confided to officials outside of the Judicial Branch of Government"). Accordingly, we reject petitioners' proposed "unnecessary risk" standard, as well as the dissent's "untoward" risk variation. See *post*, at 2, 11 (opinion of GINSBURG, J.).[2]

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[2] The difficulties inherent in such approaches are exemplified by the controversy surrounding the study of lethal injection published in the

Instead, the proffered alternatives must effectively address a "substantial risk of serious harm." *Farmer*, *supra,* at 842. To qualify, the alternative procedure must be feasible, readily implemented, and in fact significantly reduce a substantial risk of severe pain. If a State refuses to adopt such an alternative in the face of these documented advantages, without a legitimate penological justification for adhering to its current method of execution, then a State's refusal to change its method can be viewed as "cruel and unusual" under the Eighth Amendment.[3]

April 2005 edition of the British medical journal the Lancet. After examining thiopental concentrations in toxicology reports based on blood samples drawn from 49 executed inmates, the study concluded that "most of the executed inmates had concentrations that would not be expected to produce a surgical plane of anaesthesia, and 21 (43%) had concentrations consistent with consciousness." Koniaris, Zimmers, Lubarsky, & Sheldon, Inadequate Anaesthesia in Lethal Injection for Execution, 365 Lancet 1412, 1412–1413. The study was widely cited around the country in motions to stay executions and briefs on the merits. See, *e.g.,* Denno, The Lethal Injection Quandary: How Medicine Has Dismantled the Death Penalty, 76 Ford. L. Rev. 49, 105, n. 366 (2007) (collecting cases in which claimants cited the Lancet study). But shortly after the Lancet study appeared, peer responses by seven medical researchers criticized the methodology supporting the original conclusions. See Groner, Inadequate Anaesthesia in Lethal Injection for Execution, 366 Lancet 1073–1074 (Sept. 2005). These researchers noted that because the blood samples were taken "several hours to days after" the inmates' deaths, the postmortem concentrations of thiopental—a fat-soluble compound that passively diffuses from blood into tissue—could not be relied on as accurate indicators for concentrations during life. *Id.*, at 1073. The authors of the original study responded to defend their methodology. *Id.*, at 1074–1076. See also *post*, at 2–4 (BREYER, J., concurring in judgment).

We do not purport to take sides in this dispute. We cite it only to confirm that a "best practices" approach, calling for the weighing of relative risks without some measure of deference to a State's choice of execution procedures, would involve the courts in debatable matters far exceeding their expertise.

[3] JUSTICE THOMAS agrees that courts have neither the authority nor

III

In applying these standards to the facts of this case, we note at the outset that it is difficult to regard a practice as "objectively intolerable" when it is in fact widely tolerated. Thirty-six States that sanction capital punishment have adopted lethal injection as the preferred method of execution. The Federal Government uses lethal injection as well. See *supra*, at 3–4, and n. 1. This broad consensus goes not just to the method of execution, but also to the specific three-drug combination used by Kentucky. Thirty States, as well as the Federal Government, use a series of sodium thiopental, pancuronium bromide, and potassium chloride, in varying amounts. See *supra*, at 4. No State uses or has ever used the alternative one-drug protocol belatedly urged by petitioners. This consensus is probative but not conclusive with respect to that aspect of the alternatives proposed by petitioners.

In order to meet their "heavy burden" of showing that Kentucky's procedure is "cruelly inhumane," *Gregg*, 428 U. S., at 175 (joint opinion of Stewart, Powell, and STEVENS, JJ.), petitioners point to numerous aspects of the protocol that they contend create opportunities for error. Their claim hinges on the improper administration of the first drug, sodium thiopental. It is uncontested that, failing a proper dose of sodium thiopental that would render the prisoner unconscious, there is a substantial, constitutionally unacceptable risk of suffocation from the administration of pancuronium bromide and pain from the

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the expertise to function as boards of inquiry determining best practices for executions, see *post*, at 9 (opinion concurring in judgment) (quoting this opinion); *post*, at 13, but contends that the standard we adopt inevitably poses such concerns. In our view, those concerns are effectively addressed by the threshold requirement reflected in our cases of a "'substantial risk of serious harm'" or an "'objectively intolerable risk of harm,'" see *supra*, at 11, and by the substantive requirements in the articulated standard.

injection of potassium chloride. See Tr. of Oral Arg. 27. We agree with the state trial court and State Supreme Court, however, that petitioners have not shown that the risk of an inadequate dose of the first drug is substantial. And we reject the argument that the Eighth Amendment requires Kentucky to adopt the untested alternative procedures petitioners have identified.

A

Petitioners contend that there is a risk of improper administration of thiopental because the doses are difficult to mix into solution form and load into syringes; because the protocol fails to establish a rate of injection, which could lead to a failure of the IV; because it is possible that the IV catheters will infiltrate into surrounding tissue, causing an inadequate dose to be delivered to the vein; because of inadequate facilities and training; and because Kentucky has no reliable means of monitoring the anesthetic depth of the prisoner after the sodium thiopental has been administered. Brief for Petitioners 12–20.

As for the risk that the sodium thiopental would be improperly prepared, petitioners contend that Kentucky employs untrained personnel who are unqualified to calculate and mix an adequate dose, especially in light of the omission of volume and concentration amounts from the written protocol. *Id.*, at 45–46. The state trial court, however, specifically found that "[i]f the manufacturers' instructions for reconstitution of Sodium Thiopental are followed, . . . there would be minimal risk of improper mixing, despite converse testimony that a layperson would have difficulty performing this task." App. 761. We cannot say that this finding is clearly erroneous, see *Hernandez* v. *New York*, 500 U. S. 352, 366 (1991) (plurality opinion), particularly when that finding is substantiated by expert testimony describing the task of reconstituting powder sodium thiopental into solution form as "[n]ot

difficult at all. . . . You take a liquid, you inject it into a vial with the powder, then you shake it up until the powder dissolves and, you're done. The instructions are on the package insert." 5 Tr. 695 (Apr. 19, 2005).

Likewise, the asserted problems related to the IV lines do not establish a sufficiently substantial risk of harm to meet the requirements of the Eighth Amendment. Kentucky has put in place several important safeguards to ensure that an adequate dose of sodium thiopental is delivered to the condemned prisoner. The most significant of these is the written protocol's requirement that members of the IV team must have at least one year of professional experience as a certified medical assistant, phlebotomist, EMT, paramedic, or military corpsman. App. 984. Kentucky currently uses a phlebotomist and an EMT, personnel who have daily experience establishing IV catheters for inmates in Kentucky's prison population. *Id.,* at 273–274; Tr. of Oral Arg. 27–28. Moreover, these IV team members, along with the rest of the execution team, participate in at least 10 practice sessions per year. App. 984. These sessions, required by the written protocol, encompass a complete walk-through of the execution procedures, including the siting of IV catheters into volunteers. *Ibid.* In addition, the protocol calls for the IV team to establish both primary and backup lines and to prepare two sets of the lethal injection drugs before the execution commences. *Id.,* at 975. These redundant measures ensure that if an insufficient dose of sodium thiopental is initially administered through the primary line, an additional dose can be given through the backup line before the last two drugs are injected. *Id.,* at 279–280, 337–338, 978–979.

The IV team has one hour to establish both the primary and backup IVs, a length of time the trial court found to be "not excessive but rather necessary," *id.,* at 762, contrary to petitioners' claim that using an IV inserted after any

"more than ten or fifteen minutes of unsuccessful attempts is dangerous because the IV is almost certain to be unreliable," Brief for Petitioners 47. And, in any event, merely because the protocol gives the IV team one hour to establish intravenous access does not mean that team members are required to spend the entire hour in a futile attempt to do so. The qualifications of the IV team also substantially reduce the risk of IV infiltration.

In addition, the presence of the warden and deputy warden in the execution chamber with the prisoner allows them to watch for signs of IV problems, including infiltration. Three of the Commonwealth's medical experts testified that identifying signs of infiltration would be "very obvious," even to the average person, because of the swelling that would result. App. 385–386. See *id.,* at 353, 600–601. Kentucky's protocol specifically requires the warden to redirect the flow of chemicals to the backup IV site if the prisoner does not lose consciousness within 60 seconds. *Id.,* at 978–979. In light of these safeguards, we cannot say that the risks identified by petitioners are so substantial or imminent as to amount to an Eighth Amendment violation.

B

Nor does Kentucky's failure to adopt petitioners' proposed alternatives demonstrate that the Commonwealth's execution procedure is cruel and unusual.

First, petitioners contend that Kentucky could switch from a three-drug protocol to a one-drug protocol by using a single dose of sodium thiopental or other barbiturate. Brief for Petitioners 51–57. That alternative was not proposed to the state courts below.[4] As a result, we are

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[4] Petitioners did allude to an "alternative chemical or combination of chemicals" that could replace Kentucky's three-drug protocol in their post-trial brief, see App. 684, but based on the arguments presented there, it is clear they intended to refer only to other, allegedly less

left without any findings on the effectiveness of petitioners' barbiturate-only protocol, despite scattered references in the trial testimony to the sole use of sodium thiopental or pentobarbital as a preferred method of execution. See Reply Brief for Petitioners 18, n. 6.

In any event, the Commonwealth's continued use of the three-drug protocol cannot be viewed as posing an "objectively intolerable risk" when no other State has adopted the one-drug method and petitioners proffered no study showing that it is an equally effective manner of imposing a death sentence. See App. 760–761, n. 8 ("Plaintiffs have not presented any scientific study indicating a better method of execution by lethal injection"). Indeed, the State of Tennessee, after reviewing its execution procedures, rejected a proposal to adopt a one-drug protocol using sodium thiopental. The State concluded that the one-drug alternative would take longer than the three-drug method and that the "required dosage of sodium thiopental would be less predictable and more variable when it is used as the sole mechanism for producing death . . . ." *Workman*, 486 F. 3d, at 919 (Appendix A). We need not endorse the accuracy of those conclusions to note simply that the comparative efficacy of a one-drug method of execution is not so well established that Kentucky's failure to adopt it constitutes a violation of the Eighth Amendment.

Petitioners also contend that Kentucky should omit the second drug, pancuronium bromide, because it serves no therapeutic purpose while suppressing muscle movements

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painful drugs that could substitute for potassium chloride as a heart-stopping agent, see *id.,* at 701. Likewise, the only alternatives to the three-drug protocol presented to the Kentucky Supreme Court were those that replaced potassium chloride with other drugs for inducing cardiac arrest, or that omitted pancuronium bromide, or that added an analgesic to relieve pain. See Brief for Appellants in No. 2005–SC–00543, pp. 38, 39, 40.

that could reveal an inadequate administration of the first drug. The state trial court, however, specifically found that pancuronium serves two purposes. First, it prevents involuntary physical movements during unconsciousness that may accompany the injection of potassium chloride. App. 763. The Commonwealth has an interest in preserving the dignity of the procedure, especially where convulsions or seizures could be misperceived as signs of consciousness or distress. Second, pancuronium stops respiration, hastening death. *Ibid*. Kentucky's decision to include the drug does not offend the Eighth Amendment.[5]

Petitioners' barbiturate-only protocol, they contend, is not untested; it is used routinely by veterinarians in putting animals to sleep. Moreover, 23 States, including Kentucky, bar veterinarians from using a neuromuscular paralytic agent like pancuronium bromide, either expressly or, like Kentucky, by specifically directing the use of a drug like sodium pentobarbital. See Brief for Dr. Kevin Concannon et al. as *Amici Curiae* 18, n. 5. If pancuronium is too cruel for animals, the argument goes, then it must be too cruel for the condemned inmate. Whatever rhetorical force the argument carries, see *Workman*, *supra,* at 909 (describing the comparison to animal euthanasia as "more of a debater's point"), it overlooks the States' legitimate interest in providing for a quick, certain death. In the Netherlands, for example, where physician-assisted euthanasia is permitted, the Royal Dutch Society for the Advancement of Pharmacy recommends the use of a muscle relaxant (such as pancuronium dibromide) in addition to thiopental in order to prevent a prolonged, undignified death. See Kimsma, Euthanasia and Euthanizing Drugs

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[5]JUSTICE STEVENS's conclusion that the risk addressed by pancuronium bromide is "vastly outweighed" by the risk of pain at issue here, see *post*, at 3 (opinion concurring in judgment), depends, of course, on the magnitude of the risk of such pain. As explained, that risk is insignificant in light of the safeguards Kentucky has adopted.

in The Netherlands, reprinted in Drug Use in Assisted Suicide and Euthanasia 193, 200, 204 (M. Battin & A. Lipman eds. 1996). That concern may be less compelling in the veterinary context, and in any event other methods approved by veterinarians—such as stunning the animal or severing its spinal cord, see 6 Tr. 758–759 (Apr. 20, 2005)—make clear that veterinary practice for animals is not an appropriate guide to humane practices for humans.

Petitioners also fault the Kentucky protocol for lacking a systematic mechanism for monitoring the "anesthetic depth" of the prisoner. Under petitioners' scheme, qualified personnel would employ monitoring equipment, such as a Bispectral Index (BIS) monitor, blood pressure cuff, or EKG to verify that a prisoner has achieved sufficient unconsciousness before injecting the final two drugs. The visual inspection performed by the warden and deputy warden, they maintain, is an inadequate substitute for the more sophisticated procedures they envision. Brief for Petitioners 19, 58.

At the outset, it is important to reemphasize that a proper dose of thiopental obviates the concern that a prisoner will not be sufficiently sedated. All the experts who testified at trial agreed on this point. The risks of failing to adopt additional monitoring procedures are thus even more "remote" and attenuated than the risks posed by the alleged inadequacies of Kentucky's procedures designed to ensure the delivery of thiopental. See *Hamilton* v. *Jones*, 472 F. 3d 814, 817 (CA10 2007) *(per curiam)*; *Taylor* v. *Crawford*, 487 F. 3d 1072, 1084 (CA8 2007).

But more than this, Kentucky's expert testified that a blood pressure cuff would have no utility in assessing the level of the prisoner's unconsciousness following the introduction of sodium thiopental, which depresses circulation. App. 578. Furthermore, the medical community has yet to endorse the use of a BIS monitor, which measures brain function, as an indication of anesthetic awareness. Ameri-

can Society of Anesthesiologists, Practice Advisory for Intraoperative Awareness and Brain Function Monitoring, 104 Anesthesiology 847, 855 (Apr. 2006); see *Brown* v. *Beck*, 445 F. 3d 752, 754–755 (CA4 2006) (Michael, J., dissenting). The asserted need for a professional anesthesiologist to interpret the BIS monitor readings is nothing more than an argument against the entire procedure, given that both Kentucky law, see Ky. Rev. Stat. Ann. §431.220(3), and the American Society of Anesthesiologists' own ethical guidelines, see Brief for American Society of Anesthesiologists as *Amicus Curiae* 2–3, prohibit anesthesiologists from participating in capital punishment. Nor is it pertinent that the use of a blood pressure cuff and EKG is "the standard of care in surgery requiring anesthesia," as the dissent points out. *Post*, at 6. Petitioners have not shown that these supplementary procedures, drawn from a different context, are necessary to avoid a substantial risk of suffering.

The dissent believes that rough-and-ready tests for checking consciousness—calling the inmate's name, brushing his eyelashes, or presenting him with strong, noxious odors—could materially decrease the risk of administering the second and third drugs before the sodium thiopental has taken effect. See *ibid*. Again, the risk at issue is already attenuated, given the steps Kentucky has taken to ensure the proper administration of the first drug. Moreover, the scenario the dissent posits involves a level of unconsciousness allegedly sufficient to avoid detection of improper administration of the anesthesia under Kentucky's procedure, but not sufficient to prevent pain. See *post*, at 9–10. There is no indication that the basic tests the dissent advocates can make such fine distinctions. If these tests are effective only in determining whether the sodium thiopental has entered the inmate's bloodstream, see *post*, at 6, the record confirms that the visual inspection of the IV site under Kentucky's procedure achieves

that objective. See *supra*, at 17.[6]

The dissent would continue the stay of these executions (and presumably the many others held in abeyance pending decision in this case) and send the case back to the lower courts to determine whether such added measures redress an "untoward" risk of pain. *Post*, at 11. But an inmate cannot succeed on an Eighth Amendment claim simply by showing one more step the State could take as a failsafe for other, independently adequate measures. This approach would serve no meaningful purpose and would frustrate the State's legitimate interest in carrying out a sentence of death in a timely manner. See *Baze* v. *Parker*, 371 F. 3d 310, 317 (CA6 2004) (petitioner Baze sentenced to death in 1994); *Bowling* v. *Parker*, 138 F. Supp. 2d 821, 840 (ED Ky. 2001) (petitioner Bowling sentenced to death in 1991).

JUSTICE STEVENS suggests that our opinion leaves the disposition of other cases uncertain, see *post*, at 1, but the standard we set forth here resolves more challenges than he acknowledges. A stay of execution may not be granted on grounds such as those asserted here unless the condemned prisoner establishes that the State's lethal injection protocol creates a demonstrated risk of severe pain. He must show that the risk is substantial when compared to the known and available alternatives. A State with a lethal injection protocol substantially similar to the protocol we uphold today would not create a risk that meets this standard.

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[6] Resisting this point, the dissent rejects the expert testimony that problems with the intravenous administration of sodium thiopental would be obvious, see *post*, at 10, testimony based not only on the pain that would result from injecting the first drug into tissue rather than the vein, see App. 600–601, but also on the swelling that would occur, see *id.*, at 353. See also *id.*, at 385–386. Neither of these expert conclusions was disputed below.

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Reasonable people of good faith disagree on the morality and efficacy of capital punishment, and for many who oppose it, no method of execution would ever be acceptable. But as Justice Frankfurter stressed in *Resweber*, "[o]ne must be on guard against finding in personal disapproval a reflection of more or less prevailing condemnation." 329 U. S., at 471 (concurring opinion). This Court has ruled that capital punishment is not prohibited under our Constitution, and that the States may enact laws specifying that sanction. "[T]he power of a State to pass laws means little if the State cannot enforce them." *McCleskey* v. *Zant*, 499 U. S. 467, 491 (1991). State efforts to implement capital punishment must certainly comply with the Eighth Amendment, but what that Amendment prohibits is wanton exposure to "objectively intolerable risk," *Farmer*, 511 U. S., at 846, and n. 9, not simply the possibility of pain.

Kentucky has adopted a method of execution believed to be the most humane available, one it shares with 35 other States. Petitioners agree that, if administered as intended, that procedure will result in a painless death. The risks of maladministration they have suggested—such as improper mixing of chemicals and improper setting of IVs by trained and experienced personnel—cannot remotely be characterized as "objectively intolerable." Kentucky's decision to adhere to its protocol despite these asserted risks, while adopting safeguards to protect against them, cannot be viewed as probative of the wanton infliction of pain under the Eighth Amendment. Finally, the alternative that petitioners belatedly propose has problems of its own, and has never been tried by a single State.

Throughout our history, whenever a method of execution has been challenged in this Court as cruel and unusual, the Court has rejected the challenge. Our society has nonetheless steadily moved to more humane methods

of carrying out capital punishment. 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. *Gomez* v. *United States Dist. Court for Northern Dist. of Cal.*, 503 U. S. 653, 657 (1992) (STEVENS, J., dissenting); App. 755. The broad framework of the Eighth Amendment has accommodated this progress toward more humane methods of execution, and our approval of a particular method in the past has not precluded legislatures from taking the steps they deem appropriate, in light of new developments, to ensure humane capital punishment. There is no reason to suppose that today's decision will be any different.[7]

The judgment below concluding that Kentucky's procedure is consistent with the Eighth Amendment is, accordingly, affirmed.

It is so ordered.

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[7] We do not agree with JUSTICE STEVENS that anything in our opinion undermines or remotely addresses the validity of capital punishment. See *post*, at 11. The fact that society has moved to progressively more humane methods of execution does not suggest that capital punishment itself no longer serves valid purposes; we would not have supposed that the case for capital punishment was stronger when it was imposed predominantly by hanging or electrocution.