United States Court of Appeals
For the Eighth Circuit

No. 21-1965

Stacey Eugene Johnson,

Plaintiff - Appellant,

Bruce Earl Ward,

Plaintiff - Appellant,

Don William Davis; Terrick Terrell Nooner,

Plaintiffs - Appellants,

Justin Anderson; Ray Dansby; Gregory DeCay; Kenneth Isom; Alvin Bernal Jackson; LaTavious Johnson; Timothy Wayne Kemp; Brandon E. Lacy; Zachariah Marcyniuk; Roderick Leshun Rankin; Andrew Sasser; Thomas Springs; Mickey Thomas,

Intervenor Plaintiffs - Appellants,

v.

Asa Hutchinson, Governor of the State of Arkansas, in his official capacity; Dexter Payne, Director, Arkansas Division of Correction,

Defendants - Appellees.

Appeal from United States District Court
for the Eastern District of Arkansas - Central

Submitted: January 12, 2022
Filed: August 16, 2022

Before COLLOTON, KELLY, and KOBES, Circuit Judges.

COLLOTON, Circuit Judge.

Stacey Johnson and other death-row prisoners in Arkansas sued the governor and a corrections official, arguing that Arkansas's three-drug execution protocol violates the Eighth Amendment. After a bench trial, the district court[*] found that the prisoners failed to establish a violation, and denied a motion for new trial. We affirm.

I.

In February 2017, Governor Hutchinson of Arkansas scheduled the executions of Stacey Johnson and seven other prisoners for April 2017. The eight men and a ninth prisoner sued the governor and the director of the Arkansas Division of Correction. They alleged that Arkansas's three-drug execution protocol violates the Eighth Amendment. The prisoners also sought a preliminary injunction to stay the executions pending trial. The district court granted a preliminary injunction, but this court vacated the order. *McGehee v. Hutchinson*, 854 F.3d 488 (8th Cir. 2017) (en banc) (per curiam). The case then proceeded to trial.

Arkansas's execution protocol involves several steps. First, a prison official administers 500 mg of a sedative called midazolam to the prisoner. The official next performs a number of physical tests to assess whether the inmate is conscious; if the

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[*]The Honorable Kristine G. Baker, United States District Judge for the Eastern District of Arkansas.

inmate is responsive, then the official administers an additional 500 mg of midazolam. The official then administers vecuronium bromide, a paralytic drug. Finally, the official administers potassium chloride, which causes the prisoner's heart to stop.

After trial, the district court entered judgment in favor of the state officials on the Eighth Amendment claim. The court found that the prisoners had failed to prove that the protocol created a substantial risk of severe pain. Alternatively, the court found that the prisoners had failed to show that a feasible and readily implemented alternative would significantly reduce a risk of severe pain. The prisoners later moved for a new trial, asserting newly discovered evidence about the availability of pentobarbital for use as a single-drug alternative to the execution protocol. The court concluded that the evidence was cumulative and unlikely to produce a different result, and thus denied the motion.

The prisoners appeal. We review the district court's factual findings for clear error and its legal conclusions *de novo*.

II.

To prove a method-of-execution claim under the Eighth Amendment, an inmate must satisfy two elements. First, he must demonstrate that the State's method "presents a risk that is '*sure or very likely* to cause serious illness and needless suffering,' and give rise to 'sufficiently *imminent* dangers.'" *Glossip v. Gross*, 576 U.S. 863, 877 (2015) (quoting *Baze v. Rees*, 553 U.S. 35, 50 (2008) (plurality opinion)) (internal quotation omitted). The risk 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.'" *Id.* (quoting *Baze*, 553 U.S. at 50 (plurality opinion)). Second, he "must show a feasible and readily implemented alternative method of execution that

would significantly reduce a substantial risk of severe pain and that the State has refused to adopt without a legitimate penological reason." *Bucklew v. Precythe*, 139 S. Ct. 1112, 1125 (2019).

The prisoners argue that the district court clearly erred in finding that they failed to demonstrate that the Arkansas execution protocol creates a substantial risk of severe pain. Their argument proceeds as follows: They posit that midazolam has a so-called "ceiling effect" at a dose no greater than 0.4 mg/kg, after which increasing the dosage does not produce greater sedative effect. At a dosage of 0.4 mg, they say, at least 72% of persons sedated with midazolam will be aware of pain. Because midazolam does not suppress pain, they contend, prisoners who remain sensate will experience severe pain when the second and third drugs in the protocol are administered.

The district court rejected the prisoners' assertion that midazolam has a ceiling effect at 0.4 mg/kg. The court assumed for the sake of analysis that midazolam has a ceiling effect, but concluded that there is no medical consensus about the dose at which the effect occurs. The court also found that there are no human studies that have used doses large enough to establish a ceiling effect.

The prisoners argue that these findings are clearly erroneous. To establish that individuals sedated with midazolam are sure or very likely to remain sensate, the prisoners rely on a study by Dr. Ian Russell. Seventy-two percent of the participants in the Russell study responded to oral commands after sedation with midazolam. But the Russell study administered only 0.2 mg/kg of midazolam to anesthetize the participants, with an additional 0.15 mg/kg administered over the course of each hour of surgery. This dose, which is equivalent to 20 mg plus 15 mg per hour for a 220-pound man, is far less than the 500 mg administered as part of the execution protocol. Unless midazolam has a ceiling effect at or below the dosage used in the Russell

study, the study does not compel the conclusion that prisoners are sure or very likely to remain aware of pain after receiving the doses of midazolam used in the protocol.

In an effort to make that showing, the prisoners cite expert testimony from Dr. Craig Stevens and Dr. Gail Van Norman that midazolam has a ceiling effect that occurs at a dose between 0.2 to 0.4 mg/kg. These experts relied on two medical studies, which are known by the names of their principal authors as the Inagaki study and the Miyake study.

The State's experts, however, presented competing opinions. Dr. Joseph Antognini and Dr. Daniel Buffington disputed the proffered interpretations of the Inagaki and Miyake studies. Dr. Antognini testified that the studies may suggest that midazolam has a ceiling effect, but do not prove that one exists. He stated that when searching for a ceiling effect, researchers typically test the clinical effects of a drug across a broad range of dosages, but that the Inagaki and Miyake studies did not do so. Dr. Buffington agreed that the Miyake study failed to demonstrate a ceiling effect, and opined that no study has established that midazolam has a ceiling effect. On cross-examination, the prisoners' expert Dr. Van Norman testified that a ceiling effect "can be seen to start at around .4 milligrams per kilogram," but that the study "never reached the full ceiling effect." She also acknowledged that there is no scientific consensus on the dose at which the ceiling effect occurs.

With no scientific consensus and a paucity of reliable scientific evidence concerning the effect of large doses of midazolam on humans, the district court did not clearly err in finding that the prisoners failed to demonstrate that the Arkansas execution protocol is sure or very likely to cause severe pain. Accordingly, the district court properly dismissed the claim under the Eighth Amendment.

The prisoners argue that additional findings of fact are required, because the court failed adequately to address their evidence. After a bench trial, a district court

"must find the facts specially and state its conclusions of law separately." Fed. R. Civ. P. 52(a). But the court need not address every piece of evidence or disputed point; it is sufficient for the court to "set forth its reasoning with enough clarity that the appellate court may understand the basis of the decision." *Leonard v. Dorsey & Whitney LLP*, 553 F.3d 609, 613 (8th Cir. 2009).

The findings here are adequate. Although the court did not specifically discuss the Miyake and Inagaki studies, the court did address the expert testimony regarding any midazolam ceiling effect, and the experts based their opinions on the studies. Consistent with Dr. Van Norman's testimony, the court concluded that there was no scientific consensus regarding the dose of midazolam at which the ceiling effect is reached. Consistent with the testimony of Drs. Antognini, Buffington, and Van Norman, the court found that there are no human studies that have established the dose at which there is a true ceiling effect. The court's rationale is adequately explained, and there are sufficient findings to facilitate appellate review. Having reviewed the expert testimony and the medical literature received as evidence, we see no clear error in the district court's findings about the lack of scientific consensus or human studies establishing a ceiling effect for midazolam.

The prisoners also challenge the district court's denial of their motion for a new trial. They argue that new evidence of the federal government's ability to acquire pentobarbital for use in federal executions merits a new trial. Setting aside whether the State would have the same access to pentobarbital, this evidence was not material. The prisoners failed to establish that the State's existing method was sure or very likely to cause needless suffering, so the State was not required to consider alternative methods. The district court did not abuse its discretion in denying the motion.

* * *

The judgment of the district court is affirmed.

KELLY, Circuit Judge, concurring.

The court concludes that, "[w]ith no scientific consensus and a paucity of reliable scientific evidence concerning the effect of large doses of midazolam on humans, the district court did not clearly err in finding that the prisoners failed to demonstrate that the Arkansas execution protocol is sure or very likely to cause severe pain." I agree that under our precedent the district court did not clearly err. However, I write separately to highlight how impossible a prisoner's burden has become to succeed on an Eighth Amendment method-of-execution claim, and how hollow our review continues to be as a result.

To begin, I note that the district court did not find that the prisoners offered a "paucity of reliable scientific evidence." The record shows, in fact, that the prisoners presented a substantial amount of scientific evidence supporting their position that persons who receive a 500-mg dose of midazolam are likely to remain aware of painful stimuli such as the second and third drugs in Arkansas's protocol. For example, Dr. Van Norman testified that, "[t]o a virtual medical certainty," a prisoner executed under Arkansas's midazolam protocol "will experience pain and suffering" because midazolam "has no significant clinical analgesic effects" and does not prevent awareness. Dr. Van Norman relied on multiple studies in reaching this conclusion. Of course, the State offered testimony from its own experts, one of whom testified that there is only "speculation" that the protocol would cause prisoners to suffer severe pain. But the prisoners' evidence can only be considered thin if one determines that it is unreliable or inaccurate. The district court did not make findings about the credibility of the experts or the underlying data on which they relied, instead identifying disagreements between the experts and then concluding that the prisoners failed to meet their burden.

More broadly, however, our demand that prisoners present overwhelming "scientific evidence" and show a "scientific consensus" about the effect of drug

dosages that will never ethically be tested on humans has shown itself to be an insurmountable task.

As the court explains, the first prong of the test from Baze and Glossip requires a prisoner to show that a state's method of execution "presents a *risk* that is '*sure or very likely* to cause serious illness and needless suffering.'" Glossip, 576 U.S. at 877 (first emphasis added) (quoting Baze, 553 U.S. at 50 (plurality opinion)). Neither the majority in Glossip nor the plurality in Baze held that this test requires a prisoner to show that there is a "scientific consensus" that a state's method is sure or very likely to cause severe pain.[1] The term "scientific consensus" appears only in Justice Alito's concurrence in Baze, which no other justice joined, and only in the context of the requirement that a prisoner demonstrate that modifying a state's lethal injection protocol would "*significantly* reduce a *substantial* risk of *severe* pain."[2] See Baze, 553 U.S. at 67 (Alito, J., concurring) (quotation omitted).

Nevertheless, in McGehee, this court suggested that establishing a scientific consensus might be part of the prisoner's burden under the Baze and Glossip test. In that case, the district court granted a stay of execution, while acknowledging that there was no "well-established scientific consensus" that the use of midazolam in the Arkansas protocol was very likely to cause severe pain. McGehee, 854 F.3d at 492. But the district court considered the standard proposed by Justice Alito in Baze to be

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[1]In fact, the petitioners in Baze conceded that if the first drug in Kentucky's execution protocol—sodium thiopental—was administered as intended, it would "result in a humane death" and would "eliminate[] any meaningful risk that a prisoner would experience pain from the subsequent injections of pancuronium and potassium chloride." Baze, 553 U.S. at 41, 49 (plurality opinion); see also Glossip, 576 U.S. at 950 (Sotomayor, J., dissenting).

[2]The Supreme Court has used the term "consensus" in assessing whether there is a "national" or "legislative" consensus about evolving standards of decency. See, e.g., Atkins v. Virginia, 536 U.S. 304, 311–13 (2002).

"a high bar to reach and level of certainty to achieve," in part due to "the limitations of human study at 500 mg, 1,000 mg, or higher doses of midazolam." Id. at 492–93. In vacating the district court's decision, this court stated, "If there is no scientific consensus and a paucity of reliable scientific evidence concerning the effect of a lethal-injection protocol on humans, then the challenger might well be unable to meet [the burden set forth in Baze and Glossip]." Id. at 493. The court concluded that the "equivocal evidence" in that case "[fell] short of demonstrating a significant possibility that the prisoners will show that the Arkansas protocol is 'sure or very likely' to cause severe pain and needless suffering." Id. Since McGehee, we have cited a lack of "scientific consensus" in rejecting two additional method-of-execution challenges. See Williams v. Kelley, 854 F.3d 998, 1001 (8th Cir. 2017) ("As in McGehee, the evidence is 'equivocal,' lacks 'scientific consensus' and presents 'a paucity of reliable scientific evidence' on the impact of the lethal-injection protocol on a person with Williams's health conditions." (quoting McGehee, 854 F.3d at 492–93)); Bucklew v. Precythe, 883 F.3d 1087, 1096 (8th Cir. 2018) (concluding that prisoner failed to establish his risk of severe pain would be substantially reduced by alternative method of execution because his evidence was "equivocal, lack[ed] scientific consensus and present[ed] a paucity of reliable scientific evidence" (quotation omitted)), aff'd, 139 S. Ct. 1112 (2019).[3] Today, the court relies on this language again.

It is true that the test from Baze and Glossip creates a high bar. See Barr v. Lee, 140 S. Ct. 2590, 2591 (2020) (per curiam) (explaining that a claim challenging an execution protocol "faces an exceedingly high bar"); see also In re Ohio Execution

[3]In affirming our Bucklew decision, the Supreme Court did not use the term "scientific consensus." Instead, it concluded that the risks asserted by Bucklew "rest[ed] on speculation unsupported, if not affirmatively contradicted, by the evidence" and that "the record contain[ed] insufficient evidence" to support his argument that his alternative method of execution would eliminate the substantial risk of severe pain. Bucklew, 139 S. Ct. at 1130.

Protocol Litig., 946 F.3d 287, 290 (6th Cir. 2019); In re Ohio Execution Protocol, 860 F.3d 881, 886 (6th Cir. 2017) (describing plaintiff's burden as a "rigorous showing"). It is also true that other circuits have made clear that speculative evidence cannot meet this standard. See Wellons v. Comm'r, Ga. Dep't of Corr., 754 F.3d 1260, 1265 (11th Cir. 2014) ("We have held that speculation that a drug that has not been approved will lead to severe pain or suffering 'cannot substitute for evidence that the use of the drug is sure or very likely to cause serious illness and needless suffering.'" (quoting Mann v. Palmer, 713 F.3d 1306, 1315 (11th Cir. 2013))); Whitaker v. Livingston, 732 F.3d 465, 469 (5th Cir. 2013) ("[S]peculation cannot substitute for evidence that the use of the drug is sure or very likely to cause serious illness and needless suffering." (quoting Brewer v. Landrigan, 562 U.S. 996, 996 (2010))); Cooey v. Strickland, 589 F.3d 210, 231 (6th Cir. 2009) ("Uncertainties built on so many other uncertainties cannot show a substantial risk of severe pain and needless suffering."). However, rejecting "speculation" or "[u]ncertainties built on so many other uncertainties" is not the same as demanding a showing of "scientific consensus." No other circuit imposes such a stringent requirement. And, in my view, our case law has conflated a demanding legal standard with the factual question of whether a scientific consensus exists. Establishing a scientific consensus is not required under Supreme Court precedent and, in this context, it is a nearly impossible standard for prisoners to meet.

The Supreme Court repeatedly uses the term "risk" in describing what a prisoner must show to prevail on an Eighth Amendment method-of-execution claim. See Glossip, 576 U.S. at 877 (explaining that a plaintiff must show "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" (cleaned up) (quoting Baze, 553 U.S. at 50)). It may be that the use of the word "risk" reflects the inherent uncertainty involved—both in the fact that the potentially harmful state action has not yet occurred and in the fact that all science carries a degree of uncertainty. Moreover, the Supreme Court has suggested that

courts are ill-equipped to assess whether the scientific community has reached a "consensus" on a particular issue. See id. at 882 ("[C]hallenges to lethal injection protocols test the boundaries of the authority and competency of federal courts. Although we must invalidate a lethal injection protocol if it violates the Eighth Amendment, federal courts should not 'embroil themselves in ongoing scientific controversies beyond their expertise.'" (cleaned up) (quoting Baze, 553 U.S. at 51)); Baze, 553 U.S. at 105 (Thomas, J., concurring) ("Which brings me to yet a further problem with comparative-risk standards: They require courts to resolve medical and scientific controversies that are largely beyond judicial ken."). But here, there is an additional layer of "risk": current execution protocols—including Arkansas's—involve the administration of drugs at dosages that have never been tested in humans and likely never will be.

The uncertainty about midazolam's ceiling effect in this case exemplifies the problem with demanding a "scientific consensus." The prisoners' experts testified that midazolam likely has a ceiling effect at doses between 20 mg to 40 mg. The State's experts opined that there are no human studies confirming a ceiling effect for midazolam and sought to undermine the studies relied on by the prisoners by emphasizing that those studies did not administer 500-mg doses of midazolam. The district court ultimately concluded that, "[e]ven if there is general medical consensus that Midazolam has a ceiling effect, there is no such consensus on the dose of Midazolam at which a ceiling effect is exhibited."[4] But again, one of the reasons for this lack of consensus is the lack of reliable clinical studies. And Dr. Antognini, one

[4]Of course, the existence of a ceiling effect and the dose at which it is reached are relevant only if there is some lower dose at which a person would remain aware of painful stimuli. Moreover, "the precise *dose* at which midazolam reaches its ceiling effect is irrelevant if there is no dose at which the drug can, in the Court's words, render a person 'insensate to pain.'" See Glossip, 576 U.S. at 964 (Sotomayor, J., dissenting).

of the State's experts, acknowledged the "ethical issues" of using large doses of midazolam in human studies. He testified that "you would have to give more [midazolam] to really say that there's a true ceiling effect" but added that "they can't do that" because study "volunteers would take a long time to wake up" and "[t]he ethics committee would never approve that." Because a study using 500 mg of midazolam cannot be conducted, there will continue to be a degree of speculation—and thus a lack of consensus—about the effect of such a dose. At least where the science is now, the only "studies" using such a high dose of midazolam will be the execution of prisoners—individuals who will be paralyzed during the administration of subsequent drugs and unable to explain afterwards whether they experienced any pain. See In re Ohio Execution Protocol, 860 F.3d at 887 (calling it "obviously correct" that "there are not now and never will be clinical studies of the effect of injecting 500 mg of midazolam into a person" and "we certainly cannot ask the executed whether they experienced pain after the injection of midazolam" but nevertheless emphasizing that "the applicable legal standard requires the plaintiffs to prove their allegations to a high level of certainty").

In choosing an execution protocol, states can select dosages that have not been reliably studied, and experts will likely continue to disagree about the effect of those dosages on human subjects and about the degree of uncertainty involved. That is, of course, the nature of science and the scientific method. But if those disagreements persist—and based on the evidence presented in this case, a reliable study that would answer the midazolam ceiling effect question is not currently possible—it is unclear how a prisoner could ever prevail in a method-of-execution challenge to a lethal injection protocol under this circuit's current standard.
