Exhibit 6

IN THE CHANCERY COURT
OF DAVIDSON COUNTY
STATE OF TENNESSEE

ABU-ALI ABDUR'RAHMAN,)
Plaintiff)
)
VS.) CASE NO. 02-2236-III
)
DON SUNDQUIST, ET AL.,)
Defendants)

Transcript of Proceedings

Heard before
CHANCELLOR ELLEN HOBBS LYLE

May 30, 2003

VOLUME 4

VOWELL & JENNINGS COURT REPORTING
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Nashville, Tennessee 37201

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MR. CROWNOVER: Your Honor, the defendant will call Dr. Bruce Levy.

THE COURT: Dr. Levy, the procedure we are going to follow with you is, first, you will be administered an oath. After you take an oath, you'll be seated in the witness stand where the lawyers will ask you questions. Do you understand that the oath requires you to tell the truth?

THE WITNESS: Yes, ma'am.

THE COURT: Thank you.

DR. BRUCE P. LEVY,

was called as a witness, and after having been first duly sworn, testified as follows:

DIRECT EXAMINATION

QUESTIONS BY MR. CROWNOVER:

Q. Please state your name.

A. My name is Bruce Phillip Levy.

Q. Now, Dr. Levy, what is your educational background?

A. I received a bachelor of science degree in chemistry at MIT, followed by my doctor of medicine degree from New York Medical College. After graduating medical school I attended a four-year residency in

anatomic and clinical pathology at the University of Massachusetts Medical Center. During my residency I served my final year as chief resident and spent an additional six months of training in the area of clinical toxicology and therapeutic drug monitoring. I then went on to do a one-year fellowship in forensic pathology with the New York City medical examiner's office.

After completing my training I sat for and successfully passed a series of examinations and am board certified by the American Board of Pathology in anatomic pathology, clinical pathology and forensic pathology. Since that time I have continued with continuing education on a regular basis in various areas of pathology and forensics, as well as more recently actually participating as an instructor in many of those settings.

Q. Dr. Levy, are you licensed to practice medicine in the state of Tennessee?

A. I am.

Q. And for how long have you been so licensed?

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A. Since 1997.

Q. Now, what is your specialty again, Dr. Levy?

A. Forensic pathology.

Q. Now, you were present yesterday during the testimony of Dr. Heath, were you not?

A. I was.

Q. And you were present for his entire testimony, weren't you?

A. Yes, I was.

Q. Now, how does your field of expertise differ from that of Dr. Heath?

A. Dr. Heath is an anesthesiologist. He is specialized in a particular area of medicine that concerns itself with putting patients in a condition where they can be properly operated on and also many anesthesiologists deal with pain management. I didn't know specifically, Dr. Heath didn't mention that, but he may also be trained in that area of anesthesiology.

As a forensic pathologist I'm much more a generalist than Dr. Heath. I have to understand all different areas of medicine

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in order to be able to interpret lots of different disease processes. And then my training was focused down on the study of injury patterns and disease patterns, and the determination of the cause and manner of death of individuals that are brought under medical examiner jurisdiction.

Q. Dr. Levy, where are you presently employed?

A. I'm presently employed in several capacities. I'm the chief medical examiner for the state of Tennessee, the county medical examiner for the metropolitan government of Nashville, Davidson County. And I'm also employed as the president of a private professional corporation, Forensic Medical.

Q. Could you briefly describe your duties as the county medical examiner for Nashville, Davidson County?

A. My responsibility as the county medical examiner is to investigate deaths within Davidson County that fall under the jurisdiction of the medical examiner. We have approximately 3,000 deaths reported to

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our office in a given year. Out of those 3,000 deaths, approximately 1,000 fall under the jurisdiction of the medical examiner.

Those bodies would be brought to our office. Before that if the death was outside of a health care setting, we would conduct a scene investigation at the location of the death. When the bodies are brought in a determination is made as to whether a complete autopsy is required or a lesser examination than a complete autopsy. We autopsy for Davidson County approximately 725 persons in any given year.

Then we would order any additional tests necessary, frequently consult with law enforcement and other physicians and medical personnel in order to put all that information together and determine the cause and manner of death of those people.

Q. Dr. Levy, what are your duties as the chief medical examiner for the state of Tennessee?

A. As the chief medical examiner my responsibilities are to maintain the archive of all the death investigations conducted by

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all 95 county medical examiners and to provide the county medical examiners, state, county and local governments with consultative expertise in forensic pathology, as well as education. And we conduct a large number of seminars throughout the state on a yearly basis.

Q. Dr. Levy, how many employees do you have?

A. We currently have 23 employees in our office.

Q. Okay. Are there other physicians that are on your staff?

A. Yes, there are.

Q. And how many are there?

A. There are currently five other physicians on staff. Four of those physicians are board certified pathologists like myself. The fifth physician is a fellow. We were recently about two years ago accredited to actually train physicians in forensic pathology and we have a physician we are currently training in that field.

Q. Now, how long have you been county

medical examiner?

A. Since 1997.

Q. And how long have you been chief medical examiner for Tennessee?

A. Since 1998.

Q. Okay. Now, in your capacity in both of these positions have you previously given testimony in the courts of Davidson County in that capacity?

A. I have.

Q. And you have familiarity with the way that the Tennessee lethal injection protocol is carried out?

A. I do.

Q. And how do you have that knowledge?

A. Several years ago when it became apparent that an execution was likely to occur in Tennessee, we were contacted by the department of correction. I believe specifically Warden Bell. And we sat down with him and went over what our involvement would be as the county medical examiner in the county where those executions would be carried out.

As part of that I went over the

procedures so in as far as they would relate to what I would need to know as a forensic pathologist. We toured the facilities where the execution would be carried out so we would gain an understanding of exactly what might happen and what we would expect, and then eventually made arrangements with the warden to be available.

We are available on the prison property at the time the execution is carried out, though we do not witness the execution, and then would remove the prisoner from the facility after death was declared and transport that person to the medical examiner's office for an examination.

Q. Now, have you reviewed what's been called the Tennessee lethal injection manual?

A. I have.

Q. And have you also reviewed any interrogatory responses by Warden Bell in this case?

A. I believe I did get to see them, yes.

Q. Have you read other literature on

lethal injections?

A. Well, as part of the preparation for our involvement in any executions that might occur in Tennessee, I contacted medical examiners throughout the country who had been involved in the process, and had gotten their input into how they were involved, how involved were they, what they did and what they had observed based on their examination of prisoners who had been executed by a variety of methods.

Q. Now, what drugs are administered in the Tennessee lethal injection protocol?

A. The drugs are sodium pentothal, Pavulon and potassium chloride.

Q. Do these three drugs have therapeutic uses in medicine?

A. They do.

Q. Is it legal to prescribe and dispense these medications in Tennessee, to your knowledge?

A. They all are, yes.

Q. Are there effects well-known?

A. Yes. The effects are very well-known. These drugs have been around

for many, many years.
Q. Okay. Describe the use of sodium pentothal. What is it?
A. Sodium pentothal is an ultrafast-acting barbiturate. You've probably heard this already. It is most commonly used in the induction of anesthesia. It basic mechanism of action is to depress the central nervous system and can render a person unconscious. It also acts as a respiratory depressant. It depresses the breathing of a person and in sufficient doses can actually stop a person's breathing.
Q. Describe the use of sodium pentothal in the execution context.
A. According to the protocol five grams of sodium pentothal are injected into the condemned prisoner by an IV push mechanism.
Q. Do you have an opinion as to whether that dosage of sodium pentothal is lethal?
A. I do.
Q. And what is your opinion?
A. It's my opinion that that dosage of sodium pentothal in and of itself would be

lethal to an average human being.
Q. And if that dosage was administered to a human being, how long would it take the human being to become unconscious?
A. Under five seconds.
Q. Do you have an opinion as to whether a condemned prisoner given five grams of sodium pentothal would regain consciousness?
A. I do.
Q. And what is your opinion?
A. It's my opinion that the condemned prisoner would never regain consciousness. The respirations would be so depressed that the person would pass into a coma and expire as a result before they would regain consciousness.
Q. Now, describe the use of Pavulon. What is that?
A. Pavulon is a neuromuscular blocking agent. It acts to effectively block the nerve impulses from getting the muscles to actually contract.
Q. And how much Pavulon is administered in the Tennessee lethal injection protocol?
A. I think my recollection is it's

either 100 or 200 milligrams. I can't recall exactly.
Q. Now, are you aware of the use of Pavulon in euthanasia?
A. Yes, I am.
Q. Okay. Tell us about that.
A. As a medical examiner we frequently see persons who have been euthanized as part of medical treatment. It's an area that's very grey in medicine. There are many people who are terminally ill who may have suffered irreversible brain damage and many of those people are typically given large doses of some kind of an opiate pain reliever like morphine to relieve their pain.
That drug also has the ability to depress respirations and cause death by respiratory failure. I'm aware since I've been in Nashville of at least one case where a physician also administered Pavulon to a patient to hasten the death of that patient.
Q. Now, describe the use of potassium chloride. What is that drug?
A. Well, potassium chloride is a salt

and it is typically used in medical practice to adjust potassium levels in people whose potassium levels for one reason or another are not within the proper range. And not having potassium in the proper range can be fatal to a person, but in large doses potassium chloride is fatal. It works on the heart to actually stop the heart from beating.
Q. Do you recall what the dosage of potassium chloride is in the Tennessee lethal injection protocol?
A. I believe it's 200 milligram or milli equivalence of potassium chloride.
Q. Now, is saline used in the Tennessee lethal injection protocol?
A. It is.
Q. And for what purpose is the saline used, to your knowledge?
A. I have an opinion on why it's used. I don't know why it's used.
Q. What is your opinion as to why it's used?
A. My opinion would be that the saline is used to flush out the line between the

different drugs to make sure that those drugs have completely passed into the person's system before the next drug is administered.

Q. Now, Dr. Levy, do you have an opinion as a medical doctor as to whether a condemned prisoner after having been given these three drugs in the dosages you stated, the sodium pentothal, the Pavulon, and the potassium chloride, would the condemned prisoner perceive any feeling or pain from the subsequent administered -- well, strike that question. I got lost myself.

In your opinion, Dr. Levy, after the administration to a condemned prisoner of the sodium pentothal in the dosage that you stated was in the Tennessee lethal injection protocol, would that condemned prisoner feel any pain subsequent to the administration of the Pavulon and the potassium chloride?

A. In my opinion he would not.

Q. Now, you're familiar as a medical doctor with the procedure of inserting an IV catheter, aren't you?

A. Yes, I am.

Q. And describe how it's done briefly.

A. Well, very briefly, first, the arm or other part of the body that you'd like to insert an IV is examined in order to find the best place to make the attempt to insert the IV catheter. A tourniquet would be applied to cause the vein to become engorged which would make the intravenous stick easier. The area would be wiped with something like alcohol to sterilize the area and then the catheter with the needle would be inserted into the vein. And there are different types of catheters and processes and it would go through the skin and into the vein.

After you got that into the vein, you would ensure that it's in the vein by withdrawing a small quantity of blood making sure you're actually in the vascular chamber. Having confirmed that, you would hook up the IV tubing and then tape down the catheter to secure it in place.

Q. In your opinion is it difficult to insert an IV?

A. No, it is not difficult to insert an

IV.

Q. In your opinion can there be complications when an IV is inserted?

A. Yes. There are complications to every medical procedure.

Q. And what sort of complications can there be when an IV is inserted?

A. Well, you can miss the vein. You can not get the catheter in the proper location. You can actually instead of getting it into the vein, perforate through the vein and out the other side of the vein. You could get it stuck in the wall of the vein where it's not, again, in the vein itself. You can cause bleeding as a result of that. You can get swelling in the area. I mean, those are basically the complications at the intravenous site.

Q. Are there certain persons upon whom an IV is attempted to be inserted that there would be a problem?

A. Well, certain people do tend to have more difficulty in having IV's inserted than others, yes.

Q. If a person were, for example, an IV

drug user, would that be tough to insert an IV catheter in that person's arm?

A. It can be. If the IV drug abuser has been using contaminated needles to inject intravenous drugs, that can cause scarring of the veins and that would make it very difficult to insert an intravenous catheter into that same area of the vein.

Q. In your opinion, Doctor, would it be reasonable to assume that a paramedic EMT with training in inserting IV catheters would not have difficulty inserting an IV catheter on a person who is not an IV drug abuser?

A. I would say that not only they would have no trouble, but they do it all the time here in Tennessee.

Q. Dr. Levy, are you familiar with the surgical procedure called a cutdown?

A. I am.

Q. What is a cutdown?

A. A cutdown is a minor surgical procedure where an incision is made in the skin to directly visualize a large vein, such as one in the upper leg or in the

shoulder or neck area. And then to directly insert the catheter into the vein once you have visualized it.
Q. In your medical training have you received training in making a cutdown?
A. I did.
Q. Now, why is the cutdown used?
A. Well, the cutdown is used in cases where they are unable to --
MR. MACLEAN: Your Honor, I'm going to object to this. He's talking about the present tense. I think Dr. Levy did receive some training when he was in medical school some years ago, not since that time. And he does not perform cutdowns and he's not in a venue where cutdowns are performed in his current practice.
THE COURT: The Court will sustain the objection. If you can ask the Doctor some validation questions so I can assess the reliability of his testimony concerning cutdowns, you know, in terms of his familiarity with recent ones, his training. That way I can assess how much weight I should put on his testimony.

BY MR. CROWNOVER:
Q. Doctor, when did you receive training in performing cutdown procedures?
A. It was during medical school. That was between the years 1984 and 1988.
Q. Okay. Now, to your knowledge is the cutdown procedure still used by medical doctors?
A. It is. I see it frequently on bodies that come to the medical examiner's office.
Q. Okay. And you've seen it frequently in the last year, haven't you?
A. Yes, I have.
Q. Okay. Now, in your opinion is a cutdown a complicated procedure for a medical doctor to perform?
A. No. It's a fairly simple procedure. You need to have a knowledge of anatomy so you know where to cut and you know what structures are in the area so you're unlikely to make an error. And then you just need to use, on a living person, basic sterile technique to avoid the possibility of any type of infection.
Q. Now, Dr. Levy, you testified earlier

that you heard all of Dr. Heath's testimony yesterday. Correct?
A. Yes, I do.
Q. And you heard Dr. Heath's opinion that the administration of the potassium chloride of the three drugs that are to be administered in the Tennessee lethal injection protocol would be the cause of death if all three drugs were administered. Did you hear that testimony yesterday?
A. Yes. I believe that was his testimony.
Q. Now, in your opinion is that correct?
A. No. I would disagree with Dr. Heath in his opinion that the cause of death of a person who undergoes lethal injection is merely potassium chloride.
Q. And what is your opinion as to a person that is administered the three drugs that are in the Tennessee lethal injection protocol as to cause of death?
A. My opinion is, and it was the cause of death I ruled on Mr. Coe, was a combination of the three medications administered as part of the lethal injection

protocol.
Q. Now, to your knowledge and based upon what you heard from Dr. Heath yesterday does Dr. Heath have any expertise in determining cause of death?
A. Not that he indicated.
Q. Now, in your capacity as the county medical examiner in Nashville, Davidson County, did you conduct the autopsy of Robert Coe?
A. I did.
Q. And who was Mr. Coe?
A. Mr. Coe was a prisoner in the Tennessee Department of Correction who had been sentenced to death many years ago and was executed in April of -- I can't recall if it was 1999 or 2000.
Q. Okay. Well, let me refer you to --
A. I believe it was 2000.
Q. -- plaintiff's Exhibit 16. Your Honor, I believe it's the large notebook.
THE COURT: Yes, sir. That's the large notebook.
BY MR. CROWNOVER:
Q. And, Dr. Levy, if you would look at

pages starting on 567, I believe, is the autopsy report through Page 580 and they're numbered in the lower right-hand corner.
A. Yes. I do recognize this as the autopsy report on Robert Glenn Coe.
Q. Now, why did you perform the appearance of Mr. Coe?
A. There were several reasons I performed the autopsy on Mr. Coe. First, under the Medical Examiner Act in the Tennessee Code the death of all prisoners needs to be reported to the medical examiner in the county where that death occurred, regardless of the reason for that prisoner's death.
Secondly, Mr. Coe's death represented a homicide, and under Tennessee law the medical examiner is authorized to order an autopsy on any victim of a homicide regardless of the reasons behind that homicide.
Third, as the county medical examiner for Davidson County it's my opinion that if prisoners are to be executed in Davidson County, it is my responsibility as the

county medical examiner to ensure that that death was carried out according to law and to document anything that would be usual or unusual in those circumstances.
Q. Dr. Levy, do you have an opinion as to whether the execution of Mr. Coe was carried out according to law?
A. I do.
Q. And what is your opinion?
A. My opinion is that Mr. Coe's execution was carried out according to the law.
Q. And what was the cause of Mr. Coe's death, in your opinion?
MR. MACLEAN: Your Honor, first of all, I want to object to that. That calls for a legal conclusion and I would move to strike that testimony.
THE COURT: I don't understand why you say that calls for a legal conclusion. He was asked his opinion as to cause of death and I believe he's going to tell us a medical reason. So explain to me a little more what you're objecting to.
MR. MACLEAN: I believe that the

testimony, the proffered testimony was that in his opinion the execution was carried out according to law. That is the testimony I'm objecting to. That calls for a legal conclusion whether it went according to law or not. We don't know what law he's referring to, whether it's constitutional law or whatever. That's the issue in this case. And I object to that as calling for a legal conclusion.
THE COURT: The Court sustains the objection. You need to ask him questions that would give the Court some idea of his familiarity with the standard that he says it adheres to. It is a bit -- I don't know how to gage that testimony because I'm not sure exactly what he's referring to, whether the humane aspect of the law or other things.
So the Court sustains the objection. If you want to ask him about that, you can take several questions, I think.
MR. CROWNOVER: Thank you, Your Honor.

BY MR. CROWNOVER:
Q. Now, Dr. Levy, what standard are you talking about when you said the execution was according to law?
A. It's based on my review of the execution protocol in Tennessee, specifically regarding lethal injection, and the results of the autopsy and what I would anticipate based on my review of that protocol, as well as consulting with other medical examiners in states where this has occurred many times.
Q. And as a result of your discussions with the other medical examiners and reviewing the Tennessee lethal injection protocol, did you find in performing the Coe autopsy that there were any deviations from the protocol in what should have occurred?
A. I did not find any.
Q. Now, what was the cause of death on the autopsy report here?
A. I ruled the cause of death of Mr. Coe an acute intoxication by the combined effects of pentothal, Pavulon and potassium.
Q. And is that on the first page of the

autopsy report?
A. It is.
Q. Is that delineated as Page 0567 in this exhibit?
A. It is
Q. Now, let's look at Page 2 of the autopsy report which is 0568 in Exhibit 16. What is the, at the top there, the time of death that you put in the report?
A. The time of death is reported as April 19th, 2000, at 1:37 a.m.
Q. And then there's a part there for a blank for the time of injury or illness, and what is stated there?
A. April 19th, 2000, at 1:20 a.m.
Q. Okay. Now, have you since preparing the autopsy report also reviewed a document that's called the chronological execution report?
A. Yes, I have.
Q. Okay. If I could refer you to Page 0584 in that same Exhibit 16, please.
A. I found it.
Q. Now, what is this document, to your knowledge?

A. This appears to be the chronological execution report for Robert Glenn Coe.
Q. Okay. And what sort of entries are there on this document of times?
A. The entries begin at 1:07 a.m. and end at 1:55 a.m., and list a series of steps regarding the execution process.
Q. Okay. And what time does it say that the lethal injection chemicals were injected?
A. It says 1:32 a.m.
Q. And what time was Mr. Coe examined by the physician?
A. 1:36 a.m.
Q. And what time was Mr. Coe pronounced dead?
A. 1:37 a.m.
Q. Now, in performing the autopsy of the body of Robert Coe were a number of tests performed?
A. Yes.
Q. And did your tests in the autopsy of Mr. Coe's body reveal the levels of sodium pentothal?
A. It did.

Q. And what were those levels?
A. Sodium pentothal was present in Mr. Coe's body at the level of 10,200 nanograms per milliliter.
Q. And what page is that on in Exhibit 16?
A. That is on Page 579.
Q. Now, was there also a test performed for pentobarbital in Mr. Coe's body?
A. Yes, it was.
Q. And what page is that on?
A. That is on Page 577.
Q. And what was the level of pentobarbital?
A. 1,090 nanograms per milliliter.
Q. Now, these amounts of sodium pentothal -- what is pentobarbital, first?
A. Pentobarbital is a short-acting barbiturate that is a medication in and of itself, but it is also a metabolite of sodium pentothal.
Q. Now, what is a metabolite, Dr. Levy?
A. What that means is that when a person is administered sodium pentothal the body acts upon the sodium pentothal and

chemically converts it into pentobarbital.
Q. And does the conversion to pentobarbital, does the pentobarbital work as if it were injected itself?
A. Yes. It is chemically identical and has the exact same effect as if you were administered pentobarbital as a drug itself.
Q. Now, were the levels of sodium pentothal and pentobarbital that you found in Mr. Coe's body, were they therapeutic concentrations?
A. In the case of pentobarbital it was a therapeutic concentration. In the case of sodium pentothal it was what I would call an overlap area. It is not only in the therapeutic concentrations of sodium pentothal, but is also within the toxic and lethal levels for that medication.
Q. So you found enough sodium pentothal in Mr. Coe's body to be lethal. Is that right?
A. Yes, in certain circumstances it could be lethal.
Q. Now, what does therapeutic mean, just the meaning of that word?

A. The definition of therapeutic is provided in the literature which provides these levels is the level that we would find in a human being who has been administered a dose of this medication that produces the desired effect of that medication.
Q. Do you have an opinion as to whether Mr. Coe would have been rendered unconscious after the administration of the sodium pentothal to him?
A. Yes, I do.
Q. And what is your opinion?
A. My opinion is Mr. Coe was rendered unconscious within seconds of being administered the sodium pentothal.
Q. And do you have an opinion as to when Mr. Coe would have died after the administration of the three combined drugs?
A. Well, he was pronounced dead at 1:37 a.m., so he died within five minutes of the actual injection of the chemicals beginning.
Q. And if the chemicals were injected according to Tennessee lethal injection protocol into Mr. Coe's body, do you have an opinion as to whether Mr. Coe would have

been aware of the effects of the Pavulon or the potassium chloride?
A. I do have an opinion on that.
Q. And what is your opinion?
A. It's my opinion based on the levels that were present in his body at the time of his death that he would never have regained consciousness or had any awareness of anything that happened from the moment he lost consciousness after the sodium pentothal was administered.
Q. Do you have an opinion as to whether Mr. Coe experienced any pain or discomfort as a result of receiving any of these three drugs during his execution?
A. I do have an opinion.
Q. And what is your opinion?
A. It's my opinion that he did not, again, once the sodium pentothal took effect until the time that he was dead.
Q. Do you have an opinion from the tests and examination that you performed on Mr. Coe's body whether there were any problems or complications during the lethal injection procedure?

A. I only found what I could characterize as one minor complication of the procedure, and that is I found an additional dermal puncture of the right arm meaning that they had made two attempts to put an intravenous catheter in the right arm before they were successful.
Q. And you found no other anomalies or problems?
A. No. As part of our investigation after Mr. Coe's death we went into the death chamber, we examined exactly the condition his body was in at that time. His body came to the medical examiner's office with all of the catheters and intravenous tubing and bottles and syringes in place as they were the moment of death. And we examined each and every one of them at the medical examiner's office.
Q. Well, did you find any problems with any of the IV tubing, syringes or bags?
A. No, I did not.
Q. Did it work at the time you brought it to the medical examiner's office in pushing fluids through?

A. It did. When we removed the catheters, the intravenous catheter started flowing again.
Q. Have you since April of 2000 had occasion to examine the IV tubing and other apparatus from the Coe execution?
A. Yes, I did.
Q. And when did you subsequently examine that material?
A. I examined that this Wednesday morning.
Q. So two days ago?
A. Yes.
Q. And what did you find at that point?
A. When I released all of the valves that had closed off the flow of fluid through the IV tubing and hung the bags, both bags from both arms, catheters were flowing freely.
Q. So some three years later they're still working?
A. Yes, they are.
MR. CROWNOVER: Your Honor, may I have a moment?
THE COURT: Yes, sir.

MR. CROWNOVER: That's all, Your Honor.

THE COURT: Thank you.

CROSS-EXAMINATION

QUESTIONS BY MR. MACLEAN:

Q. Dr. Levy, I'm Brad MacLean. We've met before.

A. Yes, we have.

Q. I took your deposition a few days ago.

A. Yes. I believe on Tuesday of this week.

Q. Right. Now, basically, your job as medical examiner, just to get it straight, is to investigate deaths, to perform autopsies and ultimately to determine the cause and manner of death. And you would also be involved in the identification of unknown persons. Correct?

A. That's correct.

Q. As chief medical examiner of the state you also, as you said, administer the state archive, but that doesn't involve working with people. Correct?

A. That's correct. Aside from staff

that I would work with to do that job.

Q. Right. All right. None of your duties as a medical examiner involve working with or treating live human beings. Correct?

A. There are rare instances where I would examine a living human being, but it is a rare occurrence.

Q. And, in fact, you do not work with or treat live human beings, do you?

A. No. I do not treat living human beings anymore.

Q. Okay. Just to get the time frame correct, you graduated from medical school in 1988. Correct?

A. That is correct.

Q. And you were in residency from 1988 to 1992. Correct?

A. Yes.

Q. And then had you a one-year internship from 1992 to 1993. Correct?

A. I did.

Q. All right. Now, in medical school during the second two years you went through several rotations in several different

disciplines as medical students ordinarily do. Correct?

A. That's correct.

Q. And you would spend six to eight to twelve weeks per rotation in the various disciplines. Correct?

A. Yes.

Q. And all of those rotations were under the supervision of treating physicians. Correct?

A. They were.

Q. During your four-year residency you would obtain cytology specimens and you would perform needle-type puncture biopsies in cytology procedures, and you would also participate in clinical correlations where you would see the patients, in addition to reviewing their blood smears or reviewing other tests. Correct?

A. That's correct.

Q. And you would see the patients only for the purpose of comparing samples with the patients themselves. Correct?

A. That's correct.

Q. Okay. And during the first two years

of your residency you spent about two months in total working with patients in that respect. Correct?

A. That was an approximate number, yes.

Q. And then for the second two years of your residency you would spend another two months total with patients in that respect?

A. That's correct.

Q. Comparing specimens with the actual patient?

A. Yes.

Q. Okay. But during that period of time you were never the treating physician, were you?

A. No, I was not.

Q. Okay. And during that period of time you never administered any medication, did you?

A. I did not, aside from local anesthetics if we were doing a needle-type puncture procedure.

Q. And during the following year internship in forensic pathology you never worked with live patients?

A. I did not.

Q. Okay. And since that time, 1993, you have worked with probably fewer than ten live patients. Correct?
A. That's correct.
Q. And then only to examine processes of death, to consult with the treating physician or just to gain some knowledge about the processes leading up to death. Correct?
A. That and injury patterns, yes.
Q. Okay. You're only training and experience with IV's was in medical school some 15 years ago. Correct?
A. Correct.
Q. You have never yourself administered sodium pentothal, have you?
A. I have not.
Q. You've never yourself administered Pavulon, have you?
A. I have not.
Q. You've never received any training in euthanasia, have you?
A. No, I have not.
Q. You are not aware of whether or not there is a modern state of the art for

euthanasia, are you?
A. No, I am not.
Q. Now, you are aware that Oregon permits euthanasia on humans, but you have never directly studied how they perform euthanasia in Oregon. Correct?
A. No, I haven't studied it.
Q. And you are not aware of other parts of the world where euthanasia on human beings might be allowed, are you?
A. I am not.
Q. You have no familiarity with the state of the art of euthanasia on animals or in veterinary science, do you?
A. I do not.
Q. You have made no study of lethal injection protocols in other states besides Tennessee, have you?
A. I have not.
Q. Okay. Let me ask you some questions now about your relationship to the Tennessee lethal injection protocol. In connection with executions in Tennessee your only role is to perform the autopsy after the fact, after the execution has been performed. Correct?
A. That would include taking possession of the body at the prison and transporting it to the medical examiner's office and doing a scene investigation at the execution.
Q. Okay. And then to certify cause and manner of death on the death certificate. Correct?
A. That's correct.
Q. Okay. But you are not present during the actual performance of the execution, are you?
A. Well, we have staff, a physician, which could be me, and an investigator on the prison grounds, but we are not in a position to view any part of the execution.
Q. And you did not participate in the formulation of the lethal injection protocol in Tennessee, did you?
A. No, I did not.
Q. And you were never consulted in the formulation of the lethal injection protocol in Tennessee, were you?
A. I was not.

Q. And you have no knowledge of how the lethal injection protocol was devised or formulated in Tennessee?
A. I do not, aside from what I heard earlier today.
Q. And you don't know when this basic protocol was developed originally?
A. I do not.
Q. You don't know whether there have been any changes in the basic underlying protocol involving these three drugs since it was originally developed, do you?
A. I do not.
Q. You don't know whether there has been any effort by anybody in the country in any state that has lethal injection to change the protocol to keep it up with developing knowledge or techniques in the field of euthanasia, do you?
A. I do not.
Q. You are not in a position to have an opinion on whether the protocol in Tennessee is a state of the art protocol taking into account modern medical knowledge and technique, are you?

A. I am not.
Q. You have never participated --
THE COURT: Let me ask you a question. Did I hear correctly, you said state of the art? Can you repeat that question for me --
MR. MACLEAN: Yes.
THE COURT: -- to make sure that I -- were your words state of the art?
BY MR. MACLEAN:
Q. Okay. You are not in a position to have an opinion on whether the protocol in Tennessee is a, quote, state of the art --
THE COURT: Thank you.
BY MR. MACLEAN:
Q. -- protocol taking into account modern medical knowledge and technique?
A. And I answered that I am not in that position.
THE COURT: Yes. Thank you.
BY MR. MACLEAN:
Q. You have never participated in an execution in any manner?
A. I have not.
Q. You have never been trained to

participate in a lethal injection?
A. I have not.
Q. You have never observed an execution?
A. No, I have not.
Q. If a serious problem were to arise during the lethal injection protocol during the actual performance of an execution, you would not be the person who would be called upon to intervene, would you, in Tennessee?
A. Well, not that I would expect to. Though, if I was on site as a physician and my assistance was required, I would certainly render whatever assistance I could.
Q. But you have never discussed with anybody the possibility of being called upon to assist if a complication were to arise?
A. No. We specifically discuss that other personnel would be available to perform that function, if necessary.
Q. Okay. I'd like to read to you portions of your deposition testimony. This is on Page 31 beginning at Line 6.
If a serious problem were to arise during the lethal injection protocol during

the actual performance of an execution, you would not be the person who would be called to intervene?
Answer: No, I would not.
A. That's correct.
Q. Today if by chance you were called upon to perform a cutdown, it would be your preference that someone else would do it instead. Correct?
A. Yes. I believe as I testified in my deposition, in an emergency setting I would do whatever I could to assist, but if other personnel were there, I would certainly defer to them.
Q. That's because if somebody else has had more experience more recently than you have, they're going to be the better person to do it. Correct?
A. That's correct.
Q. Because the more you have practiced a procedure and the more recently you've practiced the procedure, the better you technically should be able to perform that procedure. Correct?
A. That is correct.

Q. And that's because there is a risk of complication in the procedure. Correct?
A. There is.
Q. And if an emergency medical problem were to arise during the course of an execution, if for example during a cutdown a nerve were severed or an artery were punctured that might cause excessive bleeding, you would prefer to yield to another physician who would have greater expertise. Correct?
A. I would.
Q. Isn't the more common method of reaching a central line, more common than cutdown, the percutaneous method that Dr. Heath described?
A. Yes, it is.
Q. Now, your office in an execution does not actually declare death?
A. We do not.
Q. Now, back in medical school you learned something about the drugs used in lethal injection. Correct?
A. Correct.
Q. You learned about the preparation and

handling of these drugs just in therapeutic settings. Correct?
A. Correct.
Q. But that was between 15 and 20 years ago correct?
A. Yes, it was.
Q. And since that time you've had no experience in the handling or preparation of these drugs?
A. Not in the handling or preparation of them.
Q. So your knowledge today, for example, of how to prepare or mix sodium pentothal is just a general type of knowledge. Correct?
A. Correct.
Q. And sodium pentothal typically arrives in vials that need to be diluted and there would be a ratio of sterile water or saline that would be used to mix the sodium pentothal to an appropriate level. Correct?
A. That is correct.
Q. Calculations would need to be made as to how much to administer to a patient based upon their size and weight and purpose of administration. Correct?

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A. In a therapeutic setting that is correct.
Q. Okay. Before you would feel competent in preparing sodium pentothal for application to a human being based on your medical training, you would want to review materials before preparing the drug for administration. Correct?
A. Yes.
Q. And you are aware that these drugs have shelf lives or expiration dates. Correct?
A. Yes. All medications do.
Q. And off the top of your head you don't have any recollection of what those shelf lives might be for these particular drugs in lethal injection?
A. No, I do not.
Q. You do not feel that you have the expertise or competence to develop a protocol for performing lethal injections, do you?
A. No, I do not.
Q. And that's because you have no experience in the area of performing lethal

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injection. Correct?
A. That's correct.
Q. In your opinion in order to gain the knowledge you would need to have to develop a protocol, you would need to do a number of things, such as contacting other jurisdictions, reading technical literature, drawing upon your own medical knowledge. And you would want to have access to medical information and knowledge if you were to do something like that. Correct?
A. Yes. If I were to do that, that's what I would want to do.
Q. And you would want to consult a physician and/or a pharmacist in connection with drawing up a lethal injection protocol, wouldn't you?
A. Yes.
Q. And you're not aware whether any of those sorts of things were done by anybody who put together the Tennessee lethal injection protocol?
A. I am not aware one way or the other, aside from what I heard in terms of testimony today.

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Q. Okay. Would you please take the big binder and turn it -- the big binder. Yes, that one. If you would turn it to document number bates stamp number 201, please.
A. I have found it.
Q. All right. Now, this is a portion of the execution manual in Tennessee which lists equipment to be obtained for a lethal injection. Correct?
A. Correct.
Q. All right. Now, if you will notice, the second item is 96 inches long IV tubing with Y injection site. Do you see that?
A. I do.
Q. And the next one -- and there are 12 of those items of equipment to be acquired. Correct?
A. Yes.
Q. And then there are 12 items that are designated as 30-inch long extension tubing. Correct?
A. It's 35 inch, I believe. You misspoke, but, yes, they are there.
Q. Thank you. 35 inch. Now, in your experience as a medical student you don't

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recall that you have used -- that you have performed an IV using intravenous tubing that would be as long as 96 inches, do you?
A. No. And in most case in patients that come to our office the intravenous tubing is shorter than 96 inches.
Q. And you're not aware -- well, you weren't aware back when I took your deposition of how the tubing is set up. Correct?
A. I had just had a vague recollection at that point.
Q. Now, looking through this, would you look at the next page, Page 202 down at the bottom?
A. Yes.
Q. It says PPE size XL. Do you know what that is?
A. I don't know what the initials PPE refer to.
Q. Okay. If you look about the -- on Page 202, five lines down a chux, do you know what that is?
A. I do not.
Q. Do you know whether a stopcock was

used in the Coe execution?
A. You would have to define what you mean by stopcock before I could give you an answer to that.
Q. A valve that's used to twist around. A valve on the tubing that is twisted in order to direct the direction of the fluid.
A. There was several valves on the intravenous tubing. There was a valve where you could adjust the flow rate of the intravenous tubing, and then several things which I would call stoppers that you could slide over the tubing to stop or start flow through that point.
Q. Now, in a lethal injection process the testimony is established that there are seven syringes used in sequence on one arm and then if there's a problem, they go to the other arm and follow the same sequence involving seven different syringes. Correct?
A. Correct.
Q. Now, during your training in medical school you had never been involved in a procedure, in medical school or at any other

time, where you used seven syringes in quick sequence to inject solution into a patient, have you?
A. No.
Q. Now, if there's a push, there will be some back pressure. Correct?
A. Correct. Depending upon the diameter of the tubing and the catheter. It would vary.
Q. And also the rate of the push. That would affect pressure, wouldn't it?
A. Right. That's part of the equation of flow versus resistance.
Q. And you don't know how much pressure there would be, do you?
A. It's something that could be measured, but I don't know what it is.
Q. And depending on the circumstances the pressure might cause the fluid to go up the tube against gravity into the saline bag. Correct?
A. It is theoretically possible for that to happen, to go up the tubing. I don't know that it would reach the IV bag. It would depend upon the length of the tubing

and the volume that was injected.
Q. Now, you are not aware of whether the persons engaged in the process of actually performing the injection in Tennessee have any training or knowledge about how the valves work or what kinds of complications could arise during the course of an injection, do you?
A. I do not know what their training is.
Q. You don't know whether the persons involved in performing the actual injection have any training in how to observe or make observations to see if fluid is flowing in the wrong direction, for example?
A. Again, I do not know what the training of the personnel are.
Q. Now, one thing that -- talking about the IV now. When an IV is inserted and when it's attached to whatever devices it's attached to, one of the things that you need to look for is to see whether there is any air in the tubing. Correct?
A. Yes. You would prefer to not to have any air in the tubing.
Q. Otherwise, the air -- if an air

bubble were to be inserted into the vein, that could cause air embolisms. Correct?
A. That is correct.
Q. Now, every attachment involving every valve creates the possibility for leakage. Correct?
A. It does.
Q. And long tubing creates a heightened possibility for a crimping of the tubing. Correct?
A. Yes, it would.
Q. Now, during the time of your testimony you said that the syringes are labeled with letters. Correct?
A. I did and subsequently having reexamined the apparatus, I had misspoken during my deposition. They are actually numbers.
Q. Now, the labeling that's used for the syringes is not typical or it's not a typical or conventional method of labeling in the medical setting, is it?
A. Not in the setting of patient treatment, no.
Q. And you're not aware of any provision

in the protocol for checking the type of drug and the dosage at the various points in time: From the time the drug is mixed, to the time the drug is taken to the death chamber, to the time it is taken off the shelf and inserted in the tubing?
A. Yeah. I had no recollection of what was in the protocol regarding that.
Q. And you have no knowledge of where the solutions are to be mixed or tested. Correct?
A. Just aside from what I heard earlier today, I do not.
Q. Isn't it true that mistakes with medicines are among the most common sources of error in medical procedures?
A. They are one of the common sources. I couldn't tell if you it's the most common or not.
Q. And, typically, the people who mix the drugs need to be licensed and regulated. Correct?
A. Yes. In the case of treating patients, absolutely.
Q. Now, isn't it true that many kinds of

things can happen to a medication that can affect its shelf life?
A. Yes.
Q. If sodium pentothal has a relatively short shelf life after it is mixed, then it would fairly quickly deteriorate. Correct?
A. Yes. I believe it begins to deteriorate at the time it's mixed and would slowly deteriorate over its active shelf life once mixed.
Q. Okay. And as it deteriorates it would lose potency?
A. It would.
Q. Now, isn't it true that medical personnel are trained specifically to deal with stressful situations through their years of training and experience from medical school through residency through internship into actual practice. Correct?
A. We are.
Q. And that's one of the main -- that's an importance aspect of medical training. Correct?
A. I would consider it so, yes.
Q. And through that, that improves the

ability of physicians, for example, to deal with stressful situations. Correct?
A. One would hope so, yes.
Q. If people who perform lethal injection have not received medical training and have no medical experience, you would expect that increased stress could increase the possibility of error. Correct?
A. It could, yes.
Q. And then depending on the persons involved, you would agree that there are potentially stressful circumstances in the lethal injection. Correct?
A. I would consider it a stressful process, yes.
Q. It's stressful partly because it involves the killing of a human being. Correct?
A. Yes, it does.
Q. Possibly because the persons involves would know the inmate whose being killed. Correct?
A. They might, yes.
Q. Another stressor could possibly be that the process could get stayed by the

courts at any point during the proceeding. Correct?
A. Yes, I believe it could.
Q. And that would be a stressor. Correct?
A. It could be, yes.
Q. And that there's a considerable amount of public attention focused on the execution. That would be a possible stressor. Correct?
A. Yes, it could.
Q. And witnesses are observing the process, including the inmate's family members and the victim's family members. Correct?
A. Yes, they are.
Q. And that would be a potentially stressful situation. Correct?
A. It could be.
Q. And the time of day, 1:00 o'clock in the morning, could be a stressful circumstance. Correct?
A. It could be, yes.
Q. You have no knowledge of whether the persons who are involved in the lethal

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injection protocol in Tennessee, specifically the process of performing the injection, are trained in any fashion to have any special experience in dealing with these kinds of potential stressors?
A. I have no knowledge of that one way or the other.
Q. Now, infiltration is the phenomenon that occurs when a drug does not get inserted or injected fully into the blood vessel, but rather gets inserted into the tissue surrounding the blood vessel. Correct?
A. Well, it's not necessarily medication. It could just be the intravenous fluid itself.
Q. Right.
A. But otherwise that is correct.
Q. The intravenous fluid, when it doesn't go entirely into the blood vessel that is intended, instead goes outside the blood vessel, that's called infiltration. Correct?
A. That is one term for it, yes.
Q. And there are a number of reasons why

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the fluid, the intravenous fluid will not get into the blood vessel completely. It could be bad veins, could be punctures in the blood vessel caused by the insertion of the catheter, the incorrect location of the needle or the catheter during the process. Isn't that correct?
A. All of those are possibilities, yes.
Q. And the conditions of the -- the physical condition of the inmate, of his body and the quality of his blood vessels might also factor into problems that could arise?
A. It could, yes.
Q. The overall health of the inmate and the fragility of his veins could factor into the process. Correct?
A. It could.
Q. And even people who have not been intravenous drug users and who appear to be healthy could still, for whatever reason, have poor or difficult veins for purposes of an IV and an injection. Correct?
A. It is -- yes, it's certainly a possibility.

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Q. Now, in performing the lethal -- the IV and then the subsequent execution or injection of a fluid into the vessel, trained personnel will often use touch, which is called palpation, to ensure that the fluid is properly flowing into the vessel. Isn't that correct?
A. That is one method that can be used, yes.
Q. Now, you're not aware of whether palpation is used during a lethal injection in Tennessee to detect possible infiltration?
A. I do not know.
Q. And you're not aware of what means are used under the protocol for detecting possible infiltration, are you?
A. Under the protocol I am not.
Q. And infiltration is not always observable by the naked eye, is it?
A. It depends upon the circumstances.
Q. So it's not always observable?
A. Not always.
Q. Now, professionals are trained to monitor injections to detect infiltration,

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aren't they?
A. Yes, they are.
Q. And the training comes through education and the experience of having watched and performed them on numerous occasions. Correct?
A. Correct.
Q. You do not know what kind of training the persons who actually performed the injection under the Tennessee lethal injection protocol have for purposes of detecting infiltration, do you?
A. Not aside from what I heard earlier today.
Q. Another problem that could occur is that a catheter, the catheter which is the plastic tubing that's in the vein that is attached to the tubing could become dislodged or kinked. Correct?
A. It could.
Q. And that could happen actually during the process of the injection. Isn't that correct?
A. It is a possibility, yes.
Q. You are not aware under the Tennessee

lethal injection protocol of whether there is any monitoring of the inmate during the lethal injection process to determine whether there's been any kind of infiltration or any other type of problem, are you?
A. Not aside from what I heard earlier today.
Q. And you're not aware of any monitoring or any procedures under the protocol to determine whether the inmate is under a proper level of anesthesia before the Pavulon is administered, are you?
A. Again, aside from what I heard earlier today, I have no knowledge of it.
Q. And you're aware that -- you're not aware of any effort to determine heart rate, blood pressure or any of those sorts of things at any point during the lethal injection process. Isn't that correct?
A. Not until the point where the person would be examined to confirm death.
Q. Right. In fact, based on the Coe autopsy that you performed it would appear that no monitoring devices were used in the

Coe execution. Correct?
A. Correct.
Q. Dr. Levy, based on your knowledge of the Tennessee lethal injection protocol, you cannot say today that the protocol includes adequate procedures and safeguards to ensure that the lethal injection will proceed without an unreasonable risk of problems or complications, can you?
A. I can only speak to my knowledge of my preparation for the one execution that occurred, and the results of my examination as a result of that execution. And in that instance I found no significant difficulties with the process.
Q. Okay.
A. But there's no way to guarantee anything in any human endeavor.
Q. Let me read the question I asked you during your deposition on Page 81 beginning at line 8.
All right. Based on your knowledge of the Tennessee lethal injection protocol do you have an opinion on whether the protocol includes adequate procedures and

safeguards to ensure that the lethal injection will proceed without an unreasonable risk of problems or complications?
Answer: I don't know.
Was that your testimony?
A. Yes. And that was in regard to the protocol, yes.
Q. Thank you. Now, to your knowledge isn't it true that there are no surgical procedures in which sodium pentothal is used by itself without the use of another subsequent anesthetic?
A. I am not aware of such a circumstance.
Q. That's because sodium pentothal is just an induction drug that puts the patient immediately asleep to be followed immediately by some other anesthetic agent. Correct?
A. That is correct.
Q. Dr. Levy, you are not aware of any procedures in medicine in which Pavulon is administered to the patient before the administration of a second longer-lasting

anesthetic after the administration of the induction anesthetic, such as sodium pentothal. Correct?
A. That's correct. I'm not aware of that in the treatment of any patient.
Q. So in other words, Pavulon would never, to your knowledge, be administered while the patient is just under sodium pentothal. Correct?
A. Correct, not in a therapeutic setting.
Q. Okay. Now, you do agree that if a person were to be paralyzed from Pavulon without being anesthetized, that person would perceive what's going on and would feel pain and suffering. Correct?
A. Correct, until they lost consciousness from lack of oxygen.
Q. And that's called asphyxiation. Correct?
A. It is.
Q. And that would be an extremely unpleasant experience?
A. It would be.
Q. You are not aware, are you, of any

situation in which trained medical personnel would apply Pavulon before making sure that the patient is completely anesthetized. Correct?
A. That is correct.
Q. You are not aware of any procedure in which sodium pentothal and Pavulon are commonly used in combination without the use of some other anesthetic agent, are you?
A. I am not, outside of lethal injection protocols.
Q. Okay. Your understanding is that the primary purpose of the sodium pentothal in lethal injection is to render the condemned prisoner unconscious. Correct?
A. That is correct.
Q. So that he will not perceive pain and suffering while still alive during the administration of the other drugs. Correct?
A. That is part of it, yes.
Q. Based on your knowledge of the Tennessee protocol you are unable to draw any conclusions or make any opinions about whether, as a general matter, there are adequate procedures and safeguards in place

to ensure that the sodium pentothal will have its desired effect?
A. There are none that I am aware of one way or the other. Again, aside from what I heard testified to earlier.
Q. Okay. I just want to make sure the record is clear on this point. In your deposition on Page 91 at Line 13 you were asked this question:
Can you draw any conclusions or make any opinions about whether, as a general matter, there are adequate procedures and safeguards in place under the Tennessee lethal injection protocol to ensure that the sodium pentothal will have its desired effect?
Answer: Not as a general matter, no.
Is that your testimony?
A. If you say so, it was.
Q. In Tennessee if the lethal injection process is properly performed, then the real cause of death is the potassium. Correct?
A. I would disagree with that.
Q. I'd like to refer you to your deposition Page 93 beginning at Line 12.

Question: So in the lethal injection process if it is properly performed, the real cause of death is the potassium. Correct?
Answer: Yes.
A. I believe my answer was I would consider that the immediate cause of the death.
Q. Okay. I will read on. Do you have an opinion about the purpose for using Pavulon in the lethal injection process?
What's your answer to that?
A. Do I have an opinion as to the use of it? Yes, I do.
Q. Okay. Let me ask you this question. You don't have an opinion on whether Pavulon has any legitimate purpose in the lethal injection process, do you?
A. I don't know what the purpose of the protocol is. I can only speak to what the effect of the medication would be.
Q. Okay. Let me ask - let me read your testimony here. On Page 93, Line 19:
To your knowledge does the use of Pavulon have any legitimate purpose in the

lethal injection process?
Answer: I don't know.
Was that your testimony in your deposition?
A. It must be. I haven't had a chance to review it.
Q. Now, Pavulon by paralyzing the muscles would also paralyze all the facial muscles and all the other muscles that are used to express or indicate pain or suffering. True?
A. True.
Q. In a normal surgical operation if the patient is not paralyzed by a neuromuscular blocking agent, then there could be visual and audible signs of pain and suffering. Correct?
A. There could be, yes.
Q. But if Pavulon were used and the patient were completely paralyzed, then none of those signs would be apparent or available to the surgeon or the anesthesiologist. Correct?
A. Correct.
Q. Pavulon then could mask problems that

might arise during a lethal injection in the sense that it would prevent any visual or auditory perception of consciousness?
A. Yes.
Q. Or perception of pain and suffering?
A. That is correct.
Q. Now, you are aware of the term intraoperative awareness, are you not?
A. I am.
Q. And that means being awake while under surgery. Correct?
A. Correct.
Q. And you're aware that intraoperative awareness does occur in surgery. Correct?
A. It does.
Q. But in your training you've not had much experience in that area, have you?
A. I have not.
Q. Would you agree that Pavulon administered to a person while conscious could be a horrifying and physically excruciating experience?
A. It could be.
Q. Now, you don't know why saline is used to flush the lines, do you?

A. I don't know.
Q. You don't know why two syringes of Pavulon are used in the process instead of one, do you?
A. I do not.
Q. You don't know why two syringes of potassium are used in the process instead of one?
A. I do not know.
Q. You don't know whether these drugs if they were to mix together might crystallize, do you?
A. Aside from the testimony I heard earlier in this, I do not.
Q. Now, isn't it true that there's a potential for blood clotting if the blood flows back up into the catheter and the IV tubing? That's always a possibility, isn't it?
A. It is.
MR. MACLEAN: Your Honor, I'm very close to being finished. If I could take about a five-minute break and gather myself.
THE COURT: Yes, sir. That would be fine. Do you want for there to be a

recess?
MR. MACLEAN: I think a recess would be good just to gather myself.
THE COURT: Okay. Good. That will give Dr. Levy a chance to get down and walk around a little bit. Let's come back at 3:15. If you need more time, then just let me know and we'll give you more.
MR. MACLEAN: Okay. Thank you.
COURT CLERK: All rise. Court is in recess at this time.
(Recess taken.)
BY MR. MACLEAN:
Q. All right. Dr. Levy, if you would look at the autopsy report which begins at bates stamp Page No. 0567 in the big binder. It's under Tab 13. And you've already testified at the bottom of Page 0567 you gave the probable cause of death for Coe acute intoxication by the combined effects of the drugs pentothal, Pavulon and potassium. And then you say the same thing on 0570. Correct?
A. That's correct.
Q. I want to read testimony that you

gave in your deposition. Now, based on your earlier testimony it would have been the --
MR. CROWNOVER: Excuse me, Your Honor.
THE COURT: Yes, sir.
MR. CROWNOVER: May I ask what page it is?
MR. MACLEAN: Page 105. I apologize.
THE COURT: 105?
MR. MACLEAN: Page 105 of the deposition, Line 21. I apologize.
BY MR. MACLEAN:
Q. Now, based on your earlier testimony it would have been the potassium that was the actual cause of death, correct?
Answer: That was the medication in this case that was immediately fatal, but all three are potentially fatal medications and in combination they are also a lethal combination And that is not uncommon usage in cases where we have, for example, a polydrug intoxication that results in death to list all the medications involved.
Is that your testimony?

A. That was.
Q. Okay. We go over to Page 0573 of the binder, document binder which is Page 5 of the autopsy report. Do you see that?
A. I do.
Q. And under summary of case it says in the third paragraph: Histology confirmed the gross pathologic findings. Blood levels of thiopental, sodium pentothal and its metabolite, pentobarbital, are both within normal therapeutic concentrations. Blood levels of pancuronium, Pavulon, are well above the levels indicated for medical use. Do you see that?
A. I do.
Q. Okay. Dr. Levy, you're not aware of any studies regarding the speed with which sodium pentothal takes effect, are you?
A. I'm not aware of any studies, no.
Q. And you're not aware of any studies regarding the variability of patients's responses to this drug, are you?
A. Not of any studies, no.
Q. You're not aware of any studies regarding the rate at which this particular

barbiturate loses its effect, are you?
A. I would say that I am aware within medical text regarding toxicology information regarding how long it remains effective in normal therapeutic use.
Q. So in other words, you know books where you can go to find that information?
A. Yes.
Q. All right. But you don't recall what the half life of sodium pentothal is, do you?
A. Yes, I do.
Q. What is it?
A. The half life of sodium pentothal is quite variable depending upon the dose, but begins at approximately six hours and can extend as long as sixty hours.
Q. Okay. In your question I asked you:
Do you know what the half life is of sodium pentothal?
Answer: I don't recall.
Question: Do you remember whether it is a matter of seconds, minutes or hours?
Answer: My recollection would be it would be in the minutes of range. Half life

in the body.
A. That was my testimony and then I reviewed the literature subsequent to that.
Q. Okay. Now, potassium chloride when it's injected can produce a sensation of burning as it is introduced in the veins. Correct?
A. It can, yes, depending on the concentration of it.
Q. And potassium chloride at a heavy lethal dose, such as is used in the Tennessee lethal injection protocol, when it hits the heart will interrupt the electrical activity of the heart almost immediately Correct?
A. It takes a few seconds, but it's effectively immediately, yes.
Q. And then that stops the heart. Correct?
A. It's a simplification. The heart would go through a variety of arrhythmias until the heart would finally come to a stop.
Q. Now, Dr. Levy, we've talked about a lot of different steps in the process of

lethal injection. Correct?
A. Yes, there are.
Q. And it's fair to say, isn't it, that if anything grows wrong at any of those stages, this could be a terrible thing both to experience and to witness. Correct?
A. Depending upon the steps you're referring to, yes, it could be.
Q. But if the Pavulon were working, it would not be such a terrible thing to witness because the patient would have the appearance of being calm and serene. Correct?
A. That is correct.
Q. Even though that might not be the case. Correct?
A. Correct.
Q. Now, Dr. Levy, isn't it true that nobody knows whether Mr. Coe in his execution felt any pain?
A. We don't as he died and is not able to tell us whether he did or not.
Q. And is it true that -- it's true, isn't it, that if he felt any pain that the Pavulon may have masked that pain?

A. If it was after the time that the Pavulon was administered, yes, it would.
Q. And when I asked you that question in your deposition at Page 111, Line 21, your answer was: That is entirely possible. Correct?
A. It is.
Q. Dr. Levy, in your opinion it would be possible to devise a protocol in Tennessee that would involve the use of medically trained personnel in all of the stages of the lethal injection process. Correct?
A. It would be possible, yes.
Q. And you do not have an understanding of why the Tennessee lethal injection protocol does not involve the use of medically trained personnel in the actual carrying out of the execution?
A. Right. I do not know one way or another why the method that is chosen was chosen.
Q. And under the current protocol, as you understand it, there is a risk that the execution could result in an inhumane death?
A. There is, in any circumstance, always

a risk of something going wrong and an inhumane execution might happen, yes.
MR. MACLEAN: I think that's all. Thank you.
THE COURT: Thank you.

REDIRECT EXAMINATION

QUESTIONS BY MR. CROWNOVER:
Q. Dr. Levy, has anybody ever asked you to form an opinion as to whether the Tennessee lethal injection protocol includes adequate procedures and safeguards to ensure that the lethal injection will proceed without an unreasonable risk of problems or complications?
A. Not prior to the deposition that I gave three days ago.
Q. So you've never been asked that question before about your opinion?
A. No. And I wouldn't consider that my role as the state medical examiner or county medical examiner. I'd want to be independent of that process. Because how can I evaluate that process independently if I was involved in its development or its critiquing in that regard?

Q. Okay. So you wouldn't want to be involved in the process?
MR. MACLEAN: Your Honor, I'm going to object to leading.
THE COURT: The Court sustains the okay.
BY MR. CROWNOVER:
Q. So would you want to be involved in preparing and formulating a lethal injection protocol in your capacity as medical examiner?
A. No, I would not.
Q. And for the reasons you just stated?
A. That is correct.
Q. Now, Dr. Levy, you were asked questions about sodium pentothal in a surgical setting and I believe you testified that sodium pentothal could be used, but it would be followed by another anesthetic. Is that right?
A. That is correct. That is standard surgical procedure.
Q. Now, in a lethal injection protocol does it make any sense or not to give five grams of sodium pentothal and then follow it

with another anesthetic?
A. Well, if the execution --
MR. MACLEAN: Your Honor, I'm going to object to this on grounds of lack of foundation. He's already testified that he lacks any kind of expertise in the area of euthanasia or lethal injection.
THE COURT: The Court overrules the objection because you opened the door. I was very careful. I noticed on the direct examination those kinds of questions were not asked, but on cross-examination you did stray into that area and, especially, as to this particular question. It's proper redirect because it was gone into on cross.
You may proceed.
THE WITNESS: May I have the question repeated, please?
THE COURT: Yes, sir.
BY MR. CROWNOVER:
Q. Okay. The question is, Dr. Levy, in the lethal injection procedure does it make any sense or not for five grams of sodium pentothal to be followed by some other anesthetic?

A. It makes no sense to me as the sodium pentothal would be lethal in and of itself.
Q. Now, as to the tests performed and your examination of the body of Robert Coe, did you find any evidence of a loss of potency of any of the three drugs administered?
A. No. As I testified to before, the levels of pentothal and the pentobarbital in Mr. Coe's body at the time of his death were still well within the normal therapeutic range you would expect in someone who is under general anesthesia.
Q. And were the levels of the sodium pentothal and the pentobarbital, were they within the lethal range also?
A. In the case of the sodium pentothal, it was. In the case of the pentobarbital, it was not
Q. Now, as to the tests performed and your examination of Mr. Coe's body did you find any evidence of improper mixing of any of the three drugs administered?
A. From the autopsy I have no way to evaluate how the drugs were mixed. I could

only evaluate the effect upon Mr. Coe.
Q. Okay. And the effect upon Mr. Coe was what?
A. Mr. Coe was killed as a result of the lethal injection procedure.
Q. Do you have any opinion as to whether if the sodium pentothal was not mixed properly that was administered to Mr. Coe, would it still have a lethal effect or not?
A. Depending upon how it was mixed it might or might not. It would -- there are so many possibilities in mismixing something that you could still deliver a lethal dose, or you could deliver a less than lethal dose, or an ineffective dose.
Q. Okay. And as to your tests performed and your examination of Mr. Coe's body was there any evidence of improper administration of the three drugs?
A. There was not.
Q. Would the execution of Mr. Coe be considered a successful lethal injection in your opinion or not?
A. In my opinion it would be.
Q. Were there any significant

difficulties with the procedure that you could ascertain from your examination of the body, the tests that were performed and the examination of the IV apparatus?
A. I didn't see any significant problems, just the minor issue of having two needle sticks required in one arm.
Q. Do you have an understanding as to whether the Tennessee lethal injection protocol that was followed when Mr. Coe was executed is the same or not as the Tennessee lethal injection protocol at the present time?
A. It's my understanding that it is.
Q. And do you have an opinion as to whether Mr. Coe would have experienced pain or discomfort as a result of receiving any of the three drugs administered?
A. I do have an opinion.
Q. And what is your opinion, Dr. Levy?
A. It's my opinion that once the sodium pentothal took effect, Mr. Coe would have had no perception of pain or consciousness at all.
MR. CROWNOVER: That's all, Your

Honor.
THE COURT: Any re-cross?
MR. MACLEAN: Nothing further, Your Honor.
THE COURT: No?
MR. MACLEAN: One second.
THE COURT: Okay.
MR. MACLEAN: Nothing more, Your Honor.
THE COURT: Dr. Levy, you're excused. Thank you very much for your testimony.
THE WITNESS: Thank you.
THE COURT: Does the state have any other witnesses or any other proof.
MS. REEVERS: Your Honor, no. That is all of the state's witnesses. We would like to submit to the Court the plaintiff's response to defendant's interrogatories. As the Court will note they are not signed, but Mr. MacLean has agreed to stipulate.
MR. MACLEAN: We stipulate, Your Honor. I signed them. My client did not because I haven't had a chance to go out and

visit him over the past couple of weeks.
THE COURT: All right. So that will be, I believe, Exhibit 18. Is that correct? Yes, ma'am. If you'll just hand those up, Mrs. Smith will mark them and they will be admitted.
(Exhibit No. 18 admitted.)
MS. REEVERS: We would also like to provide to the Court the rules of the department of health regarding emergency medical technicians and paramedics.
THE COURT: Any objection?
MR. MACLEAN: No objection, Your Honor.
MS. REEVERS: We've provided a copy.
THE COURT: Good. That's Exhibit 19. It's admitted into evidence.
(Exhibit No. 19 admitted.)
MS. REEVERS: And the last thing we'd like to provide for the Court, I think there was testimony by Dr. Heath concerning his involvement in a case, Georgia vs. Nance.
THE COURT: Yes.

MS. REEVERS: And we have procured a copy of the order regarding the claim in which he testified and would like to submit that to the Court.
MR. MACLEAN: Your Honor, I would object to this. This is a trial level court order. It contains findings based upon testimony that was presented in that proceeding, presumably. It does not identify whose testimony the Court relied upon. This is hearsay and it also doesn't contain any statements of a witness based upon direct knowledge and, therefore, is inadmissible. And it does not fall under any of the exceptions that I'm aware of.
MS. REEVERS: Your Honor, we contend it's a certified copy of an order in a court regarding the exact issue that's being litigated here and that it would certainly assist the Court with respect to the issues.
THE COURT: The Court sustains the objection. The questions that were asked Dr. Heath about that case were, as I recall them, one, concerning I guess sort of his

qualifications or experience in testifying. And then I remember the state had cross-examined him. Part of it I think was perhaps to show bias on his part or an agenda. On either one of those items it would not be relevant, so the Court sustains the objection.
MS. REEVERS: Yes, Your Honor. That concludes the state's proof.
THE COURT: Thank you. Is there any rebuttal proof?
MR. MACLEAN: Nothing further, Your Honor.
THE COURT: That closes the proof in the case. The next step is for the Court to hear closing arguments. Let me inquire of counsel. Do you want a break to put your thoughts together or are you all ready to proceed? Mr. MacLean?
MR. MACLEAN: Your Honor, either way. Whatever Your Honor would like.
THE COURT: I'm fine. I'm ready to go, but I know sometimes lawyers like to take a few minutes to prepare their thoughts. If you all don't need that,