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Doctors See Way to Cut Suffering in Executions

By [DENISE GRADY](#)

A flood of lawsuits challenging lethal injection as cruel and unusual has stalled executions in some states and may prompt others to abandon them. And a Supreme Court ruling last week made it easier for death-row prisoners to file such suits.

But medical experts say the current method of lethal injection could easily be changed to make suffering less likely. Even the doctor who devised the technique 30 years ago says that if he had it to do over again, he would recommend a different method.

Switching to an injection method with less potential to cause pain could undercut many of the lawsuits. But so far, in this chapter of the nation's long and tangled history with the death penalty, no state has moved to alter its lethal injection protocol.

At the core of the issue is a debate about which matters more, the comfort of prisoners or that of the people who watch them die. A major obstacle to change is that alternative methods of lethal injection, though they might be easier on inmates, would almost certainly be harder on witnesses and executioners.

With a different approach, death would take longer and might involve jerking movements that the prisoner would not feel but that would be unpleasant for others to watch.

"Policy makers have historically considered the needs of witnesses in devising protocols" for execution, said Dr. Mark Dershwitz, a professor of anesthesiology at the [University of Massachusetts](#) who has testified about the drugs used in lethal injection.

"There's an innumerable long list of medications that can be given to cause someone to die," Dr. Dershwitz said. But, he added, the emphasis on ensuring a speedy death may have prevented states from considering all the options.

Deborah W. Denno, a [Fordham University](#) law professor who is an expert on execution methods, said speculation about whether any states would change their procedures was "the question of the moment." Professor Denno said some states might tinker with their procedures just enough to avoid court cases.

And Dr. Jay Chapman, a forensic pathologist who created the nation's first lethal injection protocol, in Oklahoma in 1977, said that were he to do it once more, he would not recommend the three-drug concoction now in widespread use.

Instead, Dr. Chapman said, an overdose of one drug, a barbiturate — the method veterinarians use to end the lives of sick animals — would painlessly cause prisoners to lose consciousness, stop breathing and die. "Hindsight is always 20/20," he said.

Even some opponents of the death penalty favor such a change in lethal injection technique, reasoning that if execution cannot be banned, it should at least be made more humane.

Dr. Chapman's original approach, still the policy in the federal prison system and in most of the 37 death-penalty states that use lethal injection, calls for an overdose of a barbiturate, sodium thiopental, which causes unconsciousness and in sufficient doses can also halt breathing. The sodium thiopental is followed by two other drugs: pancuronium bromide, or Pavulon, which causes paralysis and halts breathing as well, and potassium chloride, which stops the heart within seconds.

But opponents of lethal injection say that in some cases, the second and third drugs may cause severe suffering. They argue that the drugs may be mishandled because most doctors and nurses refuse to participate in executions, leaving the responsibility to people with less training.

If the sodium thiopental did not work because the dose was too low, for example, or if the drugs were given in the wrong order, an inmate could still be conscious when the paralyzing drug and the potassium were injected. In that case, the paralyzing agent would cause a feeling of suffocation. And the potassium chloride would cause a burning sensation, muscle cramping and chest pain like that of a heart attack.

The pain from the potassium would not last long: once the drug stopped the heart, the person would lose consciousness in 10 to 15 seconds, Dr. Dershwitz said. But while the pain lasted, the inmate would be paralyzed and unable to complain, and would appear serene to witnesses.

Pavulon "gives a false sense of peacefulness," said Dr. David A. Lubarsky, chairman of anesthesiology at the [University of Miami](#).

Indeed, because drugs like Pavulon can mask suffering, many states outlaw them for animal [euthanasia](#).

Execution by barbiturate alone would take longer than the current method, Dr. Dershwitz said. Although prisoners would quickly lose consciousness and stop breathing, they could not be pronounced dead until electrical activity in the heart had stopped. That could take as long as 45 minutes.

In addition, Dr. Dershwitz said, barbiturates could cause "significant involuntary jerking" that would be disturbing to witnesses even though an unconscious prisoner would not feel it.

Intravenous barbiturates are not the only option, Dr. Dershwitz said. Drugs could also be injected into a muscle instead of a vein, to avoid another source of lawsuits: pain among inmates whose veins are hard to find. But injection into a muscle would take much longer to work than the intravenous method.

Another possibility might be an oral dose of barbiturates, like those doctors in Oregon can prescribe to assist [suicide](#) of some terminally patients. But prisoners would have to swallow the pills, and Professor Denno said there had never been a procedure in which prisoners had been required to participate in their own executions, essentially agreeing to commit suicide.

Dr. Chapman said that when he first proposed the three-drug technique, he imagined that it would be carried out by people with enough medical training to start intravenous lines, mix and measure the drugs, and give them in the right order.

He was then Oklahoma's chief medical examiner, and came up with the formula at the request of a legislator who was looking for a humane alternative to the electric chair. His idea became law in Oklahoma and was also adopted by 36 other states.

Once the lethal injection laws were passed, professional groups like the [American Medical Association](#), state medical societies and associations for anesthesiologists and nurses quickly distanced themselves, saying it would be unethical for members to participate. That creates a Catch-22 in which the medical establishment refuses to perform lethal injections and yet says no one else is qualified to do so.

Although some doctors and nurses do help in executions, lethal injection in many states is carried out by paramedics, technicians or other prison employees who do not have special training in [anesthesia](#).

Dr. Chapman said that his original protocol had called for enough barbiturate to cause death by itself and that he had added the Pavulon just as a backup, and the potassium chloride to speed the process by stopping the heart quickly. "I think the whole concept of execution is that it's carried out rapidly," he said.

Whether inmates have actually felt pain or suffocation from lethal injection is not known with certainty.

"I don't think any human has had a giant bolus of potassium chloride injected and then come back to chat about it," Dr. Lubarsky said.

But in February a federal judge in California said execution records showed that some prisoners might have suffered. He gave the state two options: either a doctor had to be present to make sure a condemned inmate was unconscious before the second and third drugs were injected, or the execution had to be performed with sodium thiopental alone.

California found two anesthesiologists who agreed to attend its next scheduled execution, of Michael

Morales, a murderer. But both doctors later withdrew, and the state said it could not find other medical experts to help carry out the sentence. The execution has been postponed at least until September, when the court will examine the state's lethal injection protocol.

In challenging the protocol, Mr. Morales's lawyer, the onetime Whitewater prosecutor [Kenneth W. Starr](#), cited an article published last year in *The Lancet*, a British medical journal. The main author was Dr. Lubarsky.

The researchers obtained toxicology reports on blood taken after death from 49 executed prisoners in four states, and found that 43 percent had levels of sodium thiopental so low that they might have suffered during execution.

"The data suggest that some people are awake," Dr. Lubarsky said.

But other anesthesiology experts, even some who oppose the death penalty, have challenged the findings, saying many of the blood samples were taken too long after death to give a reliable measure of what the drug's level was during execution.

Dr. Lubarsky acknowledged that the findings were being disputed and said he and his colleagues were doing additional research.

"We may find that we're wrong," he said. "We'll continue to search for a better understanding of what's going on, one that will hopefully help inform and guide the discussion taking place around this issue."

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