

## PERSPECTIVE ROUNDTABLE

# Physicians and Execution — Highlights from a Discussion of Lethal Injection

Atul Gawande, M.D., M.P.H., Deborah W. Denno, Ph.D., J.D., Robert D. Truog, M.D., and David Waisel, M.D.

*On January 14, 2008, the Journal hosted a videotaped roundtable discussion ([www.nejm.org](http://www.nejm.org)) of the issues raised by Baze v. Rees, currently before the Supreme Court, that asks whether the three-drug protocol used to carry out the death penalty by lethal injection causes unnecessary pain and suffering in violation of the Constitutional ban on cruel and unusual punishment. Moderator Atul Gawande was joined by law professor Deborah Denno, anesthesiologist-ethicist Robert Truog, and anesthesiologist David Waisel. What follows are highlights of their discussion about lethal injection, the current protocol, possible alternatives, and the role of physicians and other health care professionals in putting convicted criminals to death. The video, along with a related reader poll and an interactive timeline, can be found at [www.nejm.org](http://www.nejm.org).*

## THE PROTOCOL

*Dr. David Waisel:* The three-drug protocol is based on what was considered a normal induction of anesthesia when it was developed. [The first drug is] thiopental, also known as sodium thiopental or pentothal, which is a barbiturate, which is designed to put you to sleep, create amnesia and anesthesia. Second comes pancuronium bromide, which is designed to paralyze the muscles. And the third drug, which is not a drug used in anesthesia, is potassium chloride, which is designed to rapidly stop the heart. The doses used are massive compared to the doses that would be used in a normal anesthetic induction.

*Dr. Atul Gawande:* You raised, Dr. Truog, [the question of] whether these are the right drugs.

*Dr. Robert Truog:* We've taken a pretty strong stand that paralytic agents have no role in end-of-life care. The concern is that they can mask the behavioral signs that we look to, as to whether or not a patient is comfortable. And we are deeply committed to making sure that patients are comfortable and as free of pain and suffering as possible during the dying process.

And since we have medications that do relieve pain, that do sedate perfectly adequately, there's no need to be introducing paralytic agents into end-of-life care. . . . It's completely inappropriate to treat those signs and symptoms with a paralytic agent. I think that's just as true in the execution chamber as in the hospital.

*Professor Deborah Denno:* According to the state, pancuronium bromide is used in order to enhance the dignity of the inmate who's dying, because without pancuronium, there might be some jerking or involuntary movements that would disturb some of the witnesses. That I find problematic, and Justice Stevens certainly did.

*Dr. Truog:* From the point of view of the inmate, the argument seems bizarre. Imagine saying to the inmate, "You have a choice. You can either be assured of a pain-free death, and you may have some twitching and grimacing, or we can expose you to the risk of an excruciating death, but we'll make sure that you don't twitch or grimace." I can't imagine that an inmate would actually consider that to be a real choice.

## ALTERNATIVE APPROACHES

*Dr. Truog:* The number one alternative that's been proposed has been a very large dose of a barbiturate. A number of experts have said that 2 or 3 or 5 g of pentothal is absolutely going to be lethal. The fact is that, at least in this country, none of us have any experience with this. And if you look at a country where they do have some experience with it, their findings are pretty concerning.

If we go to Holland, where euthanasia is legal, and look at a study from 2000 of 535 cases of euthanasia, in 69% of those cases, they used a paralytic agent. Now, what do they know that we haven't figured out yet? I think what they know is that it's actually very difficult to kill someone with just a big dose of a barbiturate. And, in fact, they report that in 6% of those cases, there were problems with completion. And in I think five of those, the person actually woke up, came back out of coma.

## LETHAL INJECTION AND THE EIGHTH AMENDMENT

*Dr. Gawande:* Professor Denno, [you've written that] in turning to this three-drug protocol back in 1977, "The law turned to med-



icine to rescue the death penalty.” What did you mean by that?

*Professor Denno:* Lethal injection came about in 1977, a year after the United States Supreme Court decided that there would no longer be a moratorium on the death penalty. And there had been acknowledged problems with electrocution and lethal gas, because of the visual side effects of those methods.

By virtue of coming up with a method of execution that makes an inmate look serene, comfortable, and sleeping during the death process, the death penalty in this country was rescued. The presence of doctors, their involvement, and the association with medicalizing the procedure enhanced its Constitutional acceptability.

*Dr. Gawande:* What does it mean to be not cruel and not unusual punishment [in compliance with the Eighth Amendment]?

*Professor Denno:* The Eighth Amendment has never said, nor have the petitioners ever argued, that executions are to be pain-free. The question is whether or not that pain is unnecessary, whether there are alternatives.

*Dr. Gawande:* Chief Justice Roberts asked, “Do you agree that, if the protocol is properly followed, that there is no risk of pain?”

*Dr. Waisel:* Define “properly followed.” In other words, the protocols list that this should happen and that should happen. But does that mean if everything happens correctly, if there are no problems with insertion of intravenous catheters, if there’s no problem with mixing up the medications, there’s no problem with delivery of the medications? Then, yes, it would be pain-free.

#### RISK OF ERRORS

*Dr. Truog:* I think the issue here is that people go to school for a long time and do years of training in order to be able to do this well. And certainly, everything that I’ve read is that the training for the people that are doing it in lethal injection is nowhere near adequate.

*Dr. Gawande:* In Kentucky, they have responded to the request by physicians not to have physicians involved. And so it’s staffed entirely by phlebotomists and emergency medical technicians. So how likely is it that errors will occur? By one measure, there have been 40 botched executions out of a little over 900, which suggests a 4-to-5% rate of failure.

*Dr. Waisel:* We have no idea what the error rate is, because there is no oversight, there is no public reporting. And the information [I] hear worries me. For example, I

believe the case was from Missouri, in which they pushed the three drugs, and the inmate didn’t go to sleep. And [they] realized the strap holding the arm was functioning as a tourniquet. So they loosened it up, all the drugs came in at once. Now in that case, I’m highly confident that the inmate experienced a great deal of pain from the potassium chloride. And so I think that your 4-to-5% number is dramatically underestimated.

*Dr. Truog:* Putting an IV in is not as easy as it may sound. And being certain that it continues to remain in the same place also requires quite a bit of experience, because these catheters can become dislodged, they can go into the tissue, and then they won’t work anymore. Furthermore, we know that many of these inmates, by virtue of their history of drug abuse or obesity or being muscular, can be very difficult to start IVs in.

In a hospital setting, we have a lot of different ways of approaching the situation when we can’t get an IV in. Most commonly, we’ll just put in a central venous line. But that requires a great deal of training. The mixing, the administration of the medications [are] routine in any operating room in this country, but far from routine if you haven’t done it before.

One of the mistakes that I know has occurred happened to me early in my training, when I

injected the paralytic agent too quickly after the pentothal, and they precipitated in the tubing. The tubing turned into a piece of concrete. Suddenly, I had no IV. And thank goodness, I was surrounded by very experienced anesthesiologists who stepped in, within moments had another IV. But I know that that has happened in executions, and it could be a disaster.

*Dr. Gawande:* The petitioners [noted that for] the 3 g of thiopental, no one makes 3 g syringes, so you have to constitute it from small vials of 0.5 g of powder. And several times, whether it's doctors or non-doctors involved, they've simply mixed it up wrong and ended up with much lower doses than they thought.

In Kentucky, the risk of IV infiltration is exacerbated, because they use several feet of tubing, and everybody leaves the room and sits behind a screen where you can't see the IV sites or monitor how well things are flowing in. And finally, they didn't have a plan to monitor the depth of anesthesia when you don't have anybody standing there. And to

the extent that there is someone there, they're not used to being able to assess this.

**PHYSICIAN INVOLVEMENT**

*Dr. Gawande:* Now we come to this fundamental question of whether physicians should take charge, to make death less painful. Dr. Truog, what's your take on [Dr. Waisel's] question: if you were to be executed, wouldn't you rather have a capable, specialized physician doing this job?

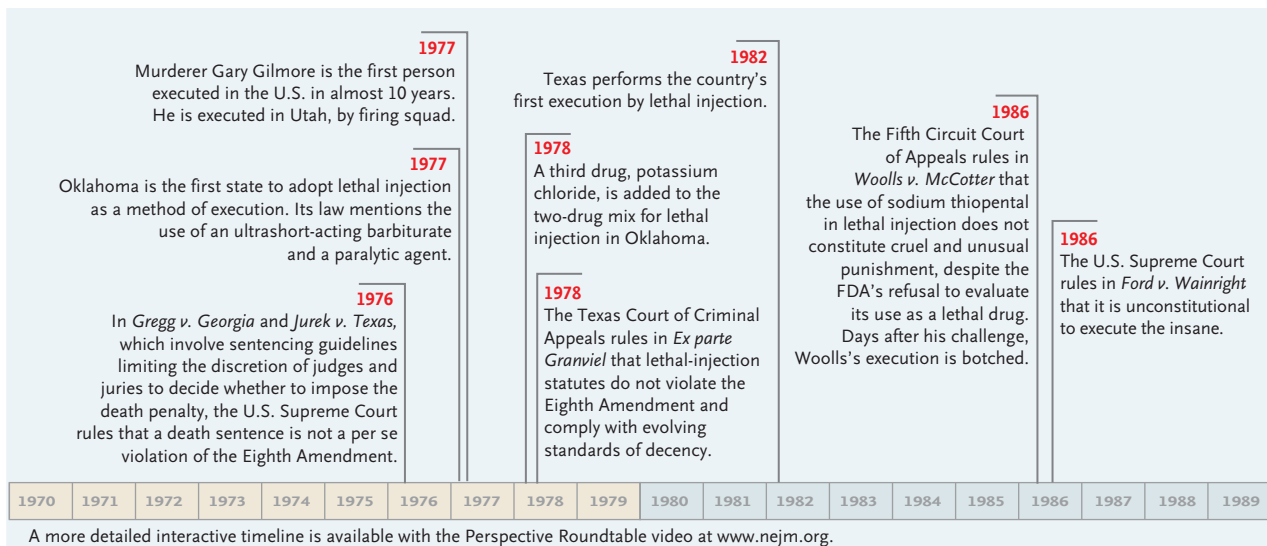
*Dr. Truog:* If I think of the kind of a hypothetical where you have an inmate who is about to be executed and knows that this execution may involve excruciating suffering, that inmate requests the involvement of a physician, because he knows that the physician can prevent that suffering from occurring, and if there is a physician who is willing to do that, and we know from surveys that many are, I honestly can't think of any principle of medical ethics that would say that that is an unethical thing for the physician to do.

*Professor Denno:* If we're going to be executing people, I would pre-

fer to have a method of execution where medical expertise would not be necessary. If we're going to, however, have a method that would be cruel and constitute suffering if we didn't have doctor involvement, then if there are physicians in the country who are willing to be involved, I would like to think that they would not be chastised or lose their license or be punished by the medical profession for volunteering to take part in an execution, to relieve suffering.

*Dr. Truog:* There's been a lot written about whether physicians should participate in torture. And of course physicians shouldn't participate in torture. But fundamentally, it's because torture is wrong. And this is [similar] to my views about physician involvement in capital punishment. While I think at one level we can justify it, I think it's to miss the bigger picture. I really believe that capital punishment is ethically wrong.

Living in the bubble of the United States, it's easy to lose sight of just how much of an outlier our country is. We stand among a small group of countries that still do capital punishment, [and] I



really don't think we want to be in their company.

**REMEDIES**

*Dr. Gawande:* When we come to this question of where can the remedy be found, the directions that seem to be posed are: We involve physicians more and let them treat the prisoner as a patient, or we come up with alternative protocols that don't involve physicians at all.

*Professor Denno:* My recommendation has been that there be a panel of experts who would propose a viable method of execution.

*Dr. Gawande:* It makes me deeply concerned, though, imagining us sitting around a table at a conference, trying to figure out various ways of executing people, and then the prospect of what that becomes, that we figure out that physicians have to be continually actively involved, and we create a specialty of the execution physician.

It may not be possible for the court to say that doctors would be allowed to really treat inmates as patients — control protocol, make judgments about how to

make the suffering less or more — and leave them free to have that professional role.

*Professor Denno:* They've been doing that for 30 years. There have been physicians involved in lethal injection since the very first execution in 1982 in this country. Because of secrecy, we'll never know the full involvement of doctors. But we have many examples of doctors having been involved, who have made these kinds of discretionary judgments about drugs or chemicals and what should be done.

*Dr. Gawande:* If the court says "We need this to go to an expert panel, with physicians, lawyers, public citizens, to determine a new protocol for execution," would you participate on that panel? And should other physicians participate on that panel?

*Dr. Waisel:* It should be wholly permissible for physicians to participate if they wish. I would have to think about it very carefully. A large part would depend on the intellectual freedom involved in the panel, the ability to write a

dissenting opinion from what the panel comes up with, and moving away from certain constraints that are put around this that seem not to permit what I would consider to be successful ways of nonphysician involvement.

*Dr. Truog:* I would not participate on that panel, because I don't think that capital punishment is ethical. I think other physicians should be free to participate on that panel. And while I wouldn't want to prejudge how they might come out, I can't imagine that they are going to be able to develop an evidence base for any other approach that is likely to be successful without the immediate presence of a physician. And then I think we have to grapple with the ethics of that.

Dr. Gawande is an associate professor of surgery at Harvard Medical School, an associate professor of health policy and management at the Harvard School of Public Health, and a surgeon at Brigham and Women's Hospital — all in Boston. Dr. Denno is a professor of law at Fordham University School of Law, New York. Dr. Truog is a professor of medical ethics, anesthesiology, and pediatrics, and Dr. Waisel an associate professor of anesthesia, at Harvard Medical School.

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