APPENDIX B

(Evidentiary Hearing Transcripts)

IN THE SUPREME COURT OF TENNESSEE

AT NASHVILLE

STATE OF TENNESSEE	:	Criminal Court for Knox County
	:	No. 58183A
Respondent,	:	
	:	
VS.	:	No. M2020-01156-SC-DPE-DD
	:	
	:	Special Master W. Mark Ward
CHRISTA GAIL PIKE	:	
	:	
Movant.	:	

EXPEDITED TRANSCRIPT OF EVIDENCE

Volume 1

Hearing held on August 11, 2026

THE HONORABLE W. MARK WARD, PRESIDING JUDGE

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	:	

This case came on to be heard for Hearing and was heard on the 11th day of August, 2026, before the Honorable W. Mark Ward, Judge, holding the Criminal Court for Knox County, Division III, at Knoxville, Tennessee, when the following proceedings were had:

THE COURT: Good morning, please be seated.

I guess I should start off by saying technically we're not in Criminal Court, but obviously we had to have it -- a physical facility to conduct this evidentiary hearing and the Court here was gracious enough to allow us to have access. And I thank everyone from Knox County for allowing us.

I'm Judge Mark Ward. As you well know, I've been assigned to handle this matter at this stage.

Could the lawyers introduce themselves?

MR. IHNEN: Your Honor, Luke Ihnen with the

Federal Defender Services of Eastern Tennessee here on behalf of Ms. Pike.

THE COURT: What's your last name again?

MR. IHNEN: It's Ihnen, I-h-n-e-n.

THE COURT: And it's pronounced Ihnen?

MR. IHNEN: Ihnen.

THE COURT: Ihnen. Ihnen. Did I get it right that time?

MR. IHNEN: Yes, sir.

THE COURT: Okay. Mr. Ihnen, I'm sorry. I've enjoyed reading your materials and I'm probably going to butcher all of your names, so I apologize.

MR. FERRELL: Good morning, Your Honor. Stephen Ferrell, of Federal Defender Services.

THE COURT: I got that. That's an easy name.

MS. BALES: Good morning, Your Honor. Susanne Bales with Federal Defender Services.

THE COURT: Bales?

MS. BALES: Yes. B-a-l-e-s.

MR. IHNEN: And, Your Honor, we have our paralegal here at counsel table.

MS. MCINTOSH: Hi, Patricia McIntosh.

THE COURT: And for the State?

MR. AYERS: Good morning, Your Honor. Will Ayers here for the State.

THE COURT: Your last name again?

MR. AYERS: Ayers, A-y-e-r-s.

THE COURT: Okay. That's right. Mr. Ayers, I've enjoyed reading your materials too.

MR. WICKENHEISER: Your Honor, my name is David Wickenheiser for the State. And that's W-i-c-k-e-n-h-e-i-s-e-r. Thank you, Your Honor.

MS. MORRIS: Samantha Morris, also for the State.

THE COURT: All right.

MR. AYERS: And we also have Kim Alexander our paralegal and Catherine Cline who's an attorney whose practice is pending admission.

THE COURT: Okay. Nice to get to put names with faces. Both sides have been giving me a lot of reading material over the last couple of weeks. So it's nice to put names with faces.

Anyway, we're here, I understand that we're being live streamed and I've authorized a camera to be in the courtroom. So if anybody is interested in this proceeding, they have access to that without having to be here.

That being said, for all the folks that are here, I don't think I have to say it, we're going to keep this in an orderly fashion. Everyone has a right to be

here as long as they're not disruptive. I have no clue what to expect but we're not going to tolerate any unusual disruptions to what should be an orderly process here today. I'm not speaking to the lawyers. I'm speaking to the people that are in the audience. As I said, I don't know what to expect.

With that being said, I'm not sure that everyone really is on the same page as to what this proceeding is going to be procedurally. So I wanted to kind of set the stage first by talking about what I perceive we are doing here procedurally and then give both sides an opportunity to correct me if I've interpreted it wrongly or to make comments or suggestions to me about what we're about to undertake here. And so I'm going to open that up to both sides in just a few minutes.

Now, the way, my understanding of where we are procedurally, obviously, and I'm assuming that, Ms. Pike, you can hear what's going?

COURT OFFICER: You'll have to unmute your mic.

THE COURT: Ms. Pike, can you hear and see what's going on now?

DEFENDANT PIKE: Yes, I can. Hello. Good morning.

THE COURT: Good morning. I just wanted to make sure you could hear what's going on.

I've been designated the Special Master but my technological skills are not that special, so I'm going to count on the lawyers to assist me in making sure that we keep Ms. Pike informed of what's going on during this proceeding and to help me with the technology as you present your materials to the Court.

Be that as it may, I'm looking at the Court's Order and I have distributed copies of the Court Order around the courtroom. My understanding is that she has completed the three tier appellate process to challenge her death penalty sentence that was arrived out of Knox County. And that on September the 30th of 2025, the Tennessee Supreme Court set an execution date for Ms. Pike for September the 30th, 2026.

It's also my understanding that sometime in January of '26, Ms. Pike filed a challenge to the method of her execution in the Chancery Court of Davidson County. And I'm going to abbreviate, but subsequent to that Ms. Pike has filed a motion in the Tennessee Supreme Court entitled Motion and Request to Appoint Special Master pursuant to Tennessee Supreme Court Rule 12(4)(b).

And in response to that motion, the Tennessee Supreme Court construed the motion to be asking for a

stay of execution for Ms. Pike in order that she be allowed to pursue her collateral litigation in Chancery Court in Davidson County.

In response, the Court entered this order that I'm looking at is July the 10th and has appointed me as a Special Master to conduct an evidentiary hearing on the matters specifically referred to in this Order. And pursuant to this Order, I am to receive evidence.

And then on April the 20 -- I'm sorry -- August 21st, 2026, I am supposed to transmit back to the Supreme Court a record of the proceedings and a Special Master's report of Findings of Fact and Conclusions of Law.

And then a week later on August 28th, 2026, the parties can file any objections to the Special Master's report. And thereafter it provides that issues not specifically referred to in the Special -- to the Special Master are hereby held in abeyance pending completion of the Special Master's report.

The Court will set a briefing schedule on issues upon receipt of the Special Master's report. So I read this order as anticipating that after I submit my Special Master's report that both sides would be given an opportunity to brief and argue in the Tennessee Supreme Court requesting that that Court stay of execution so

that Ms. Pike may pursue her collateral attack upon the method of execution. That is not a challenge to her death sentence. It's a challenge to the method of her execution.

What is currently before the Tennessee Supreme Court, according to my interpretation, is a request for a stay of execution. And according to the Supreme Court rule Ms. Pike -- not Ms. Pike -- that request will or will not be granted in large part or solely upon the determination by the Supreme Court of the likelihood of success in that collateral litigation. And so that's where I see we are.

This is not the collateral litigation and this is not a hearing designed to serve as an attack for collateral attack upon this. It's really the Supreme Court telling me that in order for them to effectively rule upon Ms. Pike's motion that they need to know certain things. And they've listed those five things that they need to know.

I don't anticipate them thinking that I am going to rule on the Motion. They just want me to give them the facts -- findings of fact and conclusions of law on these five specific questions and they will make the ultimate decision whether to grant the stay.

If I missed something or I've mischaracterized

anything, I'm going to let both sides tell me. I think it's important that we all are on the same page about what we are about to do.

Mr. Ihnen, do you want to comment or anything about where we -- you think we are procedurally?

MR. IHNEN: No, Your Honor. I think your understanding is the same as ours.

THE COURT: What about the State?

MR. AYERS: I would agree with the Court's characterization. The State does have a couple of matters to bring to the Court's attention related to the scope of the proceedings. We can make that motion now or if the Court would like to say some additional remarks, we could wait.

But there are three specific issues related to those five in the Supreme Court's order that are going to affect the scope of the testimony this morning and that will have some cascading effects throughout the hearing. These are issues we've raised in our pre-trial brief but we'll await the Court's direction on that.

THE COURT: Okay. But procedurally I haven't missed anything?

MR. AYERS: No, Your Honor, I think we're all on the same page.

THE COURT: All right. All right. Well, the

next thing that I was going to ask is if the two parties could agree on anything. I guess I could just stop there with regard to the five questions that the Court has to -- I was going to talk about those five questions.

You've submitted a pre-trial Brief that addressed those and very certain issues of the Brief and Ms. Pike did not address those issues. In fairness to them, you were ordered to file your Briefs --

COURT REPORTER: -- something weird. Can we pause for just a second?

THE COURT: Sure. We're going to pause for just a moment.

(Whereupon, a short break was taken.)

THE COURT: As I was about to say, the State submitted a Brief that is arguing for an interpretation of these five questions in one way and the defense has submitted their pre-trial brief but didn't respond to that. And the defense, they couldn't respond to it because the Briefs were due at the same -- at the same time.

So, I don't know, I was going to ask -- what I had envisioned was asking the attorneys to tell me if they could agree on anything on this topic. And, if not, talk about the five questions involved. You say you want to make a motion or --

MR. AYERS: Yes. Yes, Your Honor.

THE COURT: How do you lawyers want to address it? We obviously have to talk about these five questions.

MR. AYERS: Yes, Your Honor. But maybe we could start with, as you suggested, what we can agree on. I think the parties have agreed on issue number five. And the parties have filed a joint stipulation as to issue five, which is related to Ms. Pike's spiritual advisor being present with her in the execution chamber.

The Department of Corrections granted that request. That will be allowed. And the parties agree on that. And so they filed a joint stipulation that essentially answers that question number five.

And I'll let Mr. Ihnen say anything --

THE COURT: Well, I mean, that's -- does that mean that Ms. Pike is no longer claiming that there is a problem with the protocol as it applies to her as a result of issue number five or is it just that you're stipulating what the evidence is going to be.

MR. IHNEN: The former, Your Honor. Yeah, we've agreed with the State that that is not an issue that we will bringing to the Court.

COURT REPORTER: I can't hear you well.

MR. IHNEN: Did you hear me, Your Honor?

THE COURT: I did.

MR. IHNEN: I'll do better next time.

THE COURT: So colloquially speaking, that is off the table. Okay. So we've got four issues. Can the parties agree on the scope of any of the other four issues? If not, we need to talk about it.

MR. AYERS: Well, let's talk about issue number two, if we could, Your Honor. And that is the issue that pertains to Ms. Pike's transport to Riverbend, which is where executions are carried out in this state.

She's currently housed at what's called the Debra Johnson Rehabilitation Center, which is a separate facility. So there will need to be a transfer at some point to effectuate the death sentence.

Issue two has to do with when that's going to happen. There is a factual predicate or assumption in that issue as noted by the Supreme Court that she will be moved to Riverbend two weeks prior to her execution.

And there's a second factual assumption, which is that for the time that she is at Riverbend that she will be observed by male correctional officials. Now, the State filed in a declaration with its pre-trial Brief from Assistant Commissioner Linda Thomas a sworn statement that Ms. Pike will not be moved to Riverbend until no sooner than 24 hours before her execution on the

30th of September. And so the State has committed to that in a sworn statement in a court filing.

The State has also committed to staff Ms. Pike's observation while she is at Riverbend with female correctional staff. And that's also a position that's made in a sworn statement that's been filed with the Court.

Now, the parties have discussed this and in credit to the defense, they've been willing to be flexible and we've talked about it, we have not been able to reach an agreement such that we could stipulate, but it's the State's position that in light of these statements and commitments from the Department of Correction that neither of these factual predicates in issue is present. And so there is no evidence to hear on issue number two because she's not going to be at Riverbend for two weeks and she's not going to be observed by male guards while she's there.

THE COURT: Let me hear from Mr. Ihnen.

MR. IHNEN: Thank you, Your Honor.

Can you hear me, Miss?

Okay. I'd like to back up a little bit here. I think there's a little bit of confusion as to issue two. We actually agree with the State that the Tennessee Supreme Court when they sent this issue to Your Honor

misstated the facts as we both understand them in the record.

The Tennessee lethal injection protocol specifically says that Ms. Pike would be transferred from Debra Johnson to Riverbend 48 hours before her execution. I think we read the protocol that way. I think the State reads it that way and that's the way that we pled it in the Rule 12 Motion. And the Tennessee Supreme Court has sent this question to the Court which misstates that fact.

THE COURT: Let's pause just a moment.

(Whereupon, a short break was taken due to technical difficulties.)

MR. FERRELL: Your Honor, while we're waiting, there's another issue that I'd like to address if possible.

THE COURT: You okay, Madam Court Reporter?

COURT REPORTER: Yes.

THE COURT: Go ahead.

MR. FERRELL: Your Honor, one thing that occurred yesterday evening and this morning is we had arranged for counsel to be present with Christa Pike during this hearing, which no one is right now. And because we're a small chew, just a small unit, there's only four attorneys, and one of Christa Pike's attorneys

in another matter volunteered to sit with her, answer any questions, give her some advice, contact us if it was necessary, that attorney asked for permission to go to Debra K. Johnson Facility on Friday, it was denied last night at 6:00 p.m. eastern.

She went to the prison this morning and is standing by ready to go. She informed us that armed guards are present telling her not to be on the property. She is a member -- her name is Angie Bergman of Bass, Berry and Sims and she represented Ms. Pike on a civil matter concerning her solitary confinement. They have a relationship. They -- Ms. Bergman has been to the -- that facility many times without incident. And she's standing by and we would like to get permission for her to sit with Ms. Pike during these proceedings.

And perhaps that would help with the technology. I don't know if that would -- you know, where Ms. Pike wasn't used to how to mute herself or turn her voice on when it's time for her to talk. But we wanted to raise that matter with Court this morning before we got very far underway. Because we think it's important and pursuant to this Court's Order that she be able to consult with counsel. And that was our understanding is that we would be able to have someone there.

And Ms. Bergman is willing to make a limited notice of appearance, if that's necessary, or if it has to be someone from our firm, we would arrange for someone to be there tomorrow. But the most expedient thing would be for Ms. Bergman to be gained -- given access to the prison and be able to sit with Ms. Pike during the proceedings. And that's what we've asked for.

THE COURT: Mr. Ayers, do you have a dog in this fight, so to speak?

MR. AYERS: Yes, we do, Your Honor. We object to this for several reasons. The first of which is the timeliness of it. The Court's order came out on August 3rd and our office did not have notice of this request until yesterday. And it was not even until last night that we knew that this attorney who is in Nashville had any connection to counsel for Ms. Pike.

We'd ask this attorney -- or an attorney from their office -- if they intended to make an appearance in this case, they said, "No, we don't."

The case that they represented Ms. Pike on was settled years ago. So to our knowledge, there is no active matter on which Ms. Pike is represented by these lawyers. This is a distraction. It could've been worked out earlier perhaps if the State and the Department had had more notice. But coming as this did just at about

the last minute, not only is it not contemplated in the Order -- what's required in the Order is that the State make a video feed available to Ms. Pike, which they've done, she has access to a telephone, so she can call her attorneys at any time during these proceedings. She's been provided with phone numbers so that she can do that. And that's what the order requires. It does not require counsel to be present there.

As Mr. Ferrell said, if they want to send an attorney out there from their office who is representing Ms. Pike, we don't have a problem with that, but the late nature of this request just creates a distraction such that we're cutting in now into time that we could be using to address these issues and address the scope of what's before the Court when, as we can all see, the terms of the Order have been met.

Ms. Pike has access to the proceedings. She can see. She can hear. She can communicate with her counsel. And so the State's position is that we don't need to get into this last-minute request.

THE COURT: Do you anticipate that Ms. Pike is going to testify in this proceeding?

MR. FERRELL: We do not at present, but if Your Honor had questions for her, we would like for an attorney to be present. We don't plan to call her to

testify, no.

MR. AYERS: And neither does the State.

THE COURT: Well, I don't see any harm in allowing this lady in. Your only objection is the timing?

MR. AYERS: The objection is also that it goes beyond the scope of the Court's Order, which does not require counsel to be present in the room with Ms. Pike so long as she can communicate with her counsel, which she can do.

THE COURT: Well, it is late to be raising this but I'm going to allow her to be in there with her at this time but we're not going to delay this while that takes place. We're just going to continue on. I don't know how we need to communicate to the prison that she is allowed in. Can you take care of that for me?

MR. AYERS: We can. There is another issue related to this though, Your Honor, that I wanted to raise. This request also came with the request to bring in electronics, I think at least a laptop and a cell phone, things that are not normally allowed in the prison that post obvious security concerns. If the Court is going to allow this visit, we request that the attorney would be allowed to enter but not to bring in any equipment that could pose a security concern, which could

cause further delays, because of obvious reasons.

THE COURT: That's a good compromise.

MR. FERRELL: Yeah, and we're fine with that as long as she has access to a telephone to contact us, that's fine.

THE COURT: Apparently there's one there?

MR. FERRELL: Yes. And that we weren't aware of --

THE COURT: Okay.

MR. FERRELL: -- until just yesterday.

THE COURT: We don't need to be distracted by this. So let's just move on and I will allow her to go in and be with her. So --

MR. FERRELL: Thank you, Your Honor.

THE COURT: Are we -- communication, everything is back and you were about to address me about --

MR. IHNEN: I was about to say something brilliant, Your Honor.

THE COURT: -- issue number two.

MR. IHNEN: And, again, just backing up a little bit here. So the -- and I've got in front of me Tennessee lethal injection protocol, and this will be made an exhibit, so I don't think that this is anything out of turn here. But in the protocol, it says 48 hours

before execution central office personnel oversees transfer of female inmate from DJRC to RMSI if applicable.

Our understanding of that provision is that Ms. Pike would be housed at the Debra Johnson Center for the isolation period, two weeks prior to her execution. And pursuant to the protocol would be moved to Riverbend Maximum Security Institution 48 hours before her scheduled execution. I believe that's the State's understanding of that provision as well.

THE COURT: Wait a second. So say that again. For two weeks she's going to be --

MR. IHNEN: So the Tennessee lethal injection protocol, if you select lethal injection, which is the default method of execution, you are required to be isolated for two weeks. At Riverbend Maximum Security Institution, my understanding, and the State can certainly correct this if I'm wrong, but that they move the inmate to a separate part of the unit where death row inmates are housed.

For that two weeks, they are kept in isolation. Solitary -- essentially solitary confinement for those two weeks. And then 48 hours prior to -- if it's a man -- their execution, they would be moved to what's called the Capital Punishment Unit.

For Ms. Pike, my understanding of what the protocol says is that she would still observe that two-week isolation period but pursuant to the language of the protocol, that would be at Debra Johnson Center. And then 48 hours prior to the execution, she would be moved to the Capital Punishment Unit at Riverbend, same as the men.

THE COURT: When you say isolation, what does the protocol provide for her during those two weeks? Is she allowed visitors during those two weeks?

MR. IHNEN: My understanding is, yes, visitors, attorneys, spiritual advisors may be allowed as long as that's scheduled with the warden of the facility.

THE COURT: Is she allowed out of the cell at all?

MR. IHNEN: I'm not sure, Your Honor.

THE COURT: The word isolation, I'm not sure -- that could have different interpretations.

MR. IHNEN: Sure. And let me actually --

THE COURT: When you're isolated and you get visitors, are you really isolated?

MR. IHNEN: Let me find what the language is here in the protocol.

THE COURT: I guess -- and are you in solitary confinement if you get visitors? I guess it depends on

how long visitation is, I guess --

MR. IHNEN: So the protocol says “Fourteen days before the execution, central office personnel directs the initiation of the continuous observation logs which records all daily activities of the inmate beginning 14 days before the execution. The logs are maintained at each post where the inmate is located until the execution occurs or stay of execution is issued.”

Now, how that provision has operated and practiced is that, again, the male inmate is moved to a separate part of Unit 2, which is the unit that houses death row inmates at Riverbend, and then they are continuously observed in that sort of isolation situation for those two weeks.

And I’m not -- the State might have more specifics beyond that. Part of the --

THE COURT: The two weeks of continuous observations, I’m not sure provides two weeks of solitary confinement. Those are different things. If the protocol allows her visitors, and I thought I read somewhere where they cut the visitors off 12 hours before.

MR. IHNEN: Twelve hours, yes, Your Honor.

THE COURT: So, anyway, I interrupted you. Go ahead.

MR. IHNEN: And part of the problem with the protocol in general, and this is exceeding the scope of the Tennessee Supreme Court's Order, but so much of is it secret and confidential not provided to counsel. And so all I can testify to to the Court today is how this provision has operated and practiced, and that has been that the male inmate has been moved to a separate part of the unit, you know, isolated for those two weeks, and then continuously observed 24 hours a day during those two weeks.

Getting back to the issue with Ms. Pike. My understanding is that that provision would apply equally to her at the Debra Johnson Center. And then 48 hours prior to her execution, she would be moved over to the Capital Punishment Unit where she then is observed 24 hours a day as well.

That's, like I said, our understanding of the protocol. I believe that's the State's understanding of the protocol. That's the way that we pled that claim in our motion.

And then the Tennessee Supreme Court when it referred issue two to Your Honor, misstated that fact, misstated the fact that Ms. Pike would be moved to Riverbend during that two-week period.

So that's not our understanding of the

protocol. That's, again, not the State's understanding. That is the way that the Tennessee Supreme Court framed this question.

But I think it's clear that what the Court is asking Your Honor to do is evaluate whether Ms. Pike's post-traumatic stress disorder, bipolar disorder will be impacted by that observation period at a men's prison. That's the, we believe, the crux of this issue.

And if the -- the State's argument is basically that this issue was moot when the Tennessee Supreme Court drafted it. And, obviously, that is not -- was not the intent of the Tennessee Supreme Court. And so that would be our response.

THE COURT: So let me get down to the bottom line. You believe there still is an -- issue number two is still on the table?

MR. IHNEN: Yes, Your Honor. And --

THE COURT: Then we can address it during this hearing.

MR. IHNEN: Yes, Your Honor. And let me just give one more reason for that. So my friend stated that the Tennessee Department of Correction was committed to staffing that isolation period, that observation period of Ms. Pike with female guards. Ms. Thomas who actually is scheduled to speak today, she did file a declaration,

but it says that they would make every effort to assign only female staff. So I believe that that is a factual issue that the Court should consider.

THE COURT: So your position is on issue number two that the Court should consider her movement and her observation whether -- and consider that as whether that causes her serious illness or needless suffering due to her cited history of sexual assault and diagnosis of post-traumatic stress disorder?

MR. IHNEN: That's correct, Your Honor. Whether it's 24 hours or 48 hours, she is going to be moved to the men's prison. She is going to be continuously observed. And the State, despite what they've said, has not assured that only female guards will observe Ms. Pike.

THE COURT: Let me hear from Mr. Ayers. That's what they want to do, what's your position?

MR. AYERS: So, Your Honor, the parties did negotiate this issue and discussed it. And in the course of those negotiations, the State asked, well, what would be an acceptable transfer time. And the answer came back in the neighborhood of 24 hours. So the State committed to that.

And the other issue was observation. Would it be acceptable if she was only observed by female guards.

The answer came back yes. So the State, to the best of its ability, committed to that.

Now, what counsel for the other side seems to desire is a guarantee that no male guard will ever observe Ms. Pike while at Riverbend. As the Court knows, it's -- we can't -- we're not in the business of guarantees here. The Department has made a commitment to staff her observation, to not assign any male officer of that observation during the time while she's at Riverbend.

People's cars break down. They get sick. Things happen and so the State cannot make an absolute one hundred percent guarantee that no male guard would ever walk in there. And there's no amount of factual development that could establish that. And it would be hard to imagine a Court Order that required an absolute perfect guarantee in that regard.

I think the sides agree more or less that the Supreme Court's issue that was referred to this Court has to do with whether the transport and observation, given her stated mental health concerns and her history, are going to cause serious illness and needless suffering. The question is are those two -- are the transport and observation even at issue anymore given that she's not going to be transferred, whether it's two weeks, whatever

it’s 48 hours, whatever metric we want to pick, it’s going to be no sooner than 24 hours before.

And during that time period, however long it is, she's going to be observed by female guards as best as the Department can ensure. And so it’s hard to imagine what evidence the Court would receive that will inform this issue. Other than perhaps asking the Assistant Commissioner, well, do you really mean what you said. She’s already stated under penalty of perjury that this is what’s going to be the case.

I do want to correct. The State’s position is not that this issue was moot as drafted. Our position is that it’s moot in light of the concessions that the State has made. And so that there is no evidence to receive on this issue.

THE COURT: Well, I've been instructed to address and have an evidentiary hearing on five issues. The parties agree that issue number five is no longer necessary for me to have a hearing on. There is disagreement with issue number two. And it’s pointed out that the way the Supreme Court phrased the question is whether movement of Ms. Pike to Riverbend Maximum Security before the execution where she will be observed by male prison officials for two weeks prior to the execution would make it sure or very likely that the

challenged protocol will cause Ms. Pike serious illness and needless suffering.

Sorry about that.

MR. IHNEN: Did it find anything helpful for Ms. Pike, Your Honor.

THE COURT: I should be able to turn off an iPhone.

Anyway, I think it's been pointed out that the motion that Ms. Pike filed, if you read it really, really closely, it doesn't say that she's going to be transferred two weeks before. But you have to read it pretty closely. The first six times I read it and you put a conjunction between those two phrases, it makes it sound like that you were saying that. I had to go back and read it six or seven times the way it was worded.

But anyway, be that as it may, this question involves her post-traumatic stress disorder and her history of sexual assault. I am going to allow you to get into her movement and her observation. If the facts don't support it, they don't support it. But if you're not willing -- if you're going to go forward and say that their observation, likely by females, are going to cause her psychiatric problems, I'm going to let you do that.

I'll let you go forward with your proof and the State with their proof. And we'll go from there. I

think at least the spirit of that question requires me to consider her post-traumatic stress disorder and her movement, however long it is, and her observation. And we'll see what the proof shows on that. So I think that is something that's allowable.

Where are we? We've still got three other questions to talk about. Is there any agreement on the scope on those other three questions?

MR. AYERS: Your Honor, if we can speak to issues one and three. The State will move to limit or exclude testimony regarding a central line, first of all. The Court is probably aware that in the protocol there is a provision that allows a physician, if necessary, to set a central line.

Now, this Court is limited by Rule 53 to those issues referred to it. None of the issues in the Supreme Court's Order refer to a central line or contemplate a central line. In fact, the Supreme Court's Order specifically mentions twice peripheral IV access, which is not the same as a central line. We articulate that in our pre-trial Brief.

And so the issues referred to this Court concern peripheral IV access. And under the protocol who's responsible for that is the IV team. And the parties don't dispute that the qualifications and

experience and so forth of the IV team are relevant and will be explored during this hearing. That's not a dispute.

But the expert reports and the briefing from Ms. Pike have focused extensively on this issue of the central line. But there is no logical connection between that in any issue before this Court. Again, the Supreme Court's Order focuses on peripheral IV access.

And related to that is the qualifications of the physician who places the central line. And this is particularly relevant in light of the Supreme Court's Order last week in the Hines case. And as we explained in our pre-trial Brief, in that case another inmate who's convicted, has been sentenced to death, Anthony Hines had filed a Motion in the Supreme Court arguing that he was entitled to a stay of execution and a Special Master to explore the issue of the physician's qualifications, specifically the physician who participated in the attempted execution of Tony Carruthers back in May of this year.

He argued that he would suffer unconstitutional super added pain if the same physician were to participate in his execution, which is scheduled for this coming Thursday. And his argument was that if the Department replaced this physician with what he

believed was a qualified physician, then there would be no constitutional issue.

Similarly here, Ms. Pike argues that there's a supposed alternative method of execution by central line inserted by a physician that she considers qualified.

Now, the Supreme Court rejected this argument in Hines. First, it observed that there was evidence in the record before it that this physician wasn't qualified. And that's a remarkable thing because they didn't receive just a Motion and legal arguments, they received proof, including a declaration by a physician who offered extensive opinions on the standard of care for a central line, whether or not ultrasound should be used, what position the patient or the subject should be placed in, and so forth. But the Supreme Court considered that and concluded that there is no evidence that shows that physician was unqualified.

And in addition, there was a declaration from a witness to that attempted execution, an attorney named Maria DeLiberato, who Ms. Pike's attorneys intend to call as a witness. The Supreme Court also did not find that evidence to show that the physician was unqualified to set a central line.

There's nothing different being offered here. And so there is no reason to get into the proof of what

constitutes a qualification to set a central line, whether or not this particular physician who participated in a past execution was qualified to set a central line. Again, the issues are limited by Rule 53 to the issues referred to this Court and that is simply not at issue here.

It's also notable that in the Hines Order the Supreme Court observed that even if they took the allegations as true that Mr. Hines would not be able to establish a constitutional violation because -- and I'm going to quote their Order here -- "An isolated mishap alone does not give rise to an Eighth Amendment violation precisely because such an event, while regrettable, does not suggest cruelty or that the procedure at issue gives rise to a substantial risk of serious harm." And in doing so they quoted the Baze vs. Rees case from the United States Supreme Court.

So that contention from Mr. Hines that an unqualified physician setting a central line would be some kind of constitutional violation which foreclosed as a matter of law, it added that this was just speculation and that was not sufficient to show likelihood of success in the merits.

The same argument is at play here. Ms. Pike is arguing that if this same physician who participated

in the Carruthers execution is to participate in her execution, there is a high likelihood that she'll need a central line and that she will suffer if a central line is placed.

But Hines forecloses that argument. And so when we read Hines together with the background principles of Rule 53 and the issues in the Order, a central line, the qualifications to set a central line, and what happened during Tony Carruthers' attempted execution are not relevant. They're outside the scope of this Court's referred issues and they would be a distraction.

I will stop there. If the Court has any questions.

THE COURT: I want to hear from Mr. Ihnan on this. And I'll open it up. I mean, what is the scope? How far do I -- do we delve into this question or beyond the question? I'm assuming you'd want me to go beyond the question.

MR. IHNEN: Well, Your Honor, just a few quick points. The Hines litigation, as I understand it, was about the specific identity of the physician that would be performing a central line should Mr. Hines need it as part of his execution. That was the issue that was referred to the Tennessee Supreme Court. That was the

issue that they ruled on. And, you know, all of the discussion about whether or not Mr. Hines' legal team could establish an Eighth Amendment violation is not applicable to what we are trying to get in this litigation.

First, I think Your Honor has already addressed part of the State's concern in your Order on the State's Motion to Quash the subpoena. We submitted as Exhibit A to our TDOC subpoenas topic three, central line capability, and the physician's qualifications.

Your Honor, you actually struck the last part of that topic, which was -- dealt with the physician who was involved in the Tony Carruthers execution. But the topic still stands. The qualifications, training, and certification of the physician designated for Pike's execution, including whether the physician is qualified and certified to place a central venous line.

And Your Honor also already entered a Protective Order protecting any identities or information that could be used to reveal the identity of that person.

The fact is that the protocol calls for a central line if IV access cannot be --

THE COURT: Let me interrupt you for just a second.

MR. IHNEN: Yes, Your Honor.

THE COURT: You're not responding to the question. The question is central line placement. The qualifications of the physician and what happened in Tony Carruthers' execution is beyond the scope of question one and question three.

MR. IHNEN: What happened in Tony Carruthers' execution is not applicable to what's going to happen with Ms. Pike's potential execution --

THE COURT: So you're not going to try to put on evidence of what happened in Tony Carruthers' execution?

MR. IHNEN: Not as it relates to the specific identity of that physician. No, Your Honor.

But if you'll look, issue four of the Order that was referred to the Special Master states, "Whether Ms. Pike's proposed alternative methods of execution would significantly reduce a substantial risk of severe pain."

On page 25 of the Motion that we filed with the Tennessee Supreme Court alternative one says, "Use of a 23-gauge butterfly needle or central line." So central line is contemplated in issue four as one of Ms. Pike's proposed alternative methods.

THE COURT: We're not talking about issue four, we're talking about issue one and issue three. Is

the central line qualifications of the physician and what happened in Tony Carruthers relevant to one or three?

MR. IHNEN: Well, issue three deals with vein access and we've alleged that Ms. Pike is going -- accessing Ms. Pike's veins is going to be problematic. Under the protocol, if that's the case, a central line is then established. So I do think that any facts or information that we're able to adduce related to that issue is relevant to issue three.

Again, Your Honor, you've already limited the scope of this issue with your -- on your Order on the Motion to Quash.

THE COURT: Wait a second. You're not suggesting that because I let you subpoena information that I've already ruled on its relevance?

MR. IHNEN: No, Your Honor, but we've not prepared a case given that Order that predicates on anything involving the identity of the physician involved in Tony Carruthers' execution.

Similar to the Hines case that just came out was about the identity of the physician from Mr. Carruthers' execution, whether that same physician would be present for Ms. Hines -- Mr. Hines' execution.

What we are asking this Court to consider is what are the qualifications of any of the physicians that

would be required to place a central line. What circumstances would that be -- would a central line be required. And we've alleged that Ms. Pike fits a lot of that criteria because of her small compromised veins.

THE COURT: Interesting.

MR. IHNEN: And we've also, like I said, Your Honor, as to issue four, we've pled that as an alternative in our Motion to the Tennessee Supreme Court.

THE COURT: We'll talk about four in a minute. The way I read the question one is "Given Ms. Pike's diagnosis of thrombocytosis whether achieving peripheral IV access pursuant to the current lethal injection protocol would make it sure or very likely that the challenged protocol will cause Ms. Pike serious illness and needless suffering."

And the way I read that is they want to know whether achieving peripheral IV access will cause her suffering, not whether central line placement may cause her suffering. There's no mention of central line placement in there whatsoever. It ends after they achieve peripheral IV access. That's what they want to know. Is her condition going to cause problems with achieving peripheral IV access.

And the other question, number three, is whether her small veins will cause trouble with

peripheral IV access. So on one and three I don't see any relevance to central line placement, qualifications of the physician who might be making a central line placement or what happened in anybody else's execution.

So tell me what I'm missing as far as one and three. We're going to talk about four because I think four opens up maybe where you can discuss central line placement. But what relevance is that central line placement to one and three?

MR. IHNEN: Your Honor, the proof that we anticipate to put on will say that given Ms. Pike's diagnosis of thrombocytosis given the fact that she has small compromised veins, a central line is the best alternative in order to effectively deliver the lethal injection drugs.

The protocol explicitly calls for a central line if peripheral IV access cannot be gained. And so it's necessarily part of the question. I understand that it's not specifically referred to under issue one or three but the way that the protocol --

THE COURT: Well, if it's not specifically referred to, then I'm really going beyond the scope of what the Supreme Court has asked me to do. And I'm not saying that in your ultimate litigation in Chancery Court that those might -- I'm not foreclosing anything but the

Supreme Court is trying to evaluate whether there's a likelihood of success in your collateral litigation in order to determine whether to grant you a stay of execution. And you've done an excellent Brief and Motion and going to probably be obviously filing more Briefs and Motions trying to convince them.

And they've said, okay, we need these five things in order to make an intelligent decision on this case. These are the only five things we need. I don't know what that means with regard to the other facts. They may be accepting them as true. They may think they're irrelevant. I don't know. But they've said five things and with one and three they've said achieving peripheral IV access. They haven't asked me of any other aspect of the protocol peripheral IV access.

So I think we have to limit one and three. And I do think central line -- that's an argument down the road but not for -- not for answering one -- question one and three. That's my thoughts. But I'm going to let you attorneys have another shot at convincing me otherwise.

I assume, Mr. Ayers, that you don't disagree.

MR. AYERS: No, I think that's -- we're on board with that, Your Honor. I would just add that the matters pleading in Ms. Pike's motion might have merit

down the road, as the Court stated, but that's not what we're here this week to resolve. And it will be to everybody's benefit if we can stick to the scope of the Supreme Court's Order.

And, you know, relative to the central line, as to any issue whether it's number four, one, or three, it's in the protocol that the central line can be placed, if necessary. And so if they are looking to establish whether or not TDOC can establish a central line, if necessary, that's a fact that could be stipulated to because it's right there in the protocol. It's just not -- doesn't bear on any of the issues before the Court.

Now, if the Court has specific questions about issue four, we have additional arguments but our position is that this central line issue, the qualifications to set it, and the Carruthers' execution are not relevant to one or three or four.

THE COURT: Okay. I can't see why it wouldn't be relevant to four, but I will -- why do you think it's not -- have we talked about three enough? Do you have anything else to say about two -- I mean, one and three?

MR. IHNEN: Just, Your Honor, the central line is necessarily contemplated as part of the lethal injection protocol. The only reason it was an issue in the Carruthers' execution was because they could not

achieve peripheral IV access.

So we would object to that narrow reading of those two issues, but other than that, nothing further, Your Honor.

THE COURT: All right. So let's talk about four because four is the Court question. I mean whether Ms. Pike's proposed alternative methods of execution would significantly reduce a substantial risk of severe pain. One of her proposed methods is to flip the order of things and to skip the peripheral IV access and go straight to central line placement with a qualified physician. That's one of the proposed alternatives.

How do I exclude them from presenting proof on their proposed alternative?

MR. AYERS: So this question referring as it does to proposed alternatives requires the Court to look at what counts as a proposed alternative under binding precedent. And what counts as a proposed alternative is a distinct method of causing death. That's clear from Supreme Court precedent dating back decades. Lethal injection, execution, hanging, firing squad, those are the methods of execution that the Supreme Court has repeatedly discussed.

And so under the Baze Glossip pleading standard for these kinds of challenges to execution

protocols, it's the burden on a plaintiff to plead an alternative method of execution. And usually that is a -- well, it's always a distinct method of causing death. And the State agrees that Ms. Pike has pleaded one such method and that is hanging.

But these other two that she couches as methods are either just equipment swaps or slight deviations. For example, the use of a different size needle or an allegedly different size needle. There's no proof yet as to whether or not that's even available. That's an equipment swap. That's not a method of execution. The method under that would still be lethal injection by pentobarbital. And so there is no different method, no alternative method pleaded.

Similarly, the central line is the same method. Lethal injection by pentobarbital. It's just the equipment used to deliver it. That is not a distinct method. It's just an equipment swap. It's a procedural change.

Now, this notion that the central line is necessarily contemplated in the protocol proves nothing because there are all kinds of things in the protocol that are contemplated. For example, if the first injection of pentobarbital is not successful, well, the protocol contemplates a backup and a second injection.

Could a plaintiff some day bring a claim based on that? Maybe so. Is it necessarily contemplated in the protocol? Well, yes, it's right there in it. But it doesn't mean at issue in this action.

And so, again, the Tennessee Supreme Court has focused, zeroed in on achieving peripheral IV access. If there were any indication that the Court was interested in central line or anything like that, it could've said so in the Order, and yet it doesn't.

The method -- the alternative method before the Court in which the Court will hear proof on is hanging. Anything else is a mischaracterization under binding precedent. And so that's why we don't believe the central line is relevant to number four. And we certainly don't believe that the Carruthers' execution is relevant to number four either. We're happy to argue why. It's fundamentally the same reasons we just discussed.

THE COURT: Let me hear from Mr. Ihnen. Knowing that I'm already leaning your way, what do you --

MR. IHNEN: Your Honor, I would just rebut that the Tennessee Supreme Court issue four specifically asks this Court to consider alternative methods of execution.

Ms. Pike, like we said on page 25, pled

central line as one of her proposed alternatives.

THE COURT: Let me interrupt you just a second because I'm not a hundred percent clear. I read in your pleadings that Ms. Pike is a Buddhist and that she has the alternative of choosing electrocution but is unable to choose to electrocution because of her faith, and yet she is able to choose death by hanging. Square that with me. Make that make sense to me.

Why does her faith prevent her from choosing an alternative method that would do away with any problems from peripheral IV access or central line placement but allows her to choose death by hanging? I'm confused. Tell me about that.

MR. IHNEN: Your Honor, the answer to some of that I think would be attorney/client privileged. We've had conversations with Ms. Pike about, you know, potential alternatives, what that would look like. She's expressed, you know, her opinions on those to us.

But I will say, as the Court's well aware, that the Glossip requires Ms. Pike --

THE COURT: She's choosing -- I mean, I don't want to spend a lot of time in this hearing talking about hanging if she's not choosing to be hung.

Is she choosing to be -- that's her desired method of death is to be hung?

MR. IHNEN: Yes, Your Honor.

THE COURT: Okay. All right. Then we can move on from there. I just wanted that clarification. So she's got a 23-gauge needle as an alternative, the suggestion that you commence with the central line placement and do away with the peripheral IV, and that she be executed by hanging.

MR. IHNEN: That's correct, Your Honor.

THE COURT: Okay. So why wouldn't central -- I mean, my understanding is that I have to make a comparison between lethal injection and death by hanging. I've got to make a comparison, according to the Supreme Court, I'm to look at all her methods and make a comparison. So I'm trying to -- I think you can -- I'm going to allow you to put on evidence of what's involved with the central line and to prove your alternative and prove that it offers better results for Ms. Pike, especially considering her unique circumstances.

So, I mean, I think that's relevant to this inquiry. What I don't think is relevant is the qualifications of the doctor that is going to do the central line under the protocol or the ones that have done other central lines for any other -- anybody else's execution down the road. But I do think you're offering that as an alternative. Legally it may not be an

alternative but you're offering it, so I think the benefits of that I think are relevant to the inquiries.

MR. IHNEN: Thank you, Your Honor.

THE COURT: Anything else?

MR. AYERS: Just one more distinct issue that I think would also be relevant to issue four, Your Honor, and that is that the State would move to limit or exclude testimony about the effects of pentobarbital specifically. And more specifically, any mention of pulmonary edema, or that as a specific effect of pentobarbital.

As the Court is aware, that was discussed extensively in the briefing before the Supreme Court, the Supreme Court did not see fit to refer that issue to this hearing. There's no mention of pentobarbital in the Order. There's no mention of edema in the Order. And so whether the Department of Correction is aware of the effects of pentobarbital or any expert's testimony about how pentobarbital is working here is not relevant.

Again, what the Supreme Court is focused on is the peripheral IV access and whether or not any proposed alternative is compared to the protocol as written going to be a substantial reduction of serious harm. And so, again, hewing to Rule 53 and the limits on this Court's scope of evidence, there is no scope to get into how

pentobarbital works. Does it cause pulmonary edema, other things like that. Because the Court is to be focused on this issue of peripheral IV access and then whether or not an alternative compared to the protocol as written is going to reduce that constitutional level of pain.

THE COURT: Mr. Ihnen.

MR. IHNEN: Yes, Your Honor. We believe the effects of pentobarbital I think are well known. They've been widely reported. The way that it relates to Ms. Pike specifically, and we've pled this in our Motion, is that her specific medical conditions, the thrombocytosis will make that -- the experience of that pulmonary edema even worse for Ms. Pike leading to, you know, very likely the base standard of a tortuous execution. And so we would say that that issue is relevant to the first issue submitted to this Court.

And as to issue three, vein access, you know, we've alleged, our experts will put on proof that the nature of the drug, the way that it's injected could cause extravasation. It could leak into Ms. Pike's blood stream. It could be extremely painful. And that's all relevant to issue three as well.

THE COURT: All right. Well, I find myself agreeing with both of you on this one. I do think that

on issues one and three that the extent of and duration and the seriousness of the pain that Ms. Pike will undergo after achieving peripheral IV access is essentially irrelevant to questions one and three.

But I tend to agree with Ms. Pike's attorneys that at least with regard to the extent to which Ms. Pike will experience pain and the duration of that pain is relevant to the Court's ultimate assessment that the Supreme Court is going to make as comparing hanging to death by lethal injection.

How can you compare those two methods without considering with regard to each the extent and duration for which the individual will experience pain. So I think that it's -- I'm not opening a Pandora's box to everything that happens after achieving peripheral IV access, but I'm certainly going to allow you to establish the extent to which -- especially due to any of her unusual circumstances that she would experience pain under the protocol. So I'm going to allow that part of it in.

Any other -- have we discussed them all and does everyone have a thorough memory of what we're going to allow and what we're not going to allow?

MR. AYERS: Nothing else from the State at this time, Your Honor.

MR. IHNEN: Nothing else, Your Honor.

THE COURT: All right. Do you want to take a short recess before we take our first witness? I'm assuming you're going to want to commence with witnesses and not statement. So why don't you line up your first witness. We'll take a ten-minute recess.

(Whereupon, a recess was taken.)

THE COURT: All right. Mr. Ihnen, do you want to call your first witness?

MR. IHNEN: Yes, Your Honor, I believe the State has made Ms. Thomas available.

THE COURT: Linda R. Thomas. Okay.

MR. IHNEN: Did we figure out if she's going to be able to see us?

MR. WICKENHEISER: So she said she can see the courtroom.

MR. IHNEN: As long as we share them on the screen?

MR. WICKENHEISER: We'll just have to play it by ear, if we can.

MR. IHNEN: I think we have to share any exhibits on the screen.

MR. WICKENHEISER: Just so you know, she has physical copies of --

MR. IHNEN: Okay.

THE COURT: Ms. Thomas, can you hear?

MS. THOMAS: I can, Your Honor.

THE COURT: Okay. Great. Thank you.

Raise your right hand, ma'am.

(Whereupon, the witness was sworn.)

THE COURT: Thank you.

The witness, LINDA R. THOMAS, was called and, having been duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. IHNEN:

Q Good morning, Ms. Thomas.

A Good morning.

Q Can you hear me okay?

A I can.

Q I think to look at you, I'll have to look this way but I might be turning to the TV because you're over here. So I apologize if that's confusing.

Can you state your full name, title, and position with TDOC?

A Linda Thomas. My position is Assistant Commissioner Prison Operations.

Q And can you describe your role and responsibilities as it relates to the lethal injection process in Tennessee?

A I have an overarching role primarily with the team members. I sign off on team members as part of the process. And I also at a point in time 30 days out from the execution I have several roles to include verification of training of the staff that are -- will be participating in the execution. I direct observation logs. I verify credentials of those that will be participating. And those are my primary roles. I oversee practices and accountability of the drugs.

Q Okay. Thank you. How long have you served in this position?

A Since June 21st of ’23.

Q I’m going to pull up -- this is --

MR. IHNEN: I’d like to mark this document as Pike Exhibit 1.

(Exhibit No. 1 - entered into evidence)

BY MR. IHNEN:

Q And, Ms. Thomas, my understanding is that you may not have all of these in front of you, so I think we’re going to try to put them up on the screen if that works for you.

MR. IHNEN: Your Honor, may I approach?

THE COURT: Please.

BY MR. IHNEN:

Q Ms. Thomas, can you see the document

that we've put on the screen?

A I can.

Q Okay. Have you seen this document before?

A I have.

Q Okay. Can you tell me which of these topics you were selected to testify about today? And if we need to scroll through those, we can.

A We would need to scroll through.

Q Topic one.

A I'm prepared to discuss that.

Q Okay.

MR. IHNEN: Next page, please.

BY MR. IHNEN:

Q Any of these?

A Two.

Q Okay.

MR. IHNEN: Next page, please.

BY MR. IHNEN:

A Seven.

Q Okay.

A Generally, eight. Generally, nine.

MR. IHNEN: Okay. Next page, please.

BY MR. IHNEN:

A Ten, generally. Eleven. Generally,

12.

MR. IHNEN: Okay. Next page.

BY MR. IHNEN:

A In a general sense, 14. And I can speak to 15.

Q Okay. And I believe there's just one more.

A Seventeen, yes.

Q Okay. Thank you.

MR. IHNEN: Your Honor, I'd like to mark the Tennessee Lethal Injection Protocol as Pike Exhibit 2.

(Exhibit No. 2 - entered into evidence)

THE COURT: All right. Did we mark the first exhibit, the subpoena, as Exhibit 1?

MR. IHNEN: Yes, Your Honor.

May I approach?

THE COURT: Exhibit 2 will be the Tennessee Department of Correction Lethal Injection Execution Protocol.

BY MR. IHNEN:

Q And, Ms. Thomas, we have the protocol up on the screen, but my understanding is you actually do have a copy of this in front of you; is that correct?

A That is correct.

Q And is it substantially the same as the one that's being shown on the screen?

A I only see the first page of the one on the screen.

Q Yeah, that sounded like a trick question. It wasn't.

MR. IHNEN: Can you scroll through just briefly?

BY MR. IHNEN:

Q Ms. Thomas, does that look like the protocol that you have in front of you?

A Yes.

Q Okay. You already testified a little bit about your general role in executions but I want to talk a little bit more about what that looks like. Do you plan and direct pre-execution activities?

A I do.

Q Can you explain what those are? Without revealing any identifying or confidential information.

A Like this, in preparation.

Q Okay. And then do you plan and direct execution activities?

A It's part of our practice and preparation.

Q I think I'm making the distinction about the actual day of execution as opposed to anything that happens prior. What is your involvement on the day of execution, I guess?

A Observation and oversight.

Q Oversight of what or whom?

A The process.

Q And then what is -- what are -- do you direct and plan post-execution activities?

A I do.

Q Okay. And what does that consist of?

MR. WICKENHEISER: Objection, Your Honor. I mean, I'm not sure what the relevance of the post-execution activities are in challenging what the actual execution, whether that causes pain and suffering.

MR. IHNEN: I can withdraw that question, Your Honor.

THE COURT: All right.

BY MR. IHNEN:

Q Can we turn to page nine of this document? Do you have that in front of you, Ms. Thomas?

A Yes.

Q Okay. And can you read what the heading is on this page?

A "Composition, Selection, and Training of Department and Non-Department Personnel."

Q Okay. Can you tell me -- my understanding is these are all members of the execution team; is that correct?

A Yes.

Q Okay. Can you tell me which of these teams that you select or supervise?

A All of them.

Q Okay. How do you make the selections for the members of these teams?

MR. WICKENHEISER: Objection, Your Honor. I'm struggling to see -- the IV team isn't on here, and I thought this was -- you know, I thought this testimony would be centered around peripheral IV access. I'm not sure how the selection of the warden or the special operations team, or the straight team, or the escort team has to do with what peripheral IV access could possibly --

THE COURT: Is there some relevance here, Counselor, that I'm --

MR. IHNEN: Your Honor, I can lay some foundation on this.

THE COURT: Okay.

BY MR. IHNEN:

Q Can you flip to page seven of the protocol, please? Do you see that Ms. Thomas?

A I do.

Q Okay. And under special operations team, can you read what it says there?

A "The special operations team is responsible for preparing the lethal injection chemicals for administration."

Q Okay. So without revealing the names or identities of any of these members, are the members of the special operations team involved in the IV process for executions?

A Would you elaborate on what your definition of involved means?

Q Well, can you -- what does preparing the lethal injection chemicals for administration mean?

A It means preparing them for the process. Without getting into specific details, I think preparing is pretty specific in that they handle the chemicals.

Q Okay. Can we turn to page 11 in this document? Do you see that, Ms. Thomas?

A I do.

Q Okay. And under number one there can you read which team that is?

A Which number one are you referencing?

Q Number one at the top of page 11. I'm sorry about that.

A "IV team consists of at least two members who are either physicians, physician assistants, nurses, emergency medical technicians (EMTs), paramedics, military corpsmen with relevant medical training or other certified or licensed personnel, including those trained in the United States Military. All team members are currently certified, licensed, and/or qualified within the United States to place IV lines. IV team members are selected by the commissioner."

Q Okay. And you just read that last sentence there that these members are selected by the commissioner. Do you have any oversight over the IV team?

A Oversight as in what -- your question -- if you can, be more specific what you mean by that.

Q Do you check any of the qualifications of the members of the IV team?

A I do.

Q And what does that entail?

A I verify their license and their

certification.

Q And how do you do that?

MR. WICKENHEISER: Your Honor, I'm --

THE WITNESS: I go to --

MR. WICKENHEISER: I'm sorry. Sorry, A.C. Thomas. Your Honor, I'm just going to briefly object. And I'm not sure that we've gotten there yet, I just want to be clear here that the State is going to take the position that, you know, if we get into exactly what the jobs are of these folks, that that is reasonably identifying information. And so, you know, to the extent that A.C. Thomas is going to discuss exactly how these folks are qualified, we'd ask that the Court really instruct A.C. Thomas and instruct the counsel to make sure that that stays general to a higher level, like, you know, decades of experience or, you know, like a general kind of description of their position as opposed to getting into the details of that because that could identify those individuals.

THE COURT: Well, I can do that but the question is going to be whether Ms. Thomas misunderstands the question and blurts out a specific regardless of what I say.

So, Ms. Thomas, I am going to direct your attention to the fact that the identity of all these

people on this team is privileged and we do not want you to testify about anything that could be used to identify these persons. So I want you to keep your responses as generic and general as possible. And if you need to pause and hesitate before you answer a question and give it some thought, please do so.

With that being said, I would ask counsel if you could try to make it as obvious as possible when you're asking her general questions as opposed to specifics.

If you know the answers to the questions and you -- as far as I'm concerned -- you may lead unless we get an objection from the other side.

MR. IHNEN: Thank you, Your Honor.

BY MR. IHNEN:

Q Ms. Thomas, I think I just asked you how you check the qualifications of these members. And, again, with the admonition from the Court not revealing any identities, not revealing any type of information that could reasonably be tied to any of these members, what is your process for verifying the qualifications of these members?

A I check the Tennessee Department of Health license on people that participate in the team to make sure they are currently licensed in the state of

Tennessee.

Q Okay. And what type of license is required to be a member of the IV team?

A The state of Tennessee -- I look for licenses. We identify in the protocol in section one what their job titles may be. The job titles are described and I check to see if they are in good standing with the state of Tennessee.

Q And so is there any specific type of license or certification that a member of the IV team must have?

MR. WICKENHEISER: Objection, Your Honor. I mean, to be clear here, the licenses are -- those do describe the specific job, right? So I mean, there's folks that have licenses to be EMTs, paramedics, nurses, doctors, so the licensure -- if she reveals exactly the licensure of these folks, that is identifying their job.

So, you know, I think A.C. Thomas is said that she checks that they have the licenses. I don't know if we need to delve into what those are specifically.

THE COURT: What was your question again? I may have -- I thought I understood it a different way than counsel did.

MR. IHNEN: Which type of licenses or certifications is required to have to be a member of the

IV team?

I understood counsel's objection and this Court's admonition to be revealing personal identifying information about individuals on the IV team, not what their qualifications are to serve on the IV team.

THE COURT: I interpreted her answer that it was -- the licenses of the relevant professions listed in this paragraph that you elicited. And then I thought your question was is there a specialized license devoted strictly to execution but, apparently, I misunderstood your question. So there's a part of me that wants to say that this question has been asked and answered, but maybe I misunderstood the question.

MR. IHNEN: That's fine, Your Honor, I can move on.

BY MR. IHNEN:

Q Ms. Thomas, as part of your check on these licenses, does that include any check about whether any of these individuals are under any type of disciplinary action?

A Again, I check the Tennessee Department of Health. The information that's contained on there is what I use to verify.

Q Okay. Does the Tennessee Department of Health include on a license verification whether or

not someone has been disciplined?

A I'm not sure about that. I wouldn't say that I know that to be a fact, no. I don't know.

Q Okay. Can you tell me who selects the physician for executions?

A Number two in the protocol indicates the physician is selected by the commissioner.

Q Right. Do you play any role in verifying that individual's credentials or license?

MR. WICKENHEISER: Your Honor, I thought we weren't going to get into the qualifications of the physician to set the central line. That would be I think the only qualification of a physician, unless I'm mistaken and counsel can certainly correct me, would be their qualifications to set a central line. And so if we're not getting into that, I'm not sure how this is relevant.

THE COURT: Is there some relevance?

MR. IHNEN: Your Honor ruled that Ms. Pike could explore the central line option. That necessarily requires us to understand -- there was specific qualifications and certifications that someone must have to place a central line, and I'm just asking Ms. Thomas if they verify that.

THE COURT: No, I ruled you could not get into

the specific qualifications of the physician under one and three. You can get into your proposed qualifications of a hypothetical physician under your -- four.

MR. IHNEN: Okay.

THE COURT: But the qualifications under question one and three of this physician is not relevant to the Stovall inquiry for those questions.

MR. IHNEN: Just so I understand Your Honor's ruling. We can present evidence on the ideal qualifications of a physician that needs to place a central line but not what qualifications that individual might have that --

THE COURT: Well, your proposal --

MR. IHNEN: -- TDOC hires --

THE COURT: -- for an alternative is a central line by a licensed physician.

MR. IHNEN: Correct.

THE COURT: So this qualifies. So I expect you to put on proof about that.

MR. IHNEN: But we can't ask Ms. Thomas what those qualification -- what TDOC considers qualified? Is that -- I just --

THE COURT: Well, yeah, I think that's off the table. You can do that by independent evidence, but the qualifications of the physician that TDOC actually uses

is not relevant.

MR. IHNEN: That wasn't --

THE COURT: The one -- I'm not totally cutting you off, but it's a fine nuance that --

MR. IHNEN: I understand.

THE COURT: -- you've got a proposal and I'm going to let you make your proposal and put on the evidence about that proposal but the fact that your proposal may not be in effect now as -- except if it was in effect, you wouldn't be asking for it, I guess.

BY MR. IHNEN:

Q Okay. Can we turn to page 12 of the protocol? Are you there, Ms. Thomas?

A I am.

Q Okay. Can you read what that second heading is?

A Second as in monthly practice sessions?

Q Yes, ma'am.

A Okay.

Q Can you describe your role in the monthly practice sessions?

A I observe practice. I monitor the training and make sure all participants are there and I oversee the practice.

Q Does the IV team participate in those practices?

A They do.

Q Does the IV team, do they practice in any other way beyond these monthly practice sessions?

A I don't understand your question.

Q Beyond the monthly practice sessions authorized by the protocol, does the IV team have any type of specialized practice?

A I can't answer that. I don't know. I don't know.

Q Can you read right above where it says "Monthly practice sessions", can you read number two right there?

A "At least annually the warden or designee reviews the protocol in its entirety with the execution team. This review is documented."

Q And, Ms. Thomas, are you involved at all in that process?

A I am.

Q Okay. When was the last time that this protocol was reviewed?

A Last year as indicated in the protocol. Annually at the end of the year.

Q Okay. I'd like to pull up the

declaration you filed in this case.

A Okay.

Q You have that in front of you? Can you see it on the screen, Ms. Thomas?

A Yes.

Q Okay. Can you read paragraph four for me?

A “In my current position, among other duties and responsibilities, I am responsible for several aspects of TDOC’s lethal injection execution protocol, including overseeing the transport and observation of inmates sentenced to death.”

Q Okay. And in your current position will you oversee the transport and observation of Ms. Pike?

A I will.

Q Has TDOC made any provision to ensure that female corrections officers will observe Ms. Pike?

A Yes.

Q Can you describe what steps have been taken?

A Without being specific, it’s the same steps we use for everyone else. We select staff, speak to them, and then we go through a normal process of

assigning the work or the transportation as we would do with any other inmate in the transportation process.

Q Has TDOC made any provision to ensure that female corrections officers will transport Ms. Pike to Riverbend?

A I have given thought of all of our staff that work transportation are trained to transport but we will definitely use females, but that's the extent that I can commit to. We will use female staff.

Q Do the officers involved in the transport have specific training on dealing with female inmates?

A Ms. Pike is housed at a female institution and we do have female staff trained in transportation.

Q Is it your testimony that female staff from Debra Johnson will be transporting Ms. Pike to Riverbend?

A That is not my testimony. My testimony is that she's housed at a female institution so we do have staff who are trained in transportation. But we also have staff that are trained throughout in transportation -- the state.

Q Can you read paragraph five of your declaration for me?

A "TDOC plans transfer -- plans to transfer Christa Pike who is currently housed at the Debra Johnson -- Debra K. Johnson Rehabilitation Center to the Capital Punishment Unit at Riverbend Maximum Security Institution no earlier than 24 hours before her scheduled execution at 10:00 a.m. on September 30th, 2026."

Q And what does the lethal injection protocol say about the transfer of a female inmate to Riverbend?

A What part are you referring to --

MR. IHNEN: If we can pull that up.

THE WITNESS: -- please?

BY MR. IHNEN:

Q Ms. Thomas, I'm on page --

A I'm sorry?

Q We're going to pull that back up for you.

A Okay.

Q Page 16 of the protocol. Can you read number three there under 48 hours before execution?

A "Oversees transfer of female inmate from DJRC to Riverbend Maximum" --

Q Thank you, Ms. Thomas.

MR. IHNEN: I'd like to mark the next set of

documents as Pike Exhibit 3.

(Exhibit No. 3 - entered into evidence)

MR. IHNEN: Your Honor, may I approach?

THE COURT: Sure.

BY MR. IHNEN:

Q We're trying to pull those up, Ms. Thomas.

MR. IHNEN: Your Honor, could we just have a second?

THE COURT: Sure. We'll stand in a short recess. I'm not going anywhere but we're in recess.

(Whereupon, a recess was taken.)

THE COURT: We're back in session.

Are you ready, Madam Court Reporter?

COURT REPORTER: Yes, sir.

THE COURT: The first thing that pops on this says "Byron Black". Does this have any relevance to our case?

MR. IHNEN: These are public records provided by the Tennessee Department of Correction pursuant to a public records request that details what the observation looks like of inmates in the Capital Punishment Unit. There's a document in these -- in this set of documents that's actually not in the protocol that talks about the procedures in the Capital Punishment Unit where Ms. Pike

will be housed for the last 24 hours.

Your Honor, if we want to go back on the record. I think we'll move on from this exhibit. We might come back to it --

THE COURT: All right. We're back in session.

MR. IHNEN: -- if that's okay.

BY MR. IHNEN:

Q Ms. Thomas, we're having some IT troubles here, so we're going to move on from that exhibit, if that's okay with you.

A Yes.

Q Okay. Can you -- going back to your declaration, can you read what paragraph six says?

A "TDOC will make every effort to assign only female staff to observe Ms. Pike while she is housed at RMSI."

Q Okay. And what efforts has TDOC taken to ensure that Ms. Pike will be observed by female corrections officers?

A As I've previously testified, we identified female staff that, much like we do with the male staff, and we have identified female staff that we will utilize.

Q Do you know how many officers typically work an observation period in the CPU?

A I don't.

Q Do you know how long each of those shifts are?

A I don't.

Q Do you know how many female corrections officers are employed by Riverbend Maximum Security Institution?

A I don't.

Q Do you know how many female corrections officers are employed by TDOC?

A I don't.

Q Are you familiar with the P-R-E-A? PREA.

A Are you referring --

MR. WICKENHEISER: Objection, Your Honor. I'm not sure what the relevance of the Prison Rape Elimination Act would be in this particular context.

THE COURT: Well, I have to confess ignorance. What is it that you're asking her?

MR. IHNEN: The Prison Rape Elimination Act requires male -- female guards to be -- female inmates to be observed by female guards. It's got certain requirements about who can be involved in that process. And I'm going to ask Ms. Thomas about her understanding of that law, basically her declaration -- it's basically

stating what the law already says.

MR. WICKENHEISER: Your Honor, if they wanted to bring a PREA case, they could've brought it. This is about whether or not there's a constitutional amendment -- or constitutional injury that's occurred. Here we've put in a declaration of this is what's going to happen. I'm not sure what the impact of PREA could be on all of that.

THE COURT: What is the impact?

MR. IHNEN: Your Honor, there's a 2023 audit report by the Tennessee Department Comptroller of the Treasury that found certain violations by TDOC with PREA and so I would like to ask Ms. Thomas about that as it relates to the staffing on Ms. Pike's case.

THE COURT: Yeah, I think that's irrelevant. I'll exclude that.

MR. IHNEN: Okay.

BY MR. IHNEN:

Q Can you read number seven of your declaration?

A "Ms. Pike will be the only inmate in the Capital Punishment Unit during the entire time she's housed at RMSI."

Q To your knowledge, are there usually inmates housed in the Capital Punishment Unit outside of

executions?

A No.

Q Okay. Can you read number eight for us?

A “In addition, a privacy screen will be available while she is housed at RMSI.”

Q Can you explain what a privacy screen is?

A It’s a screen that affords privacy.

Q Do the male inmates transfer to the Capital Punishment Unit get access to a privacy screen?

A They do.

Q Why would Ms. Pike need a privacy screen if she’s being observed by female officers?

A The privacy screen affords a person a degree of privacy when they are using the restroom or taking a shower.

Q Okay. Do you or TDOC conduct any assessment about the specific medical conditions of an inmate that’s scheduled to be executed?

A We do.

Q Does TDOC implement any sort of additional practices regarding those inmates’ specific medical conditions?

A Where appropriate, yes.

Q In what situations is that appropriate?

A I confer with clinical staff and based on the information provided if there is a need to make adjustments or some type of accommodation, we do.

Q Has TDOC ever made an accommodation for an inmate scheduled to be executed based on their specific medical conditions?

A It's not based on their specific medical condition. It's based on the information that's provided to me by our clinical providers.

Q Okay. Have you or TDOC conducted any assessment about Ms. Pike's specific medical conditions?

A I have consulted with our clinical providers about her, any type of medical condition that will have an impact on our execution process.

Q Has TDOC taken any steps to implement changes to the protocol based on Ms. Pike's specific medical conditions?

A Changes to the protocol? What does that look like, please?

Q Well, I believe you called them accommodations, so maybe that's the better word.

A At this point, we have not.

Q Okay. Do members of the execution team receive any sort of additional training based on an inmate's specific health concerns?

A If it's appropriate or recommended by clinical providers.

Q Has TDOC ever implemented a specialized training for members of the execution team for an inmate scheduled to be executed?

THE COURT: Rephrase that question. I'm not sure I understood the question.

BY MR. IHNEN:

Q Give a -- has TDOC ever implemented a specialized training for an inmate's specific medical conditions for someone that's scheduled to be executed?

A Yes.

Q Have you or TDOC had any discussion about an inmate's psychological history or mental illness prior to an execution?

A Yes.

Q Have you had any discussions about Ms. Pike's specific psychological history of mental illness and how that may affect her execution?

A Yes.

Q Do you or TDOC evaluate alternative methods of execution?

THE COURT: You may need to clarify. I mean, there is an alternative, electrocution, are you talking about other than that?

MR. IHNEN: Right.

BY MR. IHNEN:

Q Ms. Thomas, I'll clarify that question. When an inmate proposes a specific alternative method of execution, do you or TDOC evaluate that?

A No.

Q Okay.

MR. IHNEN: One second.

BY MR. IHNEN:

Q Ms. Thomas, can you see --

MR. IHNEN: Have you shared that yet? Have you shared it yet?

THE WITNESS: I'm sorry?

MR. IHNEN: I'm sorry, we're dealing with some IT issues here.

THE WITNESS: Okay.

BY MR. IHNEN:

Q Can you see on the screen, Ms. Thomas?

A I can.

Q Okay. And I believe we marked this as Exhibit 3. I'm going to ask my paralegal to turn to

page 56.

Do you see this page on your screen, Ms. Thomas?

A Yes.

Q Have you ever seen this document before?

A Yes.

Q Is this document part of the Tennessee Lethal Injection Protocol?

A Yes.

Q Can you tell me where to find this document in the Tennessee Lethal Injection Protocol?

A The post order is for the staff that work the post. I really can't tell you where to find it but they are part of the protocol.

Q Would you like us to pull up the protocol, Ms. Thomas?

A I don't need it pulled up. It's part of post orders.

Q I think my question was where in the protocol is this document?

A I can't answer that.

Q Okay. Would you agree with me that this document is not in the Tennessee Lethal Injection Protocol?

A Again, I can't answer that.

Q Okay.

MR. IHNEN: Can we pull up the lethal injection protocol, please?

BY MR. IHNEN:

Q Ms. Thomas, I'm going to have my paralegal scroll through the protocol. Will you tell me to stop when you see this document, please?

A Post orders.

MR. IHNEN: Can you go back to that one?

BY MR. IHNEN:

Q Is this --

MR. IHNEN: Go back.

BY MR. IHNEN:

Q Is this the one you were talking about?

A The post orders now -- I don't recall exactly the one you put on the screen, but they are post orders.

Q Okay.

MR. IHNEN: Can we go back to that document?

BY MR. IHNEN:

Q Are these the same documents, Ms. Thomas?

A Okay. Can you --

Q Go back to the other?
A Okay. So go to the one you had. That's different.
Q Okay.
MR. IHNEN: Can we go back to the exhibit? That one. Yeah.
BY MR. IHNEN:
Q Ms. Thomas, under primary responsibilities, do you see that there?
A I do.
Q Can you read what that second paragraph says?
A "Female inmates sentenced to death will be transferred to Riverbend Maximum Security Facility and housed in the Capital Punishment Unit at least 12 hours before the scheduled execution. There are not all -- these are not all-inclusive duties, therefore, staff is subject to other duties as assigned."
Q Okay. Would you agree with me that this document says that Ms. Pike would be transferred to Riverbend 12 hours before her scheduled execution? At least 12 hours before her scheduled execution?
A That's what it says, yes.
Q Okay. Would you agree with me that your declaration says that Ms. Pike would be transferred

to Riverbend 24 hours before her scheduled execution?

A Yes.

Q And would you agree with me that the lethal injection protocol says that Ms. Pike would be transferred 48 hours before her scheduled execution?

A Yes.

Q Okay.

MR. IHNEN: I think that's all I have, Your Honor.

THE COURT: All right. Let me ask you something. This Exhibit 3, are you going to get back into that later?

MR. IHNEN: With Warden Nelson, Your Honor, yes.

THE COURT: Okay. There's a lot of pieces of paper for one exhibit.

Cross-examine.

CROSS-EXAMINATION

BY MR. WICKENHEISER:

Q Hello, A.C. Thomas. My friends over here have already covered a lot of the stuff that I had planned to ask you, so I think I'll try to keep this relatively short.

You mentioned that you have been in that role since 2023. Could you describe to me your work history

before that?

A Prior to coming to Tennessee, I worked just slightly under 30 years where I retired from the Federal Bureau of Prisons. In 2016, following my employment there, I worked at CoreCivic, a private agency for just over three years there as well -- just over three and a half years prior to coming to Tennessee.

Q Okay. And what was your role at the Federal Bureau of Prisons when you retired?

A I was a warden.

Q And what was your role at CoreCivic?

A A warden.

Q Okay. Do you still have that declaration in front of you?

A I do.

Q Okay.

MR. WICKENHEISER: I don't -- I don't think that's been marked as an exhibit, so I'd like to mark that State Exhibit A and I have a copy of the -- I'm sorry, can we do numbers instead, so can we do State Exhibit 1?

THE COURT: So let me be clear. Is the intention of the parties to not consecutively number the exhibits for both sides at one time? Or does each side want to --

MR. WICKENHEISER: I don't know if we really worked that out, Your Honor. Consecutive? Okay. So are we on four?

THE COURT: I guess what I'm asking, have you pre-marked -- have you decided already? If not, we're just going to have one set of numbers.

MR. WICKENHEISER: Okay. That's perfect.

THE COURT: Okay.

MR. WICKENHEISER: We'll do Exhibit 4.

THE COURT: Okay.

MR. WICKENHEISER: Thank you, Your Honor.

THE COURT: Can you -- when you introduce an exhibit, to the best extent that you can, ask the witness to give us some type of identification --

MR. WICKENHEISER: Yes, Your Honor.

THE COURT: -- on what it is.

MR. WICKENHEISER: Yes, Your Honor.

BY MR. WICKENHEISER:

Q A.C. Thomas, do you recognize this document? The declaration.

A I don't see it on the screen, but I have it pulled up on my -- in front of me.

Q What is it?

A I don't see anything on the screen.

Q I'm talking about the document I

sent you earlier today. The exhibit I sent you earlier today.

A Oh, my declaration. Yes. Sorry.

MR. WICKENHEISER: And I'd like to mark this Exhibit 4.

THE COURT: All right. We'll mark that Exhibit 4.

(Exhibit No. 4 - entered into evidence)

BY MR. WICKENHEISER:

Q Could you please take your time and read it? Let me know when you've had a chance to read all of the paragraphs.

A I've read it.

Q Is the declaration still accurate today?

A It is.

Q Okay. Where is Ms. Pike currently housed?

A She's currently housed at the Debra K. Johnson Rehabilita -- Rehabilitation Center.

Q And the staff at DJRC, are they men and women or just women or just men?

A Both.

Q Okay. Is that different from any other Tennessee prison?

A It is not.

Q Okay. I'd like to touch a little bit on Mr. Ihnen talked to you a little bit about observation. Could you describe to me what the purpose of the observation period is and the continuous observation logs?

A Continuous observation documents activity of the inmate over a period of time. Their recreation, their eating, their property, their reading, any type of activity in the cell, but in addition to that, the recreation, showers, visits, et cetera.

Q And why do you all do that observation and keep those logs?

A We do it -- actually, we do that -- it's actually an ACA standard when a person is in a continuous lockdown status. It's a standard that the American Correctional Association requires that we document it. And it's also good correctional practice. In my over 35-year history, I honestly don't remember not using that form -- a similar form in a -- for a person that's in continuous lockdown status.

It documents activity. It allows for staff who visit those areas, leadership, medical, mental health -- correctional supervisors to be able to review the document to see what's going on, making sure that we're

all observing what's going on while the person is in that status.

Q Okay. And the observing officers, what are the observing officers' responsibilities when they're performing that task?

A To observe the inmate. To be able to respond to any direct request. To -- to have one-on-one observation during that period of time.

Q Okay.

A And document it.

Q Are they observing any other inmates at that same time?

A No, it's one-on-one. No.

Q So there will be no other inmates at RMSI near Christa Pike when -- when they're doing that observing?

A That is correct.

Q I'd like to change tracks a little bit and talk about the IV -- the IV team. Mr. Ihnen asked you a bit about the licensure for those folks and I just wanted to clarify that specifically. Do all members of the current IV team meet the qualifications described in the protocol?

A They do.

Q Okay. And without giving any

identifying information or anything that could reasonably lead someone to discover who those folks are, do you know if those individuals' current occupations involve IV access?

A They do.

Q And, again, not identifying years of experience exactly or anything like that, do you know roughly how much experience all these individuals have in providing IV access?

A I would say decades.

Q Decades? Each of them has decades?

A Yes.

Q Okay. I'd like to talk a little bit about the process of establishing peripheral IV access. Do you know how many needles are in the execution room?

A Yes.

Q How many?

A Four.

Q Do you know what the size of those needles are?

A I do.

Q What are they?

A 18, 20, 22, and 24.

Q Since your time as assistant commissioner, are you aware that whether the IV staff has

ever requested different size needles on the cart?

A I'm not aware of that, no.

Q Is there a 23-gauge butterfly needle on the cart?

A There is not.

Q Okay. Mr. Ihnen also asked you a little bit about accommodations made to folks who have an execution upcoming. Without revealing any identities, could you just describe the process that you described for how you find out whether an accommodation will be made for a physical or mental ailment?

A I reach out to clinical professionals and confer with them. They review the medical record and then we have a discussion of whether or not their -- in their professional opinion that -- anything that is in their record would have any type of impact on our ability to carry out an execution.

Q And I think I heard you testify to this but I wanted to make sure. Have you followed that process for Ms. Pike?

A I have.

Q And from those conversations, did -- are you making any accommodations on the protocol from those conversations?

A Not at this time, no.

Q Okay. Could you tell me what a post order is?

A Post orders are a general guideline that gives correctional staff an idea of what things we would like for them to accomplish during their shift.

Q Okay. Who has the ultimate authority over when Pike gets transferred?

A Ultimate authority would be the commissioner.

Q Okay. I'd like to also just briefly touch on the alternative forms of execution that Mr. Ihnen brought up. Since you've become Assistant Commissioner, has TDOC ever considered hanging?

A No.

Q Do you know if TDOC has anyone on staff that experienced carrying out judicial hangings?

A Not that I'm aware of.

Q Do you know if TDOC has the equipment to carry out a judicial hanging?

A Not that I'm aware of.

Q Has TDOC ever considered using 23-gauge butterfly needles?

A No.

Q Okay.

MR. WICKENHEISER: That's all the questions I

have.

THE COURT: Redirect?

MR. IHNEN: Just briefly, Your Honor.

REDIRECT EXAMINATION

BY MR. IHNEN:

Q Ms. Thomas, you just testified that Ms. Pike is currently supervised at Debra Johnson by male and female corrections officers; is that correct?

A I don't think I said that.

Q Okay. Do male and female corrections officers currently work at Debra Johnson Rehabilitation Center?

A Yes.

Q Okay. Is Ms. Pike currently observed 24 hours a day at the Debra Johnson Rehabilitation Center?

A I don't know.

Q Okay. Can you explain what continuous lockdown status means?

A Continuous observation?

Q So your testimony is that continuous lockdown status means continuous observation?

A Will you repeat your question, please?

Q You testified that inmates on

continuous lockdown status receive one-on-one observation and I'm asking you to explain what continuous lockdown status means.

A Continuous lockdown is, again, an American Correctional Association term where people are removed from the general population and does not have free movement throughout either the facility or the area where they're housed.

Q Is continuous lockdown status different from solitary confinement?

A There are differences.

Q Can you explain what those are?

A Solitary confinement is an old term. It's an outdated term. It's called restrictive housing today. And restrictive housing has several different forms. There is a punitive side of restrictive housing and there is an administrative side of restrictive housing. So you have two different forms of restrictive housing.

Q What is the punitive form?

A Punitive is when a person has gone through a disciplinary process and sanctions of punitive confinement is imposed by a hearing board member or team.

Q Do those inmates receive one-on-one observation?

A Some do. Some don't.

Q Are those inmates limited by their rec time, their ability to leave their cell?

MR. WICKENHEISER: Your Honor, I'm going to have to object. I think we've gone -- the protocol has specific conditions, whether or not other folks in the prison have those specific limitations, I don't think is relevant to whether or not there's a constitutional violation to the -- to what the protocol requires. I think comparisons to other inmates is not helpful in that analysis and I don't see the relevance.

MR. IHNEN: I'm not making comparisons to other inmates. I'm making a comparison to what she's testified to as continuous lockdown for death row inmates and solitary confinement, and we had a little bit of a colloquy about that this morning.

THE COURT: I'll give you a little leeway on that.

BY MR. IHNEN:

Q Ms. Thomas, what is one-on-one observation? What does that entail?

A One-on-one, respectfully, is exactly what it says, one person, one person. A staff member and one inmate.

Q And is that the status of inmates

that are moved to the Capital Punishment Unit?

A Yes.

Q Can you tell me how you verified that members of the IV team have decades of experience?

A I spoke to them and their records indicate based on the Tennessee Department of Health. Their dates of initial certification and licensure.

Q Okay. You said you speak to clinical professionals before making any decisions about execution accommodations; is that a fair representation of your testimony?

A Yes.

Q Are those clinical professionals employed by the TDOC or are they outside clinical professionals?

A The person who I speak to are clinical staff that works for TDOC.

Q Was it multiple people or just one? You testified there was professionals earlier.

A It depends on -- I've spoken to more than one person.

Q Okay.

MR. IHNEN: Nothing further, Your Honor.

THE COURT: Anything else?

MR. WICKENHEISER: No.

THE COURT: Thank you, ma'am. They're willing to let you go now.

THE WITNESS: Thank you, Your Honor.

(Whereupon, the witness was excused.)

THE COURT: Okay. Does anybody need a break? Madam Court Reporter?

COURT REPORTER: I'm good. Thank you.

THE COURT: Lawyers? All right. Call your next witness.

MR. IHNEN: Your Honor, we would like to call Warden Kenneth Nelson.

THE COURT: Is this going to be by Zoom?

MR. IHNEN: Yes.

THE COURT: And what was the name again?

MR. IHNEN: Warden Kenneth Nelson.

THE COURT: Can you hear us, Mr. Nelson?

MR. NELSON: Yes, sir, I can.

THE COURT: Thank you.

MR. IHNEN: Are you going to swear him in, Your Honor?

THE COURT: Thank you. A little small detail. Raise your right hand, sir.

(Whereupon, the witness was sworn.)

THE COURT: Thank you, sir.

The witness, KENNETH NELSON, was called

and, having been duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. IHNEN:

Q Good morning, Warden Nelson. How are you?

A Good morning, sir. I'm doing well, thanks.

Q And I said this to Ms. Thomas, but the camera is in front of me but you're over here, so I may be looking both ways. So I apologize if that's a little confusing.

A Yes, sir.

Q Can you state your full name, title, and your current position?

A Yes, sir. Kenneth Joseph Nelson. I'm currently the warden at Riverbend Maximum Security Institution.

Q And how long have you held that position?

A Since June of 2024.

Q And where were you before that?

A I worked for eight year or -- I'm sorry, six years in the South Carolina Department of Corrections.

Q How many executions --
A And --
Q I'm sorry. You --
A I'm sorry. Prior to that I retired from the New Jersey Department of Corrections after 25 years.
Q How many executions have you overseen as a warden?
A Four.
Q How many executions have you participated in?
A Four.
Q Okay. I'd like to pull up the lethal injection protocol. This is our Exhibit 2, I believe.
Warden Nelson, can you see that on the screen?
A Yes, sir.
Q Okay. Are you familiar with this document?
A Yes, sir, I am.
Q Okay.
MR. IHNEN: Can we flip to page nine, please?
BY MR. IHNEN:
Q Warden Nelson, I see your name listed there at number two. Can you tell me which of

these teams you supervise?

A So during the process I would supervise -- I would supervise the entire process as it goes. So I would say most of them.

Q And do you select any of the members for these teams?

A The only team I select is the escort team.

Q Okay. So you do not select members of the IV team?

A That’s correct.

Q Do you supervise members of the IV team?

A I do not tell them how to do their jobs because I don’t have that technical expertise.

Q Do you know what type of training the members of the IV team receive?

A I do not.

Q Are you involved in any way in the training that the IV team members receive?

A I am not.

Q I’d like to turn to page 36 of the protocol. Can you read what that says at the top there, Warden?

A “Specific post orders, restraint

team."

Q Okay. And under primary responsibility can you read what it says there?

MR. AYERS: Objection, relevance. The restraint team is not relevant to any issue before the Court.

THE COURT: Is there some relevance that --

MR. IHNEN: Your Honor, this goes to issue two regarding Ms. Pike's time at Riverbend. How she'll be observed in the Capital Punishment Unit and how she'll be removed from her cell and strapped down to the gurney prior to her execution.

THE COURT: I think the question -- question number two was focused on her movement to Riverbend and her observation for two weeks. If they wanted me to talk about what happens at -- during the exact moment of the execution, they would've told me that. So I don't see the relevance of this particular issue.

MR. IHNEN: Okay.

THE COURT: It may in fact be relevant to your underlying litigation down the road, but the Court has directed me to two specific things to look at and beyond that it's not appropriate to answer these questions is what I'm trying to say.

MR. IHNEN: Okay.

BY MR. IHNEN:

Q Warden, do you know how many female corrections officers work at Riverbend?

A I do not.

Q Okay. To your knowledge, has TDOC made any provision to ensure that female corrections officers are assigned to Ms. Pike once she's transferred to Riverbend?

A Are you talking about the transfer of her from DJRC to Riverbend?

Q I'm talking about once she is at Riverbend?

A Yes. I know there's steps being taken to have female officers observe her.

Q Okay. How many officers work in the Capital Punishment Unit?

A Are you talking about during the 48-hour observation, sir?

Q Yes.

A It would be four individuals at a time.

Q And how long are those shifts?

A Twelve hours.

Q Is the Capital Punishment Unit separate from unit two where the death row men are

housed?

A It is.

Q Is the Capital Punishment Unit used for any other purpose than executions?

A It is not.

Q Outside of executions, are there ever any inmates located in the Capital Punishment Unit?

A No, sir.

MR. IHNEN: I'd like to pull up Exhibit 3, public records. Can you go to page one?

BY MR. IHNEN:

Q Warden, I'm putting an exhibit on the screen. Do you see that there?

A Yes.

Q Okay.

MR. WICKENHEISER: What page is this?

MR. IHNEN: This is just page one.

THE COURT: The copy you gave me has no page numbers.

MR. IHNEN: Yes, the pages are all --

THE COURT: I just looked for 30 minutes for your last exhibit.

MR. IHNEN: I can pull them out for you, Your Honor.

THE COURT: That's all right. I found it.

BY MR. IHNEN:

Q Okay. We talked about this with Ms. Thomas. I'd like to go to page 56.

Have you seen this document, Warden?

A Yes, sir, I have.

Q Okay. To your knowledge, is this document in the protocol?

A It is not.

Q Okay. Do you know why that is?

MR. AYERS: I'm going to object --

THE WITNESS: No, I do not.

MR. AYERS: I'm going to object to the relevance to this line of questioning. Whether or not a document is in the protocol, the protocol speaks for itself and this issue is not relevant to an issue before the Court.

THE COURT: Well, he's just asking him to state the obvious. So I'm going to overrule it, but I don't know where he's going with this. So I'm not forbidding you from making another objection if he goes too far, but the fact that it's not in the protocol, I mean, is just -- it isn't.

BY MR. IHNEN:

Q Warden, can you read what it says under equipment?

A "In addition to accounting for your assigned key ring, radio, and handcuffs, ensure you have your post-log book and a supply of CR-2857 forms to document showers, recreation, meals, telephone calls, visitors, any other non-routine activities. For this post, a handheld metal detector, handcuff key, and grill door key is required."

Q Can you explain what a CR-2857 form is?

A I believe that is the continuous observation form.

MR. IHNEN: Can you go one page down?

THE COURT: Let me interrupt just a second. So is this what is going on during the 48 hours or the 14 days?

MR. IHNEN: The Capital Punishment Unit is the 48 hours.

THE COURT: So they have a telephone in the cell with them?

MR. IHNEN: I'm not sure, Your Honor.

THE COURT: And visitors? And recreation? I mean, I got the impression that you were trying to say they were like in some kind of solitary confinement isolated from the world and --

MR. IHNEN: Your Honor, I read this to say

that the forms document those things not that the individuals necessarily have them.

THE COURT: Okay. That's a subject for the parties to -- go right ahead. What is -- you were asking about that form.

BY MR. IHNEN:

Q Warden, is this a CR-2857 form?

A It is not.

Q What type of form is this?

A That is what I thought was the CR-2857. This is a monitoring report for behavioral health is where it's generated from.

Q Okay.

MR. IHNEN: Can you go back to the previous one?

BY MR. IHNEN:

Q Okay. Under primary responsibility on this page, can you read what it says there?

A "The post commences 48 hours before a scheduled execution. You have the responsibility of continuous direct supervision of the inmate while he or she is housed in a holding cell in the Capital Punishment Unit in preparation for his or her sentence being carried out. You'll be positioned immediately outside of the inmate's cell with a direct line of sight inside the

cell.

Female inmates sentenced to death will be transferred to Riverbend Maximum Security Facility and housed in the Capital Punishment Unit at least 12 hours before the scheduled execution.

These are not all-inclusive duties, therefore, staff are subject to other duties as assigned."

Q So, Warden, does this section apply to female inmates as well?

A It would, yes.

Q And can you explain what continuous direct supervision means?

A So the officer is positioned outside the inmate's cell. They have to have a constant visual sight of the inmate to observe all their activities.

MR. IHNEN: Okay. Can you flip two pages? 58.

BY MR. IHNEN:

Q Do you see that on your screen, Warden?

A Yes.

Q Okay. I'm looking at where it says allowable in-cell items. Can you read the sentence starting with shaving items?

MR. AYERS: I'm going to object to relevance

again. What's allowed in the cell is not relevant at all to any issue before this Court.

THE COURT: I don't know what -- I don't know what -- go ahead. I don't know what's allowable and not. If I knew, I could maybe rule but I've got no clue.

BY MR. IHNEN:

Q Starting with shaving items, Warden.

A Shaving items will be issued. However, you must be supervised at the designated time prior to the execution. Females may have feminine hygiene items as needed" --

Q You can --

A -- "upon completed use of returnable items they must be retrieved from the inmate. Requested items not identified above must be approved by" -- and then it's blacked out -- "and documented."

Q Okay. Warden, if Ms. Pike needed to shave for any reason, would she be allowed to do that?

A Yes.

Q Does Riverbend have female staff capable of supervising that pursuant to this instruction?

A I'm not sure why a female officer would have to supervise her shaving but, yes, we have plenty of female staff here.

Q Does the sentence say that use must

be supervised?

A Yes, it says you must be supervised.

Q Okay. Do you know if Riverbend has feminine hygiene products should Ms. Pike need them?

A I'm not sure.

Q Okay.

MR. IHNEN: Can you go to the next page?

BY MR. IHNEN:

Q Can you read what number four says?

A "Document inmate's actions that are not indicated on the observation record/log in the post log book."

Q Okay. What is the difference between an observation record log and the post log book?

A Well, every post is required to have a log book where you document the daily activities in the unit. The constant observation form is more for the individual.

MR. IHNEN: Can you turn to page 111?

BY MR. IHNEN:

Q Warden, would this be an example of a post log book?

A Yes, sir.

Q Okay.

MR. IHNEN: Can you go to 108?

BY MR. IHNEN:

Q And we've already looked at a sample of this form but I want to talk about it real quick. So I'm in the middle column. It looks like the date is 8-1, 0800. Do you see that, Warden?

A Yes, sir.

Q And would that be August 1st at 8:00 a.m.?

A Yes.

Q And there's an activity code there. Can you read what that says?

A It's a little blurry, but it looks like "19".

Q And does that correspond to an activity code listed above?

A Yes. It says, "Talking".

Q Okay. Can you go three lines down and read what that entry says?

A It looks like "8-20" something. I can't see it. It's kind of blurry. And it says, "one", which is other, and then it says he's showering.

MR. AYERS: Your Honor, I object to relevance again. The question is whether or not males or females will be observing Ms. Pike and parsing this form has nothing to do with that?

THE COURT: Well, I'm assuming you're introducing the form to show the type of observations that are made typically for men.

MR. IHNEN: That's correct, Your Honor.

THE COURT: Well, I'll let you do that but realizing that observations for men might be different than observations for women. But more importantly, you have made Exhibit 3 a bunch of public records requests. How many pages is in that exhibit?

MR. IHNEN: A hundred and 52, Your Honor.

THE COURT: A hundred and 53. The hard copy doesn't have any page numbers on it and I just spent 30 minutes trying to find the one piece of paper that you've talked to one of the witnesses about. I can envision the Tennessee Supreme Court as they're trying to understand this record being quite frustrated that they've got to spend 30 minutes going through 158 pages to find one page.

Are exhibits -- if you're going to introduce a massive exhibit and call attention to individual pages, there's different ways we can handle that. One would be if you kind of marked the total exhibit with sequential page numbers.

The other way you could do it, I guess, would be to introduce the whole thing and then individual pages

separately just to highlight them for the convenience of everyone trying to review this record. They're going to have to review this in a very short period of time. I don't think we need to have them searching through 158 pages to find one somewhere in there to look at.

So I'm anticipating we'll have -- I'm mentioning this now because we're probably going to have a number of exhibits coming up. Let's be conscious of the fact that we have to have a way for them to be referenced in some kind of logical way.

That being said, I'll overrule the objection and let you show what they do to observe the men.

MR. IHNEN: Thank you.

BY MR. IHNEN:

Q Warden, is there a shower in the Capital Punishment Unit?

A There's showers in each of the cells, yes.

Q Okay. And how is that observed?

A The officer is on the outside of the cell observing them through the bars.

Q Okay. Warden, have you had any conversations with Ms. Thomas or any other TDOC officials about the staffing for Ms. Pike's execution?

A Yes, we've talked about who is going

to staff the observation.

Q Okay. Have you engaged with TDOC about the -- any of Ms. Pike's specific medical conditions?

A I have not.

Q Have you or any members of the IV team received specialized training about any medical conditions?

A I can't answer for them. I have not received anything.

Q Okay. Have you made any assessment about Ms. Pike's difficulty with blood draws?

A No, I have not.

Q Have you been involved in any discussions about contingency plans like placing a central line?

A No, I have not.

Q Have you been involved in any discussion about an inmate's psychological history or mental illness?

A No, sir.

Q Have you been involved in any discussions about Ms. Pike's specific mental illness?

A I have not.

MR. IHNEN: I think that's all I have, Your

Honor.

THE COURT: Cross-examine.

CROSS-EXAMINATION

BY MR. AYERS:

Q Warden Nelson, thanks for being with us. Can you hear me?

A Yes, sir.

Q So as warden, you testified earlier that you are present during executions; is that right?

A Yes, sir.

Q In your role as warden, do you give any consideration to the inmate's experience during the execution process?

A I don't understand the question.

Q I'm sorry, that was a bad question. As warden, do you give any consideration to the inmate's comfort during the execution process?

A Yes, we do.

Q Why do you do that?

A So -- so when it comes to the inmates like showering and using the toilet facilities, we have privacy screens that we put up so they're not uncomfortable. One of the inmate's has medical conditions, so we have hospital beds in place for that. And then just any reasonable accommodations we'll look at

and discuss it with Central Office.

Q And thinking particularly about the procedures in the Capital Punishment Unit during the execution, do you take into account the inmate's dignity?

A We do.

Q How do you do that?

A Just by being professional. By understanding what they're going through. Treating them with dignity and respect during the entire process. Helping them where we can. Facilitating visits for them.

Q As far as you know, has the Department ever done anything during an execution to purposefully increase pain?

A No, sir.

Q And as far as you know, has the Department ever done anything during an execution to purposefully increase psychological distress?

A No, sir.

Q Now, you mention accommodations, do you personally receive accommodations requests from inmates related to executions?

A Mostly from their attorneys we receive them.

Q And has Christa Pike requested any accommodations?

A Yes, there was some religious accommodations that she's requested.

Q And were those granted?

A Yes, numerous ones were granted.

Q Are you aware of when Ms. Pike is going to be transferred to Riverbend?

A No earlier than 24 hours prior to the execution.

Q And will she be under observation at Riverbend while she is housed there?

A Yes, sir.

Q Are you responsible for that observation?

A Yes, sir, I am, as well as picking the individuals who conduct the observation or putting together the schedule for the observation.

Q Will any male staff observe Ms. Pike while she's housed at Riverbend?

A The agency's goal is to put all female staff back there.

Q Now, you testified a minute ago that there are four people at a time working in the Capital Punishment Unit during observation; is that correct?

A Yes, sir, during the 24-hour observation, there's two officers assigned outside the

inmate's cell. One officer inside a control room. And the fourth individual is a supervisor in charge of that detail.

Q And of those four, how many are responsible for the observation that you've described?

A So the two officers are responsible for the documentation and conducting the observation.

THE COURT: I don't think he answered the question. Can you ask it again?

MR. AYERS: Yes.

BY MR. AYERS:

Q The question, Warden Nelson, was of those four, how many are responsible for that observation that's described in the protocol?

A Well, they're all responsible for it. I apologize, I thought you meant who is required to document and be the individuals constantly observing them, but it's a team effort.

Q Okay. And is it your testimony that the Department is assigning females to that role?

A Yes, sir, that's the goal.

Q How many methods of execution can be carried out at Riverbend?

A Two. Lethal injection and electrocution.

Q And why those two?
A Those are the only two approved by Tennessee law.
Q Can any other method of execution be carried out at Riverbend?
A No, sir.
Q Are you aware of hanging as a method of execution?
A I have heard of it, yes.
Q In your opinion as warden, could a hanging be carried out at Riverbend?
A No, sir.
Q Why not?
A We don’t have the equipment to conduct that execution. It’s not approved by Tennessee law and just the logistics, we wouldn’t be able to support that.
Q To your knowledge, does the Department employ anybody who has any expertise in execution by hanging?
A None that I’m aware of.
Q Do you even know where the Department could find such a person?
A I do not. I’m not aware of any states that conduct executions by hanging anymore.

Q Are you familiar with the IV team that takes part in executions at Riverbend?

A Yes, sir.

Q Have you seen the equipment that they use?

A Yes, sir.

Q Do they use needles to place IVs?

A Yes, sir. They have four different size needles that they utilize, 18, 20, 22, and 24 gauge needles.

Q Do you know what a butterfly needle is?

A I do.

Q Does the IV team ever use a butterfly needle as part of the --

A No, sir. I'm sorry. No, sir.

Q Those are all my questions. Thank you, Warden.

REDIRECT EXAMINATION

BY MR. IHNEN:

Q Warden, you testified that there are four officers in the Capital Punishment Unit; is that correct?

A Four -- four staff members, yes, sir.

Q Staff. And two of those staff are responsible for observation; is that correct?

A Yes, sir, the two that are outside of the cell are required to document their findings, their observations.

Q And I just want to clarify your testimony. Is the plan for Ms. Pike that only those two members will be female or that all four of those staff will be female?

A It's my understanding all four of them will be female.

Q Okay. Thank you.

THE COURT: Anything else of this witness?

MR. AYERS: No, Your Honor.

THE COURT: All right. Thank you, sir. We're through with your testimony.

THE WITNESS: Thank you, sir.

THE COURT: Thank you.

(Whereupon, the witness was excused.)

THE COURT: So, Lawyers, what do you want to do about lunch? I don't know --

MR. IHNEN: Yeah, take a break and then Dr. Van Norman after that. Thirty minutes or so?

THE COURT: You said 30 minutes?

MR. IHNEN: Forty-five minutes?

THE COURT: No, 30 is fine with me but I've just never had a lawyer ask for a 30-minute lunch. I brought my lunch. Is everyone -- is 30 minutes enough? I can make it longer.

MR. WICKENHEISER: We might need a bit longer, Your Honor. We're from out of town.

THE COURT: Okay. Yeah, we'll take an hour break.

What's the plan for this afternoon? Let's talk about that.

MS. BALES: Your Honor, we -- Susanne Bales again. One of our witnesses is Maria DeLiberato. The State has objected to her testimony. I would like to call her to put her on the stand and try to establish relevance. If the Court disagrees with that, I would like to make an offer of proof of her testimony.

THE COURT: Well, it depends on what -- your offer of proof depends on what she's testifies to.

MS. BALES: Yes, Your Honor.

THE COURT: If we even get close -- if it's not even close, I will address that. I assume you want her -- what do you want her to testify about?

MS. BALES: Your Honor, she's going to testify to what the Isolation Unit looks like where the inmate's held. She's going to testify to the extraction process.

The process of strapping the inmate's arms down, which relevant to IV placement. And then I would like for her to testify to the previous attempted execution. The IV's team's efforts to place the lines and also the execution team's efforts regarding the central line.

And I understand the Court earlier --

THE COURT: The execution that I said wasn't relevant.

MS. BALES: Yes, I understand. So I would like to make an offer of proof. Make an argument as to why that's relevant and make an offer of proof.

THE COURT: We'll -- I guess, is she available?

MS. BALES: She is, yes.

THE COURT: Okay. I understand if she's going to testify or not, you want to get her on the road. We'll take that up right after lunch.

MS. BALES: Okay. Thank you, Your Honor.

THE COURT: But what else -- I mean, what are you -- that's going to be your anticipated next witness?

MS. BALES: Yes. And after that, we have an expert witness, Dr. Van Norman.

THE COURT: Okay. You think she'll take the rest of the afternoon or do you have any --

MS. BALES: It partly depends on how extensive

the cross-examination is. We do have another witness available after her if we get to that.

THE COURT: Okay. And how late do you lawyers want to work this evening?

MR. AYERS: We would like to get this done as quickly as possible, so we're willing to go late if we need to go late.

THE COURT: Okay. Well, we'll just see where we are at 5:00. We'll work at least until 5:00 or 6:00. We'll see where we are with regard to the witnesses if it's -- if we finish a witness and it's a good stopping place, we'll stop. If not, we'll just keep going. But we won't be leaving at 3:30 or 4:00.

MS. BALES: Very well, Your Honor.

THE COURT: Let's see, it's 12:15, we'll be in recess for an hour. I'll see you back at 1:15.

(Whereupon, a recess was taken.)

THE COURT: I hope everyone had a good lunch. Let's get ready to get back to work.

Call your next witness.

MS. BALES: Your Honor, we call Maria DeLiberato.

MR. AYERS: So the State will object to Ms. DeLiberato being allowed to testify. Before the break it was represented to the Court she is going to

testify about I believe three different things.

The first of which was the conditions inside the observation unit at Riverbend. Your Honor, we just had two witnesses from the Department of Correction. One of whom was the warden of the facility. And so I would argue that by failing to -- eliciting testimony about that from the person best qualified, they have waived that issue.

It's also irrelevant to any issue before the Court what the physical facilities are in the observation unit. The question is whether or not male officers will be observing Ms. Pike. And so the facility layout, a lay witness's perception of that is not relevant to that issue.

Further, they indicated that Ms. DeLiberato is going to testify about when Ms. Pike is strapped to the gurney, and extracted from her cell, those also are discreet parts of the protocol in the process that are not in the Supreme Court's Order. They have nothing to do with peripheral IV access. The teams that accomplish those steps are not the IV team, as stated in the protocol. And so there is no relevance. To get into that would be outside the scope of the Supreme Court's Order.

And then, finally, they indicated that they

would to make an offer of proof about Ms. DeLiberato's testimony about Tony Carruthers.

We would argue that that's procedurally improper. The whole point in an offer of proof is to preserve an issue for appeal. The Supreme Court certainly did not indicate that there was going to be an appeal of any evidentiary issue in this hearing. They're free to make arguments in their proposed findings of fact and conclusions of law, as well as any objections they might want to make after this hearing, but to make an offer of proof would be a waste of time and especially when it's outside the scope of the Court's order. And on a topic the Court has already ruled is irrelevant.

THE COURT: So the three topics that you want to get into are --

MS. BALES: Your Honor, I'd like to let Ms. -- elicit testimony about the isolation cell where Ms. Pike will be held immediately before her execution. I would like to offer testimony about the extraction process and then strapping her down to the gurney. And I'd like to offer testimony about the numerous IV attempts in Mr. Carruthers' attempted execution, as well as the central line issue in that attempted execution. And I'm prepared to argue the relevancy of each of those point by point.

THE COURT: Well, tell me how the layout of the room is relevant.

MS. BALES: Your Honor, it's not necessarily the layout, you know, in terms of diagram. It's what the isolation cell -- the remoteness of it is relevant to the claim two that is in front of the Court. It -- we're talking about a woman that has PTSD and the trauma and we need to establish the appearance of that area where she will be held.

THE COURT: Okay.

MS. BALES: And relevance -- I'm sure the Court --

THE COURT: I'll allow that and that part of the testimony.

MS. BALES: Thank you, Your Honor.

I would like to elicit testimony about the extraction process, which involves four guards approaching Ms. Pike and physically picking her up and placing her on the gurney. And that's relevant also to claim two --

THE COURT: Well, let me interrupt you a second.

If I understood the protocol, this woman could not have seen that process? Unless I misunderstood the protocol.

MS. BALES: I believe she -- the attorney is usually allowed to go with the extraction team. But if she hasn't seen it, then she wouldn't be able to testify about it. It would be limited to her first-hand observation.

THE COURT: So I was led to believe that they came and extracted her and they were all strangers. And now you're telling me her lawyer -- I mean the lawyer of the inmate gets to come with the extraction team?

MS. BALES: Your Honor, the attorney does get to go and -- it may be that the -- a representative from the AG's Office does as well. I'm not sure. But --

THE COURT: I don't have a clue.

MS. BALES: Right.

THE COURT: I'm glad I don't know.

MS. BALES: The attorney does accompany or is -- get to go back to that area where the extraction occurs.

THE COURT: Go back to the area while they're extracting her?

MS. BALES: Yes.

THE COURT: And the attorney is there in the execution chamber?

MS. BALES: Yes. Yes, Your Honor.

THE COURT: And the attorney is there when

they're actually strapping her to the chair?

MS. BALES: Well --

THE COURT: I thought there was a curtain and everyone was escorted from the room and no one saw that?

MS. BALES: The --

THE COURT: You can clarify all that.

MS. BALES: Okay. That --

THE COURT: Is she --

MS. BALES: It's helpful to know what the Court --

THE COURT: Is she listening?

MS. BALES: -- is interested in.

THE COURT: She's here in the courtroom. She can clarify all of this.

MS. BALES: She's going to be remote.

THE COURT: Okay. Well, she can't testify about anything that she didn't observe herself.

MS. BALES: Correct.

THE COURT: So we'll see whether she observed anything when you get her on there. And then the third thing, I've clearly ruled that that's not appropriate and you want to make an offer of proof?

MS. BALES: I do, Your Honor. And I understand the State has argued that this issue is foreclosed by Hines, but the Hines case is actually on

appeal before -- or is seeking cert from United States Supreme Court. It is still an active issue. And, you know, all of these cases end up on appeal. So we do need to make an offer of proof on that issue to preserve the issue.

THE COURT: Well, I -- has she submitted a declaration? I'm trying to think of some way that you could get an offer of proof that doesn't require retracted evidence and I wanted to let you make an offer of proof and I -- we could -- if we make an offer of proof about everything that I rule out in this case, it's --

MS. BALES: I understand.

THE COURT: -- excruciating detail then -- and so some of these people, they're inadmissible stuff we could submit declarations on assuming the State doesn't want to cross-examine the offer of proof. But if they want to cross-examine any offer of proof, we've got to have an oral offer of proof and --

MS. BALES: Your Honor, there -- there is a detailed declaration that Ms. DeLiberato prepared. And we would be happy to submit that for the IV access issue and for the central line placement. I don't believe it's in her declaration -- the -- the extraction process.

THE COURT: Well, we'll --

MS. BALES: And --

THE COURT: -- we'll get to those two. I'm going to let her talk about the layout and what the room looks like and all that stuff. And I'm not sure what she's seen and what she hasn't seen --

MS. BALES: And we'll --

THE COURT: -- regarding --

MS. BALES: -- we'll address that.

THE COURT: But the other -- is the State okay with a declaration being the offer of proof? Now, the one thing about that is it doesn't allow you to cross-examine.

MR. AYERS: Right, Your Honor. I will point out that Ms. DeLiberato did file a declaration in the Hines case as I stated earlier. And as I understand it, she will be talking about most of the similar things she talked about in that declaration. And it's worth noting again that the Tennessee Supreme Court considered that declaration, still denied Hines's motion, and while, you know, that may be on appeal, that is binding precedent on this Court as of today.

So, and again, the issue two is focused on -- in this order -- whether males are going to observe Ms. Pike at Riverbend. The -- her extraction -- which by the way, Ms. DeLiberato would only be testifying about

Carruthers' extraction, which is what she saw. So to the extent she's going to do that, that's going to be irrelevant under this Court's prior ruling.

But the extraction, the layout of the facility, none of that's relevant to whether a man is going to observe Ms. Pike.

THE COURT: Well, don't I have to consider the extraction -- the layout of the -- their proposed facility for the hanging?

MR. AYERS: There's already been testimony on that.

THE COURT: And -- and -- I mean --

MR. AYERS: Again, these are issues that they could have elicited testimony about from two people who work for the Department of Corrections.

THE COURT: I mean they can choose whoever they want to put their evidence on with. They don't have to put it on -- I mean you can't control who they call as their witness, even though they have -- they may all have similar knowledge but -- I have to make that comparison between how this execution is going to look with a hanging.

And so what room is she going to be in during the hanging? And who's going to -- the officers -- are they going to come and get her and tie her up in the

hanging, and I don't know what proof they're going to put on about how this hanging is going to look, but I have to compare their -- how they're going to say this hanging is going to look with how this lethal injection is going to look and so I'm assuming they're going to show -- tell me what the room that she's going to be in prior to the hanging looks like.

So I'm going to make those comparisons so I'm -- I'm going to let them -- I'll let you talk about the physical layout. Let's see what she actually knows. But the other will be considered an offer proof unless you're willing to just let them do -- I think they're willing to do her declaration, but in order for that to be the offer of proof, you have to give up cross-examining her.

MR. AYERS: Right.

THE COURT: It's attempting -- so I'll let you make the call. If you want the offer of proof to be oral, then you get to cross-examine or --

MR. AYERS: Well, we'll have it be verbal.

THE COURT: Verbal?

MR. AYERS: Yes.

THE COURT: Okay. All right. So I'm going to -- let's -- let's get her here and let's see what she knows.

Can you hear, Ms. DeLiberato?

MS. BALES: Can you hear us, Ms. DeLiberato?

MS. DELIBERATO: Yes, I can hear you. Can you hear me?

MS. BALES: Yes. Is -- Your Honor, for clarification, is this --

THE COURT: Thanks for reminding me.

MS. BALES: Okay. I forgot that --

THE COURT: Would you raise your right hand, ma'am?

(Whereupon, the witness was sworn.)

MS. BALES: For clarification, is all of her testimony an offer of proof or -- just to make sure I understand the Court's ruling?

THE COURT: We will -- this is her direct testimony right now and laying a foundation and we'll see --

MS. BALES: Okay.

THE COURT: -- where we're going. I've already identified one topic that -- but then you were going to try to lay a foundation of whether she had personal knowledge of the other.

MS. BALES: Okay.

The witness, MARIA DELIBERATO, was called and, having been duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MS. BALES:

Q Introduce yourself to the Court.

A Yes, my name is Maria DeLiberato and I'm a capital defense lawyer with -- currently with ACLU.

Q And did you represent a Tennessee death row inmate recently?

A Yes. Tony Carruthers.

Q Okay. And what was one of your responsibilities in your representation of him?

A I was designated as his attorney witness for the scheduled execution on May 21st, 2026.

Q Okay. I'd like to just focus on that day. And by the way, the cameras up there. I'm looking at you. I know that feels a little awkward.

I'd like to start and just focus on the day of the attempted execution. And where were you when -- where were you in the prison when you went back for the cell -- back to where the cell extraction occurred?

A So I first started my day with a last legal visit from 7:30 until approximately 9:00, so I was back in the area where Mr. Carruthers was. And then I was escorted back to the front area of the prison. And then myself and an Assistant Attorney General were escorted back by the warden to the cell area for the cell

extraction process.

We had a bit of a false start because the Court hadn't ruled. Do you want me to sort of walk through that process?

Q No. That's -- that's okay. So did you see Mr. -- the cell where Mr. Carruthers was held?

A Yes.

Q And could you describe that cell for us?

A Yes. So there was like three cells along the wall and then a catwalk and then another set of bars and then a hallway and a control room that's looking directly into those cells. When someone is on death watch, there's only a single person in that cell so Mr. Carruthers was in the first cell as you walk right into the room and he was seated on his bunk with his prayer shawl.

Q And did you go into the cell?

A I did not go into the cell. They had myself and the Attorney General stand in the hallway. I was approximately ten to 15 feet away, I would say.

Q Did you, for any of the legal visits there, did you go into the cell?

A No. The legal visits were in like an anti-room, sort of just outside the control room in

that area where they brought us to have a legal visit in that room.

MS. BALES: Okay. So I think that answers the Court's question. She saw -- or my question as well -- she saw the outside of the cell. We would offer that testimony in support of Ms. Pike's claim too.

THE COURT: Is that all you want?

MS. BALES: No. I just --

THE COURT: Okay.

BY MS. BALES:

Q Ms. DeLiberato, let's talk about the extraction process. Can you tell us -- did you see the extraction process?

A Yes, I did.

Q And tell us --

MR. AYERS: I'm going to object to relevance based on what happened with the Carruthers execution and this being part of the testimony that's excluded prior to the Court's prior ruling.

THE COURT: I'm going to sustain that objection. We'll consider the rest of this your offer of proof.

MS. BALES: Okay. And the objection is it's not relevant to claim two, Your Honor?

THE COURT: Yes.

MS. BALES: Okay. And I think I stated earlier we believe it is relevant because it goes to the common PTSD claim and whether there's -- whether that extraction process will be a cause of serious illness and needless -- needless suffering.

THE COURT: So what you're saying is if it caused trauma to Mr. Carruthers it caused trauma -- it's going to cause trauma to Ms. Pike?

MS. BALES: What I was saying is that I think we need to understand how the extraction process is carried out. And we have a witness for how that extraction process is carried out.

THE COURT: Well, don't we also have the protocol that says how it's carried out?

MS. BALES: I -- I don't think it goes into detail about that, Your Honor.

THE COURT: Okay. Well, doesn't that mean that the protocol with Ms. -- with Carruthers may be different? What actually happens with Mr. Carruthers might be different than what happens with Ms. Pike if the protocol doesn't get specific. So you're saying that whatever happened to Mr. Carruthers is going to be duplicated with Ms. Pike?

MS. BALES: Your Honor, we do believe that's the case.

THE COURT: Okay.

MS. BALES: I think at least for the extraction process.

THE COURT: Okay. Well, okay. I understand. Go ahead and make your offer of proof.

MS. BALES: Okay.

BY MS. BALES:

Q Could you describe the extraction process that you observed?

A Yes. And my understanding is because I asked, this was my first witness execution witness in Tennessee. I have observed executions in Florida, which is very different. But this extraction process was informed to me that it was for every single execution.

So I was standing in the hallway with -- in the hallway just immediately outside the cell with the Attorney General. They rolled the gurney in past us from the execution chamber, which was like just kind of directly behind us.

Mr. Carruthers was seated, you know, calmly in his cell. He wasn't combative in any way. As I said, he had his prayer shawl on. He -- the warden stood in front of his cell and told him that the guards would be entering his cell. There were four to five guards sort

of all dressed in black. Looked a bit like a SWAT team. And they all stood of sort of shoulder to shoulder, kind of with their hands on the shoulder in front of them. And sort of in very loud commands told Mr. Carruthers they were entering his cell. They ordered him to kneel on the bunk, place his forehead on the wall, and then they restrained him in the cell.

And, again, this was standard procedure. Mr. Carruthers was not combative in any way.

And then they took him out of the cell into the hallway. They were all sort of around him. He was shackled belly, hands, and feet. They all stood behind him. Again, all these men all dressed in black and they lifted him onto the gurney, which was in the hallway. And then they strapped him down. It took a considerable amount of time securing all of the straps.

Mr. Carruthers' hands were handcuffed and he remained clasped in prayer while they were strapping him to the gurney. That happened in the hallway. And then after that, they rolled him in to the execution chamber, which we followed.

Do you want me to continue as to what happened in the chamber with the continued securing?

Q Yes. Continue.

A So once they got into the execution

chamber, they secured the gurney to the floor. And then they started to put the arms on the gurney. Each side of the arm. The left side and the right side. And then they unhandcuffed Mr. Carruthers' hands and then outstretched his arms along the gurney. And then that was -- once he was all secured in the gurney with arms outstretched is when they began the process.

Q Okay. I would like to turn to the IV attempts that you -- that happened, if we could move on to that.

A So they started --

MR. AYERS: If I may --

THE COURT: One second, we have an objection. Just a second.

MR. AYERS: The Court's invitation for an offer of proof, to our understanding, did not include IV attempts on Mr. Carruthers. It included the layout of the facility and the restraining and the extraction. And that was it.

MS. BALES: Your Honor, I -- I have it in my notes here that I had informed the Court earlier that there would be an offer of proof on the IV attempts, as well as the central line placement. And before the break, the Court found that those areas were not relevant to the Court's determination but that we would come back

for an offer of proof. So this -- the Court's already said there -- I've already informed the Court at least twice about IV attempts and the central line placement.

THE COURT: Well, I'm going to overrule this objection --

MS. BALES: Okay.

THE COURT: -- because this is an offer of proof. But could you elicit from her -- I was led to believe from reading the protocol that the prisoner faced all this alone. The prisoner was extracted alone. The prisoner was strapped to the gurney alone. The prisoner's arms were tied to the left and right side alone. And that all of this stuff was happening while they were alone, and what I'm hearing is is that they -- the prisoner wasn't alone. The prisoner had his attorney -- a representative -- with him the entire process that this was going on.

It seems to me to be contrary to what the protocol says. And so I'm curious. And then I was led to believe under the protocol that once they're strapped down that everyone is -- leaves the room except the IV team that -- and the curtain is pulled and that the actual attempts at IV were done with the curtain pulled. And that the prisoner was alone.

And now I'm hearing the prisoner has -- is not

alone. And so as you make this offer of proof, would you try to clarify some of those things for me?

MS. BALES: Yes, Your Honor.

BY MS. BALES:

Q So you -- Ms. DeLiberato, you went from the area where your client was extracted and then placed on the gurney, and could you start -- could you pick up again with your testimony there?

A Yes. And sort of to clarify and to answer the Court's question. Again, this is -- this is how it occurred in the previous executions to the one I witnessed because I asked the attorneys for the previous executions exactly what I would be witnessing so that I could be prepared.

So it was -- this wasn't like an unusual thing with Mr. Carruthers. This is exactly how it was supposed to happen. But I -- yes -- I witnessed the entire process. So did the Attorney General. And then the plan was for once IV access was established, then myself and the Attorney General were going to be led into the room where the media witnesses and the other witnesses were waiting.

So they were behind the curtain on the other side. They could hear what was happening inside the chamber, but they couldn't see. So we never got to that

point because they were never able to establish IV access. So we stayed in the chamber the entire time until the execution was called off.

I can certainly walk through the exec -- the IV attempts. I've sort of picked up to where we've gotten in the room. If that answers the Court's questions and your questions.

Q And just to clarify, you were in the execution chamber with your client when the IV attempts occurred?

A That's right. I was like five to seven feet away from him.

Q Okay. Could you tell the Court what you observed?

A Yes. So they began trying to insert the IV along his right arm. And it took -- I could tell sort of from the beginning that they were struggling to establish access. They did -- they were able to get a line in after about seven or so minutes of trying into the right arm.

And then they moved onto the other side. And there were -- just to sort of set the stage -- there were three -- I will call them corrections personnel -- I assume that's who they were. They were dressed -- they weren't dressed in medical gear, but they were -- they

were the IV team. There was three of them. It was two women and one man who were attempting IV access.

MR. AYERS: Objection to naming the genders of the execution participants. This is violating the Court's protective order.

THE COURT: Yeah. We're very --

THE WITNESS: Oh, I'm sorry.

THE COURT: That's okay. You know what we're trying to prevent so let's be cognitive of that.

BY MS. BALES:

Q Just --

THE WITNESS: I apologize, Your Honor. I didn't know that that was something I wasn't allowed to say.

BY MS. BALES:

Q Okay. So we're not -- she -- specifically do not identify the gender of anyone in the execution chamber. I don't know that I told you that.

A Okay. I didn't know that. I'm sorry.

Q You can continue.

A Okay. So the three members of the IV team were trying to establish access. After about seven minutes, they got access in his right arm and then they moved on to his left arm and that's when they were

unable to get a vein. That took about -- it was from like 10:32 to 10:44 is when they were trying to put it in his left arm. And I noted about six or seven sticks.

They then -- each time a needle was used they would drop it into the receptacle. And that was a corrections officer who was putting the needles -- a corrections officer was handling -- handing the IV team the needles and then putting them into the receptacle.

And then at one point, one of the IV team members said that they had gotten a flash but it wouldn't flow. And then another team member said that the line was not infiltrating but not flowing.

I noted visible effort on the faces of the IV team member as they tried to gain access and sort of grunting and pushing. And Mr. Carruthers was wincing through most of these needle sticks.

And then they moved to his left hand. And that was at approximately 10:48. They tried to get access into his left hand and then the -- but they said it was not flowing. That the IV was not flowing.

And then at 10:54 -- so we got into the chamber at 10:22 is when they were trying to -- when they started trapping him in. They started IV access at 10:24. And then 30 minutes later they hadn't yet established an IV and that was when the physician entered

the room.

Q Did they ask --

A Do you want me to continue?

Q Yes. But let me ask a question first. Did they ask the physician to come in or?

A I don't -- I don't know. So it was -- they were not speaking out loud, but they were communicating via like hand signals and talking in like very low tones. I could hear them say things about the veins rolling and not access and all that. But they were like communicating via hand signals to like a -- I guess a two-way mirror. So I don't know if one of those hand signals indicated for the physician to come out. I just know that the physician came out.

Q And what happened when the physician came in the chamber?

MR. AYERS: Objection.

THE WITNESS: When the physician came out --

MR. AYERS: Objection. Relevance. This has been clearly ruled on by the Court. And there's no need to offer any proof on it.

MS. BALES: Your Honor, we could stipulate to her declaration concerning the positions, appearance in the chamber, but I do think we are allowed to make an offer of proof to preserve the record for the Tennessee

Supreme Court, as well for the Supreme Court.

THE COURT: How long is this going to be?

MS. BALES: It -- it shouldn't be much longer.

THE COURT: Okay. Go ahead.

MS. BALES: Okay.

BY MS. BALES:

Q Okay. Continue.

A When the physician came into the room -- I'm just going to use "physician" so that I don't run afoul of the Court's order. When the physician came into the room, the physician instructed the IV team to take off Tony's socks to look for veins in his feet.

At 10:56, they took out an I -- and infrared vein finder and dimmed the lights so they could try to use the vein finder.

At 10:57, the physician said they got a flash but it wouldn't run and that was in Tony's feet. I couldn't tell if they actually got the line in his foot or not, but they were sticking him in his feet.

And at that point I asked the warden when he was going to stop this and he said he would not intervene unless instructed. And at that point I asked to use the phone. There is a phone in the chamber and in the media room, but they would not let me use that phone. They have to -- they escorted myself and the Attorney General

out of the chamber. So I was out of view of my client. And then I used a phone that was in the cell area where Tony had been. They had to plug it in so that it would work because it was unplugged. And then I was able to contact co-counsel to tell them what was going on because I had a sense that the next potential part was going to be the central line and I wanted to sort of let them know what was going on. This was obviously something that was going very wrong.

So I couldn't see or hear anything that was happening in the chamber for those few moments that I was on the phone. And then I returned to the chamber at 11:06. And the physician and the IV team were still trying to gain access into Mr. Carruthers' left foot.

Again, Mr. Carruthers was wincing and appeared to be in pain. But the physician then announced that he was going to place a central line, but before he did that, at 11:09, the physician asked members of the IV team if any of them had experience with jugular access. One of the team members said they did.

So then the IV team and the physician undid the chest straps that were -- Tony was strapped to the gurney and turned his head to the side and then started to feel around Tony's neck.

At 11:10 they turned down the lights and

brought out the infrared vein finder. Again, that they had used on his feet to try to assess his neck.

And then at that point, the IV team member who had indicated that that IV team member knew how to do jugular access said that he didn't feel like he could do this.

And then it was determined by the physician that the physician was going to place a drape over -- over Tony's face and body to do the central line.

And at 11:14, the physician asked whether the patient was allergic to lidocaine, referring to Mr. Carruthers as the patient. The prison staff didn't know.

At 11:15, the physician stuck Tony with the needle and administered the lidocaine just below his right clavicle. They said they would wait five minutes for that to take effect.

I went -- I asked again to use the phone. And went back out and I was out of sight for those five minutes talking to counsel explaining what was happening and opposing co-counsel let me know that in a previous deposition the physician had indicated that the physician was not qualified or had hospital privileges to set a central line and they advised me to object.

I went back into the execution chamber and the

physician was standing over Tony. I did object that the physician was not qualified to place the central line. The physician snapped back to me, “Yes, I am to qualified.” The warden said, “Doctor, do your job.”

At 11:20, the physician began poking Tony with a needle in the area where he had administered the lidocaine, which was below his right clavicle. He asked Tony if it hurt. Tony said, yes, he could feel it. The physician responded, “Well, it must just -- it may just be some pressure.”

And then at 11:00 -- I’m sorry -- then after that, the physician proceeded to insert the needle under Tony’s right clavicle. Tony began gutturally groaning and said, “It hurts. It hurts.”

I later learned that this groaning -- this sort of moaning and groaning was audible to the media witnesses that were behind the curtain.

I noted about a half dollar sized amount of blood. The blood was oozing from the puncture wound and then the physician would wipe it away as the blood was coming out.

I observed at least two attempts to insert the needle. So I could see at least two puncture wounds. It is possible that there were more, but I’m certain there were at least two. And the physician tried to thread

something into one of the spots where he had inserted the needle.

He was -- Tony was moaning and groaning in pain this entire time. A sound that I can still hear. It was incredibly vivid and very clearly painful.

I -- at 11:22, the physician said he -- they would not be able to set a central line. And then the physician started to try to get IV access into Tony's right shoulder, which was again the same arm where the first IV access was.

At 11:28, the physician appeared to set a line in Tony's shoulder. I could see blood back filling in the line, so I don't know if it was flowing. Like it was very clearly to see blood in the line.

At 11:30, someone announced that they had flow.

At this point at 11:30, Tony had a line sticking out of his right arm and right shoulder and there was visible blood back filling the shoulder line.

At approximately 11:34, the warden left the room and then came back.

And at 11:40, one of the phones on the wall of the execution chamber rang and the warden answered. I could only, of course, hear the warden's end of the conversation.

But when he hung up he said we were not moving forward with the execution. And he said now and I said does that mean -- I didn't know if that meant like right now or today, and he just said not now. And instructed the IV team to remove the IV lines and take Tony back to his cell.

As they did that, I could see blood filling the lines. Tony was clearly in pain and I would say over the course of the process, he was stuck over a dozen times.

I asked Tony to be evaluated by a medical staff. And then they took him back to his cell and they took me out of the execution chamber back to the front building and they said I would be able to see him once he was taken back to his -- to like the death watch area. Not the same death watch area. He was taken to like -- back to the unit, but not the -- still in isolation.

And I can talk about what happened when I went back there. But I left for a period of time to the front.

Q Okay. Let's stop there.

MS. BALES: Your Honor, that's the offer of proof that we have.

THE COURT: Do you want to cross-examine?

MR. AYERS: Yes.

CROSS-EXAMINATION

BY MR. AYERS:

Q Good afternoon, Ms. DeLiberato. I'm Will Ayers here for the State. I have just a few questions for you.

A Yes.

Q Have you ever set an IV line?

A I have not.

Q Do you have any medical training?

A I do not.

Q I noticed your eyes moving from side to side several times during your testimony. Were you reading from anything?

A I have my declaration in front of me so that I could make sure that I was testifying accurately.

Q But did you disclose that you were reviewing your declaration while you were testifying?

A Nobody asked me but, yes, I was looking at my declaration.

Q Were you looking at anything else?

A No.

Q What other documents do you have in front of you right now?

A That's it.

Q Have you communicated with anyone while you were testifying today?

A No.

Q Those are all my questions.

MS. BALES: Just quick redirect.

REDIRECT EXAMINATION

BY MS. BALES:

Q And, of course, you -- everything you testified to, you took an oath to tell the truth today, didn't you?

A Yes, I did.

Q And did you tell the truth?

A Yes, I did.

MS. BALES: No further questions, Your Honor.

THE COURT: So are you through with her?

MS. BALES: Yes.

THE COURT: Okay. You're free to go, ma'am.

THE WITNESS: Thank you.

(Whereupon, the witness was excused.)

THE COURT: Who is going to be your next witness?

MS. BALES: Your Honor, our next witness will be the anesthesiologist Dr. Van Norman, and I think if we could have just a five or ten-minute break --

THE COURT: Sure.

MS. BALES: -- to get our documents and get her squared away.

THE COURT: Sure. Ten-minute recess.

(Whereupon, a recess was taken.)

THE COURT: Please be seated. All right. Call your next witness.

MS. BALES: Your Honor, we call Dr. Van Norman.

THE COURT: Doctor, will you please raise your right hand?

(Whereupon, the witness was sworn.)

The witness, GAIL VAN NORMAN, was called and, having been duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MS. BALES:

Q Introduce yourself to the Court.

A I'm having a little trouble hearing because there's a breakup outside maybe. Can you hear me okay?

Q We can -- I can hear you very well. Is this --

A Okay.

Q -- I moved over a little bit. Can you hear me?

A That's better. Thank you.

My name is Gail Van Norman. I'm professor Emeritus of anesthesiology at the University of Washington, Department of Anesthesiology and Pain Medicine.

Q Okay.

MS. BALES: Your Honor, may I approach?

THE COURT: Sure.

BY MS. BALES:

Q Dr. Van Norman, we've placed a document on your -- for you to review. Are you able to see it?

A I am. Uh-huh.

Q And can you identify that?

A Yes. This is my curriculum vitae.

Q And do you want to take a moment and make sure it accurately reflects your educational and professional backgrounds?

A You would have to scroll through all the pages for me I think but, yeah, it -- I mean this represents the first page of my curriculum vitae. I recognize it.

Q Okay.

MS. BALES: Your Honor, we move her CV into evidence.

THE COURT: Any objection?

MR. AYERS: No, objection.

THE COURT: All right. We'll mark this Exhibit 5.

(Exhibit No. 5 - entered into evidence)

BY MS. BALES:

Q Dr. Van Norman, starting with medical school, could you give us your academic or educational background?

A Yes. I attended medical school at the University of Washington in Seattle and graduated with an honors M.D. in -- after an undergraduate degree in microbiology.

After medical school, I did internship and internal medicine residency at Virginia Mason Hospital in Seattle, Washington. And then practiced for several years as an internist in the community, before returning in 1986 to the University of Washington to do anesthesiology residency.

I completed residency in anesthesiology at the University of Washington followed by a fellowship in cardiothoracic transplant anesthesiology at the University of Washington.

And then went out into private practice for a while, returning to be on faculty at the University of

Washington in 1994. I actually remained on what's called clinical associate faculty throughout that time, so I periodically came back to the U to teach residents, but I returned to be on full-time staff.

In the interim, I trained in the Department of Bioethics as a bioethicist, and I also became certified in perioperative transesophageal echocardiography.

I also had board certification -- achieved board certification in both of my specialties in Virginia Mason -- or I'm sorry, in internal medicine in 1984 and in anesthesiology I'm -- my memory is 1990, but I think you would have to flip the page to remind me what the year is. It's getting to be a while ago anyway.

Q And how many years did you work as an anesthesiologist?

A Over 40 years.

Q Was that mainly in the operating room?

A Yes. Uh-huh.

Q Okay. As an anesthesiologist, how many times did you place a peripheral IV?

A Well, we don't keep track, but the average anesthesiologist does around 30 to 35,000 cases in a career. And in my career, I did the vast majority of my IVs, so it's tens of thousands. It's a large

number.

Q And how many times have you placed a central line?

MR. AYERS: Objection.

THE WITNESS: Well, again --

MR. AYERS: The Court's ruled on this issue.

THE WITNESS: I'm sorry?

MR. AYERS: Objection, based on the Court's prior ruling. This issue is irrelevant.

MS. BALES: Your Honor, she does talk about the skills necessary to place a central line. And she -- we will offer proof if the Court allows on the problems with the central -- the problems with the central -- the IV placement and the central line placement that happened in Mr. Carruthers' execution. But I can -- I can offer her qualifications.

THE COURT: Why don't we do this. Why -- why don't we solicit from her her testimony that you know is admissible --

MS. BALES: Okay.

THE COURT: And then when we get to the stuff about other people's executions that we already know the Court has a little problem with, then we can talk about those. But it would be much cleaner -- I'm sure -- assume -- qualify her as an expert in whatever she's

going to be qualified as an expert and let's get whatever is admissible for sure, and then with anything we're debating about, then we can debate about that after we see what you've got.

MS. BALES: Okay. Understood, Your Honor. Her qualifications and experience with central line is to respond to the objection is relevant because she's going to talk about the alternative --

THE COURT: You can go ahead and get into her qualifications.

BY MS. BALES:

Q How many times have you placed a central line?

A Again, I don't have a log of how many I've placed, but based on the number of heart cases I've done as a cardiac anesthesiologist, and average OR cases it's well over 4,000.

Q Okay. In addition to being in the operating room, what other paths did you take on as an anesthesiologist?

A Well, I mean a lot of them, but I think the ones that are relevant to the qualifications you're talking about here is that I was -- for about ten years or so in charge of the program that educated and guaranteed the continuing qualifications of all of our

providers to place central lines as a part of their practice.

So I instructed over a 160 providers in our department. Attending anesthesiologists, residents, and CRAs. And also had responsibility for re-evaluating their skills every two years and either certifying them as competent or referring them back for further training, or for their clinical experience before we would let them place central lines at the University of Washington Medical Center.

Q Thank you. Can you explain what an anesthesiology pre-operative assessment is?

A Well, there are a couple of phases to the assessment. The one that patients typically think of is they meet their anesthesiologist moments before they are going to the operating room and the anesthesiologist comes and listens to their heart and their lungs and talks about the anesthetic. And that's the day of surgery, pre-opt assessment.

But at most large centers, and certainly at the University of Washington, we have a perioperative anesthesiology clinic where we see patients several days to even several weeks ahead of surgery. And our task there is to evaluate their medical status to make sure that they are prepared and ready to go through surgery.

That there aren't some conditions that we need to correct before they go through surgery. That there aren't some questions that we need to have answered, both from them and through their doctors before they go through surgery. And to make sure that we're ready for them to smoothly proceed to anesthesia and surgery.

Q Okay. Very well. Have you been qualified to testify as an expert in anesthesiology before?

A Yes. Many -- well, yes, many times.

Q And have you published refereed articles on anesthesiology?

A On anesthesiology?

Q Subjects related to anesthesiology?

A Yes. I have a 168 publications, most of which are in referee journals over the course of my career.

Q And have you been qualified as an expert in lethal injection matters?

A Yes. I have testified in court on lethal injection matters in the past.

MS. BALES: Your Honor, I move that she be admitted to testify on anesthesiology and lethal injection matters?

THE COURT: Do you want to voir dire?

MR. AYERS: Yes, I would. I'm also not clear on what she meant by an expert in lethal injection matters?

THE COURT: Well, neither was the Court and that's why I was going to let you voir dire.

MS. BALES: Let me -- let me clarify that.

BY MS. BALES:

Q Have you been admitted to testify in -- at a lethal injection hearing? Evidentiary hearing?

A I'm sorry, you broke up there. I apologize. I didn't quite catch that.

Q Okay. Have you been admitted or permitted to offer testimony on matters related to lethal injection?

A Yes, I have.

Q Okay.

THE COURT: Well, you still didn't answer my question, but I'll let you ask.

VOIR DIRE EXAMINATION

BY MR. AYERS:

Q Good afternoon, Dr. Van Norman. My name is Will Ayers. I'm an attorney for the State of Tennessee. We appreciate you being here today. Just a few questions for you about your background.

So when were -- are you still a practicing

clinician?

A I retired from clinical practice just a couple of months ago. So up until a couple of months ago, yes.

Q Okay. Congratulations on your retirement. I hope you're enjoying it.

A Thank you. It's been -- it's been a trip.

Q So do you recall roughly when the last time was that you would have set an IV line in a patient?

A I'm sorry, set an IV line?

Q Yes. When the last time was that you set an IV line in a patient? It doesn't have to be down to the day, just roughly?

A It would have been within a month or two of my retirement, so in the last several months.

Q And you're not a hematologist, right?

A No.

Q You've never managed a patient's condition related to a blood disorder?

A As -- both as a perioperative physician and an anesthesiologist, I've had to manage patients with hematologic disorders with regard to how

that disorder affected their anesthesia care. But I'm not a diagnosing physician for those disorders.

Q Thank you.

A Uh-huh.

Q You would agree that an execution is not a medical procedure, would you?

A I would agree with that.

Q Have you ever worked in corrections?

A I have not.

Q So do you have any specialized experience in carrying out death sentences?

A As a physician I have not participated in carrying out death sentences, no.

Q Do you have any specialized experience in planning executions?

A As a physician, I'm not ethically allowed to participate in planning executions.

Q Have you ever been consulted as an expert to help a state draft or revise an execution protocol?

A Because that would violate ethical tenants of the medical profession, I cannot --

MS. BALES: Your Honor, I object.

A -- participate in forming recipes for lethal injection or other methods of execution.

THE COURT: Pause just a moment. We've had an objection.

MS. BALES: Okay. I think we're getting away from her qualifications to testify on the medical and scientific issues that are in front of the Court today.

THE COURT: Well, you kind of have -- I think he has a right to find out why you were introducing her as an expert in lethal injection.

MS. BALES: Okay. Very well.

MR. AYERS: Yes. Thank you, Your Honor.

BY MR. AYERS:

Q So, just to clarify for the record, your answer to the last question was, no?

A I'm just remembering the last question. I'm sorry, I got lost. But -- that's --

Q The question was have you ever been consulted as an expert to help a state draft or revise execution protocol?

A Thank you. No.

Q Thank you. And if the Department of Correction were to ask you to do that, would you consider it?

A I would not consider participating in drafting a policy or procedure for any kind of execution that would violate medical ethics.

Q Have you ever personally witnessed an execution?

A I have.

Q How many?

A I've witnessed one.

Q Are you personally familiar with the qualifications of any members of Tennessee's execution team?

A I have read the Tennessee protocol and what they state are the qualifications necessary; is that what you mean?

Q Other than reading the protocol, do you have any personal knowledge of the qualifications that any member that Tennessee execution team holds?

A I am familiar with what the physician involved in Tennessee executions has testified to in court as his qualifications --

Q I'm going to stop you right there because the Court's -- the Court's ruled on that issue and that's -- that's not coming in.

A Apologies. I -- you just asked me and I --

Q Sure.

A -- yes. Uh-huh.

MR. AYERS: So those are all my questions and

I would like to move to limit Dr. Van Norman's testimony if the Court is ready to entertain such a motion.

THE COURT: Let me ask her a couple of questions. Or maybe I'll let you attempt to reclarify. Are you offering her as an expert in anything other than anesthesiology?

MS. BALES: Your Honor, she's going to testify about vein access issues and she has -- is going to testify about a literature review of executions, and the fact that lethal injection executions are -- have a lot of problems with a vein access.

And in the State's brief, they asserted that she's not qualified to testify about thrombocytosis. But we --

THE COURT: Are you planning on offering -- trying to get her to testify about that?

MS. BALES: Well, she's going to testify --

THE COURT: I'm trying -- I'm trying to determine what you are offering her as an expert in and whether she's going to try to testify outside that -- that field.

MS. BALES: Your Honor, as far as the thrombocytosis, she has observed that that's a diagnosis in Ms. Pike's medical records and she opines that people with clotting disorders have -- are at a higher risk for

vein access because if they have to give blood draws frequently, that can damage their veins. And they're at a higher risk of clotting disorders. And that is something that she's managed in her -- in her practice. So I feel that she is qualified to testify to that.

THE COURT: Okay. So that would be in the field of anesthesiology, is that --

MS. BALES: Yes.

THE COURT: -- okay. So what -- what -- when you said --

MS. BALES: No --

THE COURT: -- when you tried to qualify her, you said you were going to qualify her as an expert in lethal injections or something like that.

MS. BALES: Your Honor, I misspoke. I -- what I should have said is that she has been admitted to offer expert testimony in lethal injection proceedings and that testimony would be about her literature review of exit lethal injection, executions, that they're a high risk or they're difficult. The venous access for a lethal injection is a challenging undertaking.

And she offers testimony on that based on her review of a large number of -- her literature review of a large number of execution -- lethal injection executions.

THE COURT: So, what -- I mean -- what does

the State have to say about her testifying based on her literature review? With the understanding that I understand your expert is going to testify based upon their literature review?

MR. AYERS: So the State opposes Dr. Van Norman testifying as a so called expert on execution procedures, which is what she's holding herself out as. She -- her report discusses what she terms botched executions based on literature review, but she had just testified that she has never participated in planning or assisting with an execution.

She said that that's against her code of ethics. She said that she has never consulted on an execution protocol or anything like that. And so there is nothing in her training as an anesthesiologist that qualifies her to opine on whether or not a given execution was botched or to opine on whether there is a specific risk of complications at an execution setting.

As she just admitted, an execution is not a medical procedure. They are not the same thing. And so having no expertise in the field of corrections and prison administration, she is not qualified to opine about execution procedures.

The State would also --

THE COURT: Well, let me interrupt you just --

hold your thought just a moment. Are you going to ask her to testify about execution procedures?

MS. BALES: Your Honor, we're going to -- I'm going to ask her to testify about venous access and central line placement. And factors that make venous access difficult and factors that are specific to Ms. Pike that make venous access difficult.

We're going to -- I'm going to ask her --

THE COURT: Well, I -- see I have no problem with any of that --

MS. BALES: Okay.

THE COURT: -- but I'm waiting for the -- and we're going to ask -- what else?

MS. BALES: And she's going to -- she's going to testify about what happens if there's a blowout. What -- what can happen if there's a blowout of a chemical like pentobarbital, that it can cause significant burning. And she is going to testify about the difficult -- just the difficulties of --

THE COURT: Wait a second.

MS. BALES: Yeah.

THE COURT: My understanding is that she's going to testify with any given individual -- execution or non-execution -- there are difficulties in the peripheral IV access?

MS. BALES: That's correct, Your Honor. So we feel she's qualified --

THE COURT: So, I mean, isn't that what you want to establish?

MS. BALES: Yes. Yes, it is, Your Honor. And then --

THE COURT: So why does she need a literature review to tell her what she already knows?

MS. BALES: So she's going to talk about Ms. Pike's unique characteristics and venous access. She's also going to talk about the fact that there have been vein -- blown veins in other executions that have caused significant burning, and that that is the type of risk that --

THE COURT: Wait a second. Wouldn't there be blown veins in any kind of -- I mean --

MS. BALES: Well, a situation where the needle either tears or pokes through the vein and the pentobarbital doesn't travel to the heart. Instead, it settles into the tissue, which causes serious injury and also can cause electrocution -- or excuse me -- the execution to possibly not succeed, or to last a very long time.

And she has reviewed a couple of cases where that happened and that's the type of risk that Ms. Pike

faces if there's a blowout in her veins.

MR. AYERS: Your Honor, there's a couple of problems with that. The first being that those issues -- the scope of what happens when pentobarbital enters the body is after peripheral IV access has already been achieved. So we're already off the reservation in terms of what the Supreme Court's order is talking about.

It is focused on peripheral IV access. We do not intend to contest Dr. Van Norman's qualifications to testify about achieving peripheral IV access or anesthesiology. I think we're on the same page there.

But when we start talking about things that happen after IV's are inserted, such as extravasation, which is in her report, that's when a chemical leaks into tissue surrounding a vein, or infiltration, which is what happens if a -- if an IV that's inserted somehow gets misplaced or jostled around and then pokes through the vein as you just heard about. Those are things that happen after IV access has been achieved, so those by definition are not before the Court. They are outside the scope of the order.

I'll also point out that back to the issue of correctional experience, her report goes on for many, many pages about her views of complications in executions. Her views on what constitutes a botched

execution. What the error rates are for lethal injection. Those are correctional matters. And it's not something that -- at least so far -- she's been demonstrated to have any professional expertise in as an anesthesiologist.

MS. BALES: Your Honor, the issues that are before the Court regarding vein access is whether peripheral vein access or the attempts to achieve that, are going to cause serious illness or needless pain. And the fact that you can get a needle in somebody's body doesn't mean that you have successful peripheral IV access. So the issue of a blown-out vein where the pentobarbital flows into the person's body is encompassed within this peripheral IV access issue. So speaking to -- to Tennessee Supreme Court's -- to that part of the State's argument.

And as far as reviewing the other executions and talking about the percentages of rates, the Court is going to be asked to decide is there a -- is it sure or very likely that Ms. Pike will suffer needless pain and we think the fact that over 50 percent of execution -- lethal injection executions -- have venous access problems is relevant to the sure or very likely question that the Court wanted to answer.

THE COURT: All right. Well, once again, I

find myself agreeing with both sides a little bit. I think that what happens after IV access is obtained is not relevant to questions one or three, but I have already mentioned that what happens after IV access has some relevance with regard to question number four.

MS. BALES: Okay.

THE COURT: So I'm going to give you a little leeway here, but I'm not -- number one, I'm going to allow her to testify as an anesthesiologist. She's not an expert in lethal injection or executions or anything else. She's done a book report. You know when I was in -- when I was a child when I had to do a book report, I went to what we called in those days -- you all are not old enough to remember -- but it was an encyclopedia. And I looked up what was in the encyclopedia and I did my report. Well, was I an expert? And now they go on AI or Google something and do a literature search and report. Does that mean she's an expert?

So I'm going to allow some of this, but we're not getting into -- she ought to be able from her expertise to testify about the pitfalls of what happens without talking about 55 other executions that she's done a book report on.

MS. BALES: Okay. We'll limit it to the risk of a blow out and --

THE COURT: Well, I'm not limiting you. I'm -- whatever is in her field of expertise, but let's try it like -- let's go ahead. I'm going to allow her to testify, but anything she says about from a literature review, I have to assess what weight. How do you define a botched execution? How does the literature that she reviewed define a botched?

I mean we can find statistics that support both sides of this case, I have no doubt. I will have to look at the methodology behind those. If we're talking about somebody that did a book report. With other no other expertise in executions, it's a review of the literature. So we'll see -- we'll let -- go ahead.

MS. BALES: Okay.

THE COURT: She can -- let's start with her testimony. I'm sure she's got a lot to say about the pitfalls of what can go wrong with placing peripheral IVs. And just --

MS. BALES: Okay.

THE COURT: -- crank her up and I'm sure he'll pop up if he has a problem.

DIRECT EXAMINATION

BY MS. BALES:

Q Dr. Van Norman, can you tell us what peripheral IV access is?

A Well, peripheral IV access as opposed to central IV access is access in basically the veins of the limbs. The peripheral veins that are not in the pelvis, belly, or heart, or chest. So this -- or in the neck in the jugular vein.

So we're really talking about veins that are in the arms and legs. And sometimes some superficial veins of the skin.

Q And what factors can make gaining peripheral IV access difficult?

A Well, there are both general factors that would make it difficult in just about everybody. And then there are specific factors for specific persons, specific patients that need to be considered. So the peripheral -- the general risks are greatly increased of difficult IV -- peripheral IV access in people who are obese, when the veins are less than three millimeters in diameter, when the veins cannot be felt, or when the veins cannot be seen. The veins that you're trying to access cannot be seen.

All of those factors increase the risk that you will have a difficult IV access or an IV access failure by between four and ten-fold.

Q Okay.

MS. BALES: Your Honor, may I approach?

THE COURT: Sure.

BY MS. BALES:

Q Dr. Van Norman, can you see the document that is on -- is the document available for you?

A Well, I can't see it yet.

Q Okay. Okay. Give us just a moment. Okay. Can you see it now?

A Now I can see it. Thank you.

Q Okay. Do you -- have you had a chance to review some of Ms. Pike's medical records?

A I have, yes.

Q And do you recognize these pages from her records if our paralegal can sort of flip through those?

A Yes, this is --

MR. AYERS: Can I interject just quickly? And this is for recordkeeping purposes. We produced medical records that had Bates stamps. I don't Bates stamps on this, so can you tell us where these came from?

MS. BALES: The -- we were not able to decipher how the records that you produced were Bates stamped. These are Ms. Pike's records that we requested from the prison and I'm sure that opposing counsel has seen those. But we can take a moment if we need to?

MR. AYERS: That's okay. I was just wandering

where they came from.

MS. BALES: Okay. They're -- they're from -- they're records from the prison. Medical records.

THE COURT: Well, we've got a manageable number of pages. Do you want to mark these pages as Exhibit 6?

MS. BALES: Thank you, Your Honor. Excuse me?

MR. AYERS: In your exhibit list, is that the selected medical records?

MS. BALES: Yes. That's -- that's --

MR. AYERS: Okay.

MS. BALES: -- part of it.

THE COURT: Well, we're going to introduce this separately as Exhibit 6?

MS. BALES: Yes, Your Honor.

(Exhibit No. 6 - entered into evidence)

BY MS. BALES:

Q Dr. Van Norman, have you had a chance to look through the records there?

A I'm sorry. That broke up. What --

Q Have you had a chance to review the records that are on the screen?

A Yes. Uh-huh.

Q And what are those records?

A Well, these appear to be the records

that -- from Christa Pike on some blood draws that she's had, so phlebotomy for some regular blood tests that she undergoes. And this is one of -- I should say a number of these kinds of sheets that appear in her medical records.

Q And what do you notice about the gauge that's used for her blood draws?

A Well, -- (technical difficulty) -- they've used a kind of needle that's called a 23-gauge butterfly. And a 23-gauge is an extremely small needle. It's not the size of needle that we would normally use to administer anesthesia, except in babies or in very small children. And --

Q And --

A -- the butterfly is -- because the needle's so small, the butterfly -- it's called the butterfly because there's little wings on the sides of the needle that allow us to stabilize it on the skin.

Q And what do you notice about where the blood is -- where the vein is entered on her body?

A I'm sorry, it's still breaking up. Can you repeat that?

Q What -- what do you notice about where they had to stick her to get the blood?

A In this particular case, they put

the 23-gauge butterfly into a vein of her left hand.

Q And why would a phlebotomist use someone's hand?

MR. AYERS: Objection.

THE WITNESS: Usually --

MR. AYERS: -- out of the scope of her expertise.

THE COURT: No, I'll overrule.

THE WITNESS: I'm sorry?

BY MS. BALES:

Q Why would you try to do a blood draw in someone's hand?

A In general because I can't see a vein or feel a vein in the arm. Hand veins are particularly fragile and they're also particularly painful to draw blood from. But they also are a little easier to see sometimes. So.

MS. BALES: Your Honor, counsel let me know that we disclosed to the State selected medical records that has all of the medical record documents that I'm going to go through. If -- would the Court prefer to number these separately? We did disclose them to counsel, but I think as one exhibit instead of three.

THE COURT: I appreciate you disclosing them, but are stamped in any way? How many total pages in your

medical records?

MS. BALES: I -- it's going to be less than 20. Less than 15 probably if I'm -- it's not a huge amount. It's --

THE COURT: If it's that small, you can do it either way you want to do it.

MS. BALES: Okay. May I approach, Your Honor?

THE COURT: Sure. Since you're taking the time to bring this to me, we're going to mark this one document Exhibit 7.

MS. BALES: Got it. Thank you, Your Honor.

(Exhibit No. 7 - entered into evidence)

BY MS. BALES:

Q And, Dr. Van Norman, have you review -- Dr. Van Norman, have you reviewed this page in your records?

A I recognize it. It's a bit small for me to see if it's possible to enlarge. Otherwise, I do recognize the page. So. Perfect. I can see it now. Thank you.

Q And what does this tell us about Ms. Pike? As far as vein access risk factors?

A Well, this is a page from Christa's medical records that show her medications, but up in the left-hand corner -- upper left-hand corner -- you see her

vital signs and her -- a description of her and it's -- it points out that her BMI is 30.76, so she is an obese patient. And obesity is one of the main risk factors for difficult IV starts.

Q Okay. Thank you, Dr. Van Norman.

MS. BALES: Your Honor, may I approach?

THE COURT: Yes.

BY MS. BALES:

Q Dr. --

MS. BALES: Your Honor, I see that I have failed to move the document that had her BMI on it into evidence, I move that into evidence. And I also failed to move the document that tracks the blood draws into evidence. I move that one into evidence as well.

THE COURT: I'm going to mark these as they present them. If the State has any objections, just speak up. But -- so we're marking those ID records is Exhibit 6. The one that shows the BMI is Exhibit 7. And what is this one going to show?

BY MS. BALES:

Q Well, can -- Dr. Van Norman, can you see it?

A Yes, I can see this exhibit fine.

Q Okay. And did -- what does this record show?

A This is also from the same records that I reviewed for Christa Pike. And it contains a notation about a condition she has called essential thrombocytosis, which is a condition we have to manage as anesthesiologists in the perioperative period. Because it has -- it's associated with increased clotting and paradoxically with increased bleeding.

Q Okay.

THE COURT: We're going to mark that Exhibit 8.

MS. BALES: Okay. Thank you, Your Honor.

(Exhibit No. 8 - entered into evidence)

BY MS. BALES:

Q So the diagnosis of essential thrombocytosis, you mentioned there is an increased risk of clotting? Does it -- are there any issues associated with blood draws that this condition calls for treating?

A Yes. With both blood draws and IV starts, and both are relevant to anesthesia care, these patients all have increased clotting of the blood because they have an elevation of an element of blood called platelets to out -- a very a high degree and it causes both small and big blood clots to form, so we are managing their clotting in the setting of surgery.

In addition, when you injure blood vessels,

platelets activate and these people will have increased clotting and potentially internal scaring of the veins.

All of them have a form of what's called microvascular disease because of the scarring and difficulty with platelets in the veins they have small -- often smaller internal diameters. They have more bleeding if they have a broken vein and they have more chance for blood -- for the vein to clot off and the IV to clot off if they have an IV start.

So they are more difficult to access because of smaller scarred veins. Have a higher propensity for clotting the IVs off when they have them. And present a problem with oozing and bleeding around the veins. If there is a break in the vein it can make IV starts more difficult.

Q Okay. So based on the review of Ms. Pike's medical records, have you formed an opinion as to whether she is at high risk for gaining -- for failing to gain peripheral vein access?

A Yes, I have.

Q And how certain are you of that opinion?

A She has a significantly elevated risk of problems with IV access as evidenced by the fact that she has essential thrombocytosis and its problems,

plus she's obese, plus they're already using a tiny child's like -- child's needle to try to draw her blood. So her risk is quite elevated and I -- my opinion is to a reasonable degree of medical certainty on that. These patients in the operating room could be very difficult to have IVs in.

Q Okay. So we have talked about the risk factors that are present in her medical records and that's just for gaining access. How is a blood draw different from setting an IV?

A Mainly, phlebotomy and starting an IV are two different procedures. When we're drawing blood, all we have to do is get the blood drawing needle into a vein. It can be quite small. We're not trying to -- we're not trying to infuse drugs or give fluids through it so we can choose a very small needle.

And we only have to get that needle a fraction of an inch, really just a millimeter or so into the vein. Because once the little hole in the needle is in the vein, we can withdraw blood.

We don't have to thread that needle into the vein and risk rupturing the vein. The vein can be quite -- can be pretty small and give up its blood because we're not trying to put an object in it.

IV starts involve not only threading a needle,

which has a catheter over it, a sheath over it, we have to thread both the needle and that sheath into the vein. You have to go quite a ways into the vein. And it's a bigger diameter with the -- I'm sorry -- the needle and the catheter are a bigger diameter even for the gauge of the -- of -- that you're putting in because you have this little IV sheath over it.

And unless you get that needle -- the needle positioned well into the vein, you won't be able to thread the catheter off of it. And a common problem in IV starts is that people don't get these threaded far enough in.

And the further you have to thread those into the vein -- the needle and the catheter -- the more likely it becomes that you can rupture the vein or go through the posterior, the backside of the vein wall and cause the IV not to work. And more likely you'll -- you'll have the vein blow up and not be able to put an IV catheter in it.

Q What size needle is usually used to place an IV in an adult?

A In -- in the case of anesthesia, we like to get something called an 18-gauge IV.

Gauge -- as the gauge number gets smaller, the IV gets larger. So larger numbers mean tinier IV's. We

want to be able to give fluid and we want most importantly to be able to push drugs through that IV. And we need a larger -- a larger gauge.

An 18 is an average. It's very common, however, in obese patients to use a 20-gauge IV, which is smaller than an 18-gauge, but is still a very much larger than a 23-gauge needle.

Q What happens if the needle is too big?

A Well, it can do a number of things. It can -- if the vein is really -- it could push the vein away. You can injure the vein, rupture the vein, and more likely, you will tear the vein as you try to put the catheter in. Or as you try to put the larger needle in.

Q And if the vein is damaged during an IV, what would happen?

A Well, during the IV placement what happens is you get bleeding and in the case of someone with essential thrombocytosis you're going to get potentially more bleeding than usual. But you will get bleeding around the vein and that compresses the vein and makes it even smaller and more difficult to get into. Or displaces the vein. So you get a big bruise there that's pushing the vein off to the side and it can be difficult to feel, difficult to see, and difficult to get an IV in.

The more times you poke a vein unsuccessfully, the less likely it becomes that you're going to be able to get that IV in.

Q And if you use too large of a needle to gain IV access, what can happen to the chemical or the -- that is going through the IV?

A Well, both -- if you're putting fluid through the IV -- whether you're putting fluid or drugs, if you damage the vein putting them in, you have a much higher likelihood that that drug or that fluid is going to end up in the tissues around the vein partially or totally can -- it can be just partial or it could be total. And there it will have -- it may have detrimental effects on the tissues around the vein and or if you're trying to elicit an effect from the drug, you're going to be giving less of it into the bloodstream where it will have its effect. So if you get a large infiltration, the drugs have diminished effects. And that's been an effect that's been an effect that's been seen in executions.

Q Okay. What happens if you use a needle that's too small?

A If you use a needle that's too small, it -- two things can happen. One is it's just really hard to get any kind of volume into the vein then. The, for example, the Tennessee protocol calls for the

use of the 50 cc syringe, they're going to be pushing 50 cc's, which is a large amount of fluid, into the vein.

Through a small catheter, it will take quite a while to inject that. So, for example, pressing just about as hard as you can with a 50 cc syringe through a 22-gauge needle, which is larger than a 23, you can only get that 50 cc's in over about a minute. You can't give it much faster than that. And I -- in my report you can look at some flow charts that show that.

So the more volume you're putting through the IV, the longer it takes. That means that if you're again administering a drug, the drug will not get to as high a peak level because you're administering it over a longer period of time. And in the case of, for example, pentobarbital, it's being cleared from the blood very quickly and so you never get up to the level that you would get with a larger IV. And you're going to see lesser clinical effects. And that's also been seen in executions. That's one problem.

Another problem is that the pressure that you have to use to push that drug through the IV is higher the smaller the IV is. And you -- and what comes out the end is the pressure that you're putting through the -- through the IV. You can think of it as if you were washing your car, and you're just sort of rinsing off

some of the dirt on the car and your hose is flowing at a particular rate, and it washes things off, but you run across a place where you need to clean the car a little bit more. Maybe some of the dirt hasn't come off. What do we all do? We put our thumb over the end of the hose to make that a smaller opening. And what happens? The pressure at that opening goes sky high. It goes way up.

Well, when that jet of pressure -- the same thing happens with an IV. When you're pushing the syringe through a tiny IV, the pressure that's coming out the end is high and just like in that hose it comes out as a jet. And in smaller, fragile veins that can cause the vein to burst. And then you're back at looking at situation where your drug or your fluid is not going in the vein. It's going into the tissues around the vein.

Q Dr. Van Norman, are you familiar with the chemical pentobarbital?

A Yes. Pentobar -- yes.

Q What characteristics does it have?

MR. AYERS: I'm going to object --

A Pentobarbit --

THE COURT: One second.

MR. AYERS: Her expert report says nothing about the characteristics of pentobarbital.

THE COURT: Is there anything in the report

about it?

MS. BALES: Your Honor, we -- her report talks about if -- if the chemical leaves -- moves out of the vein and into the tissue, that you are going to get burning. I don't have the report in front of me, but that's -- and she does talk about that in her studies of -- in what study in particular, the Angel Diaz execution, the pentobarbital left the vein and caused significant burning. So I mean she does -- that is in the report. Maybe the word "characteristics" isn't, but the alkaline nature of pentobarbital is discussed.

MR. AYERS: So I'll withdraw that objection, Your Honor. No objection to talking about the nature of the -- in the context of the IV access.

THE COURT: All right.

MS. BALES: Okay.

THE COURT: That made it easy for us.

MS. BALES: Okay.

BY MS. BALES:

Q Continue, Dr. Van Norma. What would happen is the pentobarbital gets into Ms. Pike's -- the flesh around the vein or under the skin.

A Pentobarbital and its sister thiopental which is identical in characteristics to pentobarbital are extremely caustic chemicals. They're

like Drano or lye. And if they're injected into tissues rather than say spill it on the skin, or injected into a high flow bloodstream -- high flowing bloodstream -- if you're just injecting it into tissue, may cause a deep chemical burn that is very severe. It destroys tissue on contact.

And back in the days when we were giving thiopental as an induction agent, we used to occasionally see this where you inject the drug and your IV isn't working or the IV breaks when we're giving the drug and they get a partial or total extravasation. It is excruciatingly painful. I've personally seen patients scream when that happens. And I've personally had to deal with burns that happened from barbiturate injections of pentobarbital or thiopental during anesthesia care.

And if you don't act quickly -- even if you act quickly, the patient is going to be left with burns. But if you don't act quickly enough, they will be extremely severe burns.

In addition, I've also personally seen that you don't get the same clinical effect when that drug doesn't get totally in the bloodstream. Pentobarbital will not have as much -- it doesn't have clinical affect in the tissues. So the clinical effect you'll see will be reduced by whatever amount -- whatever percentage is

given into the tissues, rather than into the bloodstream.

So you get reduced clinical effect. You get local excruciating pain. You get local instant destruction of tissue damage. And those are experiences that I have direct knowledge of from my anesthesia practice.

Q Dr. Van Norman, we've discussed that a needle that's too big can damage the vein and we've discussed that a needle that's too small, you have -- also have issues with that. Have you been able to form an opinion as to whether Ms. Pike has an elevated risk of IV access difficulties during the execution?

A Based on her characteristics that we can read in her medical reports, she has a high -- highly elevated risk of a difficult IV access. Somewhere between quadruple to ten times the chance of a person who has -- who has not got her conditions of obesity and essential thrombocytosis of having -- or small veins -- of having the same problem. And that is to a degree -- reasonable degree of medical certainty. She has elevated risks.

Q Okay. What does the protocol say to do if the IV access fails?

A The protocol instructs that the physician will place a central line.

Q Okay. Okay.

MS. BALES: Your Honor, for the Court, I'm going to talk with her about this -- the alternative first. That a central line, it --

THE COURT: You're going to talk about the 23-gauge needle first? But then central line? Or how are you going to do it? Or are you giving up on the 23-gauge needle? Let's not waste our time.

MS. BALES: Okay. Your Honor, our experts have explained that a 23-gauge needle is not sufficient to manage the lethal injection chemicals because of the extreme pressure that the chemical would come out. So we are focusing on the central line.

THE COURT: So you're withdrawing that as an alternative?

MS. BALES: Is that what we're doing?

MR. IHNEN: Yes, Your Honor.

MS. BALES: Yes.

THE COURT: All right.

MS. BALES: So I'm -- we're going to -- I'm going to invite Dr. Van Norman to discuss a little bit about central line and the qualifications or background that a physician would need to do that.

THE COURT: Okay.

BY MS. BALES:

Q Dr. Van Norman, what is --

MR. AYERS: Hold on, if I may. So the Court ruled that the qualifications are not relevant. What is relevant is the relative benefit of a central line as an alternative. So as a proposed alternative, the Court has to presume that whoever places it is qualified. So qualification is not a here nor there.

THE COURT: I'm going to let them -- I mean their proposal is that the only person that can do this is a physician. I think that's your proposal.

MS. BALES: A physician who is qualified --

THE COURT: She just explained that no physician can do it, but -- because it would violate the cadence of ethics and the U.S. Supreme Court said that no state has to adopt an alternative that would violate somebody's professional cadence of ethics so are we just going in circles on this one?

MS. BALES: No, Your Honor. The -- we've alleged that a central line administered by a physician who has the qualifications and experience, is an alternative. The protocol --

THE COURT: But she said that basically no physician is going to do this and it has to be an alternative that's -- what is it? Feasible and readily available?

MS. BALES: Yes.

THE COURT: Now the U.S. Supreme Court has said it's not feasible and it's not readily available if it would violate someone's cadence of ethics to participate. So are we really just going in circles with this central line thing?

MS. BALES: Your Honor, the protocol provides for a physician to do the central line. Apparently in the Carruthers' execution they were able to find a physician who -- who attempted that. And Ms. Thomas testified that she confirmed that that person -- she confirmed their credentials.

THE COURT: Well, I mean I've already ruled that's not relevant to this inquiry. The only relevance that the central line has is that it's your proposal that instead of peripheral IV, that there should be a central line. That's where you start. The more evasive procedures start with a more evasive procedure but the only person that you say can do that is a doctor, but your own witness says a doctor can't do that. So I mean --

MS. BALES: Well, Your Honor, I --

THE COURT: -- are we just --

MS. BALES: -- I believe --

THE COURT: -- you can work that out with her.

MS. BALES: Okay.

THE COURT: It doesn't make sense to me that we're talking about a central line when -- as an alternative when your own witnesses are going to say that nobody in the medical profession is going to do this. So, you all can explain that. It doesn't have to make sense to me.

MS. BALES: Thank you.

THE COURT: As long as it makes sense to the Court that's reviewing this --

MS. BALES: Right.

THE COURT: -- that's okay. But --

BY MS. BALES:

Q Dr. Van Norman, when you were talking about whether a physician would do this, were you describing the ethics rules?

A I was, yes. But I was describing also my personal response to the ethics rules. I don't make a judgment about whether anyone else would do this.

THE COURT: No, wait, wait.

MS. BALES: Okay.

THE COURT: Let me just make sure I -- that we're all on the same page.

MS. BALES: Yes, Your Honor.

THE COURT: You're aware the U.S. Supreme

Court says that an alternative does not have to be adopted by the state if it would require someone to violate their cadence of ethics?

MS. BALES: Your Honor, the protocol now calls for a physician. That -- that's in the protocol. The issue is that we -- the TDOC has struggled to hire a physician who has appropriate training and qualifications --

THE COURT: That's not the issue in this proceeding. It may be the issue in your overall arching lawsuit, but that's not the issue for the questions that the Supreme Court has asked us to focus on. And under the law that both sides have cited to me, you have to identify alternative to the State's planned execution that is reasonably available and easily implemented and the U.S. Supreme Court says that that alternative -- the State is justified in not adopting an alternative that would require the medical profession to violate their cadence of ethics. And -- but the alternative you proposed is that requires a physician to violate their cadence of ethics.

Now I understand your position that they've -- using a physician that's violating his cadence of ethics, but that's a different issue. We're talking about your proposal as an alternative is that a central line be the

primary goal that has to be set by a qualified physician.

MS. BALES: Yes, Your Honor, a physician of --

THE COURT: I'm going to let you put on your proof, but --

MS. BALES: Okay.

THE COURT: Go ahead. But I don't know what you're going to do with the fact that doctors are not allowed to do this. And that that's a legitimate reason for a state to not adopt your proposal.

MS. BALES: Your Honor, with the Court's permission, I would like to brief whether doctors -- licensed physicians are allowed to do this in Tennessee.

I know the State testified earlier today that they do have licensed --

THE COURT: Well, I tell you what. Why don't we not worry about it because that's beyond the scope of my questions.

MS. BALES: Okay.

THE COURT: They asked me to determine whether your alternative methods are more beneficial. I'm not using the exact words.

MS. BALES: Right.

THE COURT: They didn't ask me to determine whether it was reasonably available in all those other requirements. They didn't ask me to determine whether

the states refused to do it or whether there was a legitimate penological reason. They didn't -- they only asked me to compare, so.

MS. BALES: Okay.

THE COURT: You don't have to explain that to me, but you're probably going to have to explain that to the Supreme Court --

MS. BALES: Okay.

THE COURT: -- down the road.

MS. BALES: I understand.

THE COURT: We're -- I'm just going to focus on what they told us to do.

MS. BALES: Thank you, Your Honor.

THE COURT: So you -- for part of your proposal you want a trained, qualified doctor to do this and you're going to ask her what the benefits of going with central line placement in lieu of peripheral?

MS. BALES: Yes, Your Honor.

BY MS. BALES:

Q Dr. Van Norman, what is the central line?

A A central line is a central IV or a central line is placing a catheter -- usually a longer catheter because they're deeper veins -- into the veins that are inside -- basically inside the body cavities or

that run into the body cavity. So this would be veins that run into the pelvis, the abdomen, and the chest and specifically veins that go in the heart.

And central lines, the typical ones that are places are placed either in the internal jugular vein of the subclavian vein, which runs under the collar bone or the femoral vein, which runs in the groin.

These veins are different than other veins in that they're much larger. They have a much larger access sight. Much larger blood flow. And they don't have valves in them that impede blood flow or that -- that slow drugs down from getting to the central circulation. So they're placed into a much larger vein that is within a body cavity. Or in the neck, I'm sorry. I keep forgetting that the neck is there. So. Yeah.

Q How hard is it to place a central line? Dr. Van Norman, how hard is it to place a central line?

A If you're -- if you are trained and have a lot of experience, they're not all that difficult. But they are very prone to extreme complications. For -- complications such as a rupture of a main vein inside of a body cavity you could bleed to death in a few seconds.

Placing a -- either the guide wire, which is a special wire that's put through the needle to help guide

the catheter into the vessel can cause a stroke and fatality if you place it in an artery, such as the carotid artery, subclavian artery, or femoral artery, all of which run right next to their respective veins.

There -- lines that are placed in the chest, like subclavian veins and even the jugular vein in the neck, can also clip the lung and cause the lung to collapse.

There are a number of life threatening complications that can occur if these are not done properly. And they have a fairly high complication rate, although the mortality rate -- the risk of death is not extreme, about ten percent of these lines have serious complications.

Such as placing a needle in the artery -- a carotid artery instead of the carotid vein, or putting a guide wire into one of the arteries. Or rupturing the vein itself.

So training and continuing clinical experience are absolutely necessary to be able to do these lines accurately, efficiently, and safely.

Q And what qualifications do hospitals require for a physician to have that privilege?

A Well, hospitals go through what's called a credentialing process before they'll let anyone

of any practice variety practice under their roof. They want to make sure that they are qualified to do so and that they've gotten the training to do so.

And in the case of central lines, most healthcare organizations require that a -- that a physician show that, first of all, they did receive actual training in how to do the line and that since the point of training, they have continuing clinical experience.

Because it isn't sufficient to train 20 years ago, for example, or 15 years ago and then place a line that's dangerous to place without continuing practice at it. It's a manual dexterity type procedure, and if you don't do it often, you aren't going to be as good as it.

So most institutions require that if a physician wants to place a central line, they document -- they show that they've had the training. They document their recent clinical experience, or they need some training or continuing clinical experience requirement that the hospital itself sets up to show competence.

And, generally, the cycle of re-privileging is about every two years, so about every two years a physician is going to have to show to either their department or the hospital that they have those skills if they want to place a central line. Not all physicians

want to place central lines so they don't have to go through that.

Q Okay. How common is it to use an ultrasound when placing the central line?

A Today, ultrasound is a standard of care. It's used in every line unless every one of your ultrasound machines isn't working.

These are little handheld -- these are handheld devices now. They are ubiquitous and everywhere and you use them for central line placement every single time, unless -- literally you can't have an operating machine or you're violating a medical standard of care.

Q Okay. And you -- you've reviewed the protocol -- the lethal injection protocol?

A I have.

Q And did the protocol list any qualifications for the physician?

MR. AYERS: Objection.

THE WITNESS: Yeah --

MR. AYERS: The Court has ruled on this.

THE COURT: Yeah. I'll sustain that objection.

MS. BALES: Okay. Your Honor, could we move then to the offer of proof part of this that talks about the qualifications and what the lack of qualifications

that the physician had in the attempted execution of Mr. Carruthers?

THE COURT: I -- I've ruled that's not admissible and you just want to make an offer of proof, right? Does the State want to --

MS. BALES: Your Honor, we could tender her report --

THE COURT: I --

MS. BALES: -- it --

THE COURT: -- I'm inquiring whether the State wants it? I could let them make an offer of proof by tendering her report, as -- for ID only. Not as an exhibit in the trial. Or -- but that deprives you of the opportunity to cross-examine her. Again, once deferred to you.

You know, the law says that when it's absolutely, positively, clearly irrelevant that it's not an error for me to deny the offer of the proof. I'm trying to -- to me, it's absolutely, positively -- and I'm trying to bend over backwards.

MS. BALES: Your Honor, we appreciate that. I will --

THE COURT: Let me hear what -- before you -- he may save us the trouble. Can I -- can I introduce her report as ID only to form her offer of proof?

MR. AYERS: The State would agree with what the Court said before lunch, which is that if we have to submit offers of proof for every evidentiary issue the Court rules on, we're going to be here into next week.

So the State would just ask the Court to rule that it is irrelevant -- it's prior ruling. And we can move on. They -- again, they are going to have the chance to brief this to the Supreme Court. Just because they can't introduce proof in this evidentiary hearing doesn't mean the issue is gone forever. And so we would ask that we could just move on from this topic and get on with the testimony.

MS. BALES: Your Honor, I could move through this topic very quickly.

THE COURT: Well, that's what you said last time and it's -- an hour later we were still going on and I'm exaggerating --

MS. BALES: It wasn't an hour.

THE COURT: I'm sure I exaggerated, but you made it sound like when I'm going to be brief and it was going to be two minutes and it exceeded that. I tell you what I'm going to do. I know what I'm going to do. Explain exactly what you want from her. Real -- real quick.

MS. BALES: She -- she reviewed

Ms. DeLiberato's declaration and based on the facts that Ms. DeLiberato observed, she offers an opinion that the physician that attempted to place the central line in Mr. Carruthers was not qualified because he made several egregious mistakes.

THE COURT: All right. Here's how I'm going to handle this. I'm going to rule that that's not admissible. I'm going to exercise my discretion not to do an offer of proof on this because of the nature of this hearing, it -- I've got these very, very narrow questions and the Court said that if there were additional questions that after they get this that -- I don't know how you all read it, but I read it as we may be coming back. If -- for a second hearing, if the Court believes that there was additional information that they need.

MS. BALES: If I could just make one more argument, Your Honor.

This morning, I believe it was Commissioner Thomas testified when she checks the credentials and qualifications, that some of the folks in the execution chamber have decades of experience. And I feel that that opened the door to looking at the nature or -- of that experience or the lack of that experience. I think that her testimony about their qualifications makes this

relevant.

THE COURT: You interpreted that to mean she was talking about the physician? As opposed to the IV team? I mean I took it that she was talking about the IV team.

MS. BALES: I -- my memory is not that -- that fined tuned as the Court's --

THE COURT: Well, mine isn't either, but --

MS. BALES: I feel they did make it --

THE COURT: It was a good try, but I think -- I think -- I think I'm -- we're going to move on. I'm not going to allow --

MS. BALES: May I offer her report for identification only?

THE COURT: Yes. Yes.

MS. BALES: Your Honor, may I --

THE COURT: Do you have --

MS. BALES: -- may I have --

THE COURT: Do you have that?

MS. BALES: I do. I do. May I have just a moment to check with my colleague to make sure I haven't overlooked anything?

THE COURT: Do you all -- does anybody need -- I was just going to sit here, but does anybody need a recess?

MR. AYERS: Maybe five minutes, Your Honor?

THE COURT: Five-minute recess. And then we'll grab a copy and make that the next exhibit when we get back.

(Whereupon, a recess was taken.)

THE COURT: We'll call the Court back to order. We're back in session. Were you still in your direct?

MS. BALES: Oh, no, Your Honor. I've concluded.

(Exhibit No. 9 - late-filed for ID only)

THE COURT: Okay. Then at a later time, maybe tomorrow, we're going to make sure -- we're going to enter for ID only the doctor's report. But you're going to make sure that it's been redacted?

MS. BALES: Yes, Your Honor.

THE COURT: Okay. Let's don't mess that up. I would hate to mess that up after I've told all of you not to be revealing any information and we enter a repot that's got all the information that I wouldn't want in there.

We'll do that later. So, cross-examine.

CROSS-EXAMINATION

BY MR. AYERS:

Q Can you hear, doctor?

A I can. Thank you.

Q Dr. Van Norman, I'd like to start with some questions about a particular word in your report. Your report uses the word "excruciating" 14 times. Would you disagree?

A I'm sorry, what word? Again, there is sort of a breakup at my end. I apologize for having to ask for repeats this often, but.

Q No problem. The question was your report uses the word "excruciating" 14 times. Do you disagree with that?

A I will take your word for it. I don't -- I -- I've used the word. I don't know how many times.

Q When you were in clinical practice, did you use that word very often?

A I -- in anesthesiology and pain medicine, we use lots of words to describe pain and excruciating is a word that we do use to describe very severe pain. So, yes, we use it in practice.

Q Now, on page six of your report, you use that word excruciating to refer to the insertion of a needle for peripheral IV access; is that correct?

A Can you -- I actually have my report in front of me. Would you give me the line so I can look

at that?

Q So, again, this is on page six and it's --

A Uh-huh.

Q -- it's in the first numbered paragraph. Do you see that paragraph?

A I do.

Q And are you saying in that paragraph that -- well, let's just read it. "Complications of peripheral and central line placements are common during lethal injections and executions. These complications lead to protracted attempts at placement of venous access catheters and these attempts are excruciating." And it continues on.

So is it your contention that an attempt to achieve peripheral IV access is excruciating?

A I -- I think if you read the sentence, you'll see that what I've said is that protracted attempts at IV access are excruciating. And yes.

Q Okay. So you would agree that tens of thousands of people get IVs in this country every single day?

A Yes.

Q And that each one of those people is

stuck at least one time with a needle, right?

A Yes.

Q And some of them are stuck more than once?

A Yes.

Q And among those, a smaller portion are stuck several times?

A I don't know that it's a smaller portion, but yes, there are people who are stuck once and have their IV started. And there are about 60 percent of people that will have one or more attempts.

Q So when in your view does it become excruciating to achieve IV access?

A Well, it depends. If it's a patient who already has a significant amount of pain with IV starts, as some do, it can be excruciating on a single attempt.

Multiple attempts generally people get more -- and this is from experience as starting tens of thousands of IVs -- people get more and more anxious and as each attempt -- as the number of attempts increases, they get more and more painful for them.

So, it depends partly on the patient when it becomes excruciating. Partly on whether there are multiple attempts, although even a single attempt can be

if it's -- if it's not done properly or if the patient already has pain.

So it's not a question that's easy to answer for lots of people. I would have to know the patient and the person and what difficulties they were having.

Q Let me ask you this. In the tens of thousands of IVs that you have placed in your career, did you ever warn a patient before you placed the IV that they were about to suffer excruciating pain?

MS. BALES: Your Honor, I would like to object just that the paragraph one, she says that "repeated IV attempts during executions," so just to put that in context. She's talking about the repeated attempts at IV access during executions and the complications from that.

So she did not say that your complication with an IV in a clinical setting is excruciating. It's very clearly talking about repeated attempts and prolonged -- prolonged efforts at IV access of -- during lethal injection. Is what this -- the -- this paragraph is about.

THE COURT: So what's your objection?

MS. BALES: He is assuming facts not in evidence. That's not what that -- that's not what her report says.

THE COURT: I understand that's not what the

report says, but I thought she just testi -- I'm going to give him some leeway to do his cross-examination. And -- so -- I'm going to overrule your objection. But I note that that's what the report says.

MS. BALES: Thank you, Your Honor.

BY MR. AYERS:

Q The last question on this topic, as I was saying before, in the tens of thousands of IVs you've placed during your career, did you ever warn a patient that they were about the suffer excruciating pain?

A I warn my patients about how much pain I think they'll feel. I don't remember a specific instance, but it is entirely possible that I have. I've certainly warned them that this might be severely painful.

However, I'll point out that when I start IVs, I also use local anesthetics so that they have less pain.

Q Would you always give a local anesthetic when you started an IV?

A I always give a local anesthetic when I'm starting an IV. Always.

Q And you would agree that sometimes in a clinical setting, it is difficult to achieve IV access?

A I agree, yes.
Q And in your experience, has it sometime taken several attempts to get peripheral IV access in a patient?
A Yes. Sometimes. But not commonly.
Q And does that sometimes require attempting IV access in different parts of the body?
A It can.
Q And will patients sometimes bleed when that happens?
A I'm not sure I understand what you mean by bleed? Do you mean like do they sometimes get a little bit of blood around the IV or?
Q Yes.
A Yeah. Yeah, that can happen. Certainly.
Q And have you personally served as an anesthesiologist in procedures or surgeries where it has taken multiple attempts to get IV access?
A Yes.
Q And in those cases, did it take several minutes?
A They're -- as opposed to -- I mean, yeah, it takes -- it takes probably about two or three minutes per IV attempt.

Q And have you ever been in a procedure in a clinic where it took half an hour to secure IV access?

A It would be extremely rare for me to take a half an hour to get IV access. I'm sure that some people have had that happen.

Q But have you personally witnessed that?

A I'm sure I have. I can't think of a specific instance.

Q But it's not unheard of. Is that what you're saying?

A About? I mean, yes, that's what I'm saying.

Q Thank you.

A Yeah.

Q So I have some questions about some other terms you use in your report.

The first being infiltration. So, is infiltration when an IV catheter is placed somewhere outside of a vein? Do I have that right?

A Well, the way I used it in my report, I defined it in my report because I'm using it specifically in an anesthesia context.

And what I said was that an infiltration is --

I mention an infiltration is when the -- there's a displacement of the IV catheter, partially or totally into tissues, such that there is fluid that goes from the IV catheter into the -- into the tissues.

Extravasation is very similar, but I'm using it in the -- to mean that when a drug is injected, rather than just fluid going -- flowing through the IV.

I'll point out that in the -- that these terms have different meanings if you use them in the context -- in some other context. For example, some folks define an infiltration as any time fluid or a drug makes it outside a vein because the IV is outside the vein, but that the fluid is regular fluid. It's benign. And that extravasation is when the fluid is what's called a vesicant -- or a fluid that contain -- that can blister or burn the tissues.

Injecting pentobarbital outside of the vein would be under those circumstances called an extravasation because it is a vesicant fluid. It has a quality that it can burn just by itself.

Q I see.

A I don't mean the sensation burning. Mean it can literally cause a burn.

Q Yes. And can infiltration occur in a clinical setting?

A Yes.

Q Can extravasation also occur in a clinical setting?

A Yes.

Q You refer in your report to a central line as a -- and I'm quoting, "relatively dangerous procedure." Do you still hold that view?

A Well, first of all, I was actually not saying that myself. In the report, I am quoting a colleague, Andrew Battle, who refers to these as a relatively dangerous procedure. I happen to agree with him, but I just want to be clear that that is not a quote of me. That is a quote of someone else.

Q Yes. Thank you for that clarification.

A Uh-huh.

Q And you testified earlier about some of the complications that can arise from central IV access, such as a rupture of the jugular; was that a potential complication of central line access?

A Yes. I don't think I referred to that earlier, but what I said was that you can damage the veins and get injections outside the veins. And that includes the veins I spoke -- any of the veins I spoke about, the jugular, the subclavian, the femoral.

Q And you were -- and you mentioned lung damage as a potential complication?

A It is because the lung is near -- in the upper chest. It's not a potential complication from a femoral line, but when you're placing one of these lines, either via subclavian route or via internal jugular, it is possible for the needle that is looking for the vein, to actually nick the upper part of a lung. The lung comes up much higher in the chest than you think it does.

Q Okay. Do you consider peripheral IV access to be a relatively dangerous procedure?

A No. The reason I would distinguish between the "danger", and again, I'm quoting my colleague -- between peripheral lines and central lines is that the potential complications of a peripheral line are not immediately life-threatening.

It's hard -- it's really hard with an IV catheter to have a complication placing in a peripheral vein that would immediately put the person's life in danger.

But it is not difficult to have that experience happen with a central line that is improperly placed.

Q Now you earlier discussed some of

Ms. Pike's medical records. You were shown -- let me pull exhibit -- this is Exhibit No. 6. Can we show that to Dr. Van Norman? This is the -- the blood draws. We're going to try to pull this back up on the screen for you.

Unless you happen to have a paper copy with you of Ms. Pike's blood draws? Do you have a copy with you?

A Are you asking me?

Q Yes.

A No, I don't have a copy of it right in front of me.

Q We'll try to pull it --

A It would take --

Q -- back out for you.

A Yeah.

Q Can you see that on your screen? The document?

A I can. Yes, I can.

Q Okay. So this is what was previously marked as Exhibit 6. You would agree that this is a phlebotomy record, correct?

A That's correct. It is not an IV placement.

Q And do you have any personal

knowledge of what equipment the phlebotomist at the Debra Johnson Rehabilitation Center use?

A No.

Q So you don't know what all size needles they might have at their disposal, do you?

A I do not.

Q And we see on this particular page, there is mark next to a 23-gauge butterfly needle, correct?

A I'm sorry, say again? I --

Q Actually strike that question. So, for all you know, all they -- they only have one size of needle at this facility, right?

A I suppose it's possible, but to only have 23-gauge, short needles for a potentially obese patients wouldn't make much sense.

Q But you don't have any personal knowledge about what kind of gear they've got there, do you?

A That's correct.

Q Did you see in your review of Ms. Pike's medical records any notes or statements that anyone ever had trouble securing IV access in Ms. Pike?

A I did not see any documentation of IV access in Ms. Pike. Period.

Q And your report mentions a scoring system called DIVA. Are you familiar with that?

A DIVA isn't a -- well, it's -- it's variously referred to as a scoring system. It's also an abbreviation for difficult IV access, so.

Q And but are you familiar with -- with that term and that concept?

A I am. Uh-huh.

Q Okay. Can a score or a value be assigned to a person based on risk factors for difficult IV access?

A There are a couple of papers that sort of convert the risks into a scoring system, yes. But most of them actually just -- because it's the risk factors a variable, most of them list the risk factors and how -- what the so called relative risk or odds ratio are of a difficult IV based on the presence of those factors.

Q Okay. And so -- also in this -- I'm going to ask you another question about this exhibit that's in front of you. Do you see any documentation in these blood draw records that indicated there was difficulty in achieving venous access in Ms. Pike?

A These are blood draws. They are not IV access, so you can't -- it's not the same thing. So

there's no documentation here about IV access and being able to get a small needle into a vein does not predict whether you will be able to get an IV into that vein.

Q Yes. Thank you. My question was actually with respect to the blood draws. Do you see any notation that the phlebotomist had trouble drawing blood?

A Thank you. That's a good clarification. No, I do not.

Q In Ms. Pike's medical records, did you see any documentation of the phrase "small veins"?

A I don't recall seeing that. No.

Q Do you recall any documentation of non-palpable veins?

A No.

Q Do you recall any documentation of non-visible veins?

A No.

Q And you have never examined Ms. Pike personally, have you?

A No. I wasn't given the opportunity.

Q And so your conclusion about her risk for IV access is speculation, isn't it?

A Well, no. She is obese. And she has that -- at least that risk factor and obesity is a significant risk factor for a difficult IV access. And

she has an essential thrombocytosis, which increases problems with IV access in my experience as an anesthesiologist. And so I'm not speculative about those. Those are elevated risk factors.

Q Now in your experience as an anesthesiologist, would you make a call about what size needle to use to achieve venous access without ever seeing the patient?

A There are sometimes procedures that dictate what size IV we have to have in. Yes.

Q So is your answer to that previous question yes?

A Sometimes we have to -- yes -- sometimes we know that whatever procedure we're going to have, we'll need an X sized IV. I'm trying to answer your question as exactly as you asked it. So, yes, there are times when we know that we're going to have to use a certain size IV.

Q Okay. And this is not the first time you have offered an opinion as to whether an inmate in Tennessee is likely to suffer harm during an execution, is it?

A No.

Q Do you recall the case of Byron Black?

A I do.
Q Do you recall offering an opinion in that case that Mr. Black would suffer pain from an ICD device?
A Yes.
Q Do you recall stating that that was a virtual medical certainty?
A I stated that it was a virtual medical certainty that if the device -- if the device fired during his execution, that that would be very painful and that there was a high risk that that device would fire. Because clinical experience with ICDs, which I have as a cardiovascular anesthesiologist, means that I have clinical experience with what are called inappropriate shocks.
Q But that didn’t happen, did it?
A It did not. He did not have his device fire. But that doesn’t mean that there wasn’t a high risk that it would fire, and it was a virtual medical certainty that if it fired that it would be extremely painful.
Q But that did not happen, did it?
A His device did not fire during his execution.
Q Now, as for Ms. Pike, do you have

any personal knowledge as to whether she has inflammation or clotting in her veins?

A All patients with essential thrombocytosis have increased clotting, increased oozing, and microvascular disease.

Q But you're not a hematologist?

A I'm an internist and I deal with thrombocytosis and I also deal with perioperative issues in central thrombocytosis.

Q And in your experience as an anesthesiologist, did you ever do anything different to achieve IV access in a patient that did have thrombocytosis?

A Yes. Among other things I have used an ultrasound device to try to locate veins and to find the largest veins that I can get.

In addition, perioperatively we have to manage their -- their -- some of these patients are on anti-platelet drugs, so they take drugs that make them ooze. And sometimes we -- they take drugs to make them clot during surgery. There are some medications that we give. And so depending upon the presence of those medications, we may address the medications.

I've also adjusted the site where I start my IVs in patients like this because the small vessels are

going to be more difficult.

Q But Ms. Pike does not receive anti-platelet medications, does she?

A I don't remember if she's currently on aspirin, but she has been on aspirin. Yes.

Q Do you consider aspirin an anti-platelet medication?

A Aspirin is the definition of an anti-platelet medication. It is a -- it is what cardiologists use in heart patients for many anti -- for anti-platelet procedures. They use aspirin to prevent strokes. To prevent stint thromboses when they place stints. It has a direct anti-platelet action and it is in the class of an anti-platelet drug. Yes.

Q And you would agree that Ms. Pike's records show that she does not have any symptoms of thrombocytosis?

A Well, thrombocytosis in terms of having clots can be entirely A symptomatic.

Q But you did not see any evidence of symptoms in Ms. Pike's medical record, did you?

A I don't recall specifically, no.

Q Your report states an opinion that more frequent blood draws makes veins more difficult to access. Would you agree?

A My report states that. Yes.

Q Yet it cites no sources for that proposition.

A Well, the source is an anesthesiologist who has placed tens of thousands of IVs. So in my clinical experience, that is true.

Q So in your experience as an anesthesiologist, would you always have prior knowledge of how many times a patient's blood had been drawn?

A I often would, yes, actually. Because it's documented in their medical records. And most of the time I take a patient's -- care of patients in my own institutions. So, yes, I would usually know.

Q Do you see any indication in Ms. Pike's medical records that her veins are going to be difficult to access because of blood draws?

A That -- what kind of documentation would I -- I don't understand your question. There's no documentation that anyone would write that would say she will have difficult access because she has essential thrombocytosis. We simply are aware of that she -- the fact that she has a higher risk for having difficult access.

MR. AYERS: I just want to confirm with the Court that the 23-gauge butterfly has been withdrawn as

an alternative?

MS. BALES: Yes, Your Honor.

MR. AYERS: Okay. No questions on that then. That's all my questions.

MR. AYERS: Thank you, Dr. Van Norman.

THE WITNESS: Okay. Thank you.

THE COURT: Redirect?

REDIRECT EXAMINATION

BY MS. BALES:

Q Dr. Van Norman, you testified on cross that extravasation does happen in a clinical setting?

A Yes.

Q How common is it for extravasation of pentobarbital to occur in a clinical setting?

A Well, pentobarbital is not used in very many medical settings in the United States and it never has been.

We have used its sister drug, thiopental which has the same alkalinity, the same caustic action is -- it's barbiturate, it's chemically almost identical. And so in -- but it was used -- and it was used as an antistatic -- (technical difficulties) -- drug back in the 80s and early 90s. But because it had many problems associated with it, and because other drugs came along

that were better, we stopped using it.

But I trained and did my anesthesia fellowship, as well as my early years a cardiac anesthesiologist, using thiopental which is that drug. And I have clinical -- personal clinical experience with what happens if that drug extravasates.

Q And what happens?

MR. AYERS: Objection. Asked and answered.

MS. BALES: I'll withdraw the question. Your Honor, that's all I have.

THE COURT: Anything else with this witness? All right, ma'am. You're off the hook.

THE WITNESS: Thank you, Your Honor. Have a good day.

(Whereupon, the witness was excused.)

THE COURT: All right. What do you want to do next? Do you need a break or?

MS. BALES: Your Honor, can we have a ten-minute break?

THE COURT: Sure.

MS. BALES: And then we'll call our next witness.

THE COURT: Ten-minute recess.

(Whereupon, a recess was taken.)

THE COURT: Okay. Are we ready to get back to

work?

MS. BALES: Yes, Your Honor.

THE COURT: All right. Who is going to be your next witness?

MS. BALES: Dr. Joel Zivot. He is actually in the courtroom.

THE COURT: You're my first real live witness.

DR. ZIVOT: It's good to be alive.

THE COURT: You can sit down, sir. Raise your right hand.

(Whereupon, the witness was sworn.)

The witness, JOEL ZIVOT, M.D., was called and, having been duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MS. BALES:

Q Introduce yourself to the Court.

A My name is Joel Zivot.

Q Okay.

MS. BALES: Your Honor, may I approach the bench?

THE COURT: Sure.

BY MS. BALES:

Q Dr. Zivot, I've handed you a document, can you identify that for us?

A Yes, this is a copy of my curriculum vitae. My professional curriculum vitae.

Q Does it accurately represent your professional background?

A Yes, it does.

MS. BALES: Your Honor, we move that into evidence.

THE COURT: All right. We'll mark that Exhibit 10.

(Exhibit No. 10 - entered into evidence)

BY MS. BALES:

Q Dr. Zivot, what -- tell us a little bit about your formal education related to getting your medical degree.

A So I attended four years of college in Canada that was a mix between the University of Manitoba and the University of Toronto. And after that four years, I was eligible to apply to medical school. And at that time, a degree was not required to be eligible to apply to medical school, so I took the courses necessary to apply, and I did and was accepted to medical school at the University of Manitoba in 1984.

I spent the next four years in medical school, which was the time it took to complete that degree. I graduated in the spring of 1988. And then my post-

graduate training first year was at the -- in Toronto at Mt. Sinai Hospital in the University of Toronto system.

Q Dr. Zivot, I'm having a little trouble hearing you. Could --

A Oh, sure.

Q -- I ask you to speak up, please?

A Yeah. Okay. So I said I finished four years of college -- or of medical school, rather, then I went to Toronto, Canada and did a post-graduate year of training.

That entitled me to practice as a family doctor, if I chose, but instead, I elected to continue training and was accepted to a program in anesthesiology at the University of Toronto.

I spent another four years there to complete my specialist training in anesthesiology at the University of Toronto and was -- and earned a specialist designation that in Canada is referred to as the Royale College. So I have an FRCPC after my name, which is a Fellow of the Royal College Physicians of Canada.

And then from there, this was -- I completed that, I guess, in 1993. I then went to the Cleveland Clinic in Cleveland, Ohio, and did two additional years of training, which when I completed that, I was able -- or rather I earned a specialist certification from the

American Board of Anesthesiology. Anesthesiology was a separate subspecialty certification and critical care medicine. And I finished that in 1995.

Q Okay. And what does a critical care specialty -- are you practicing in that field now?

A Yes. Yes, I am.

Q What does that involve?

A So a critical care physician works in an Intensive Care Unit and cares for a variety of patients, really the sickest patients in the hospital who require intensive care.

These are patients generally who are either on a mechanical ventilator because of breathing problems or their circulation is very weak and they need special medication or machines to maintain circulation or they have serious infections or there's really, you know, a variety of kinds of conditions that may -- where a person may find themselves in Intensive Care.

So I'm an attending physician in a couple of different Intensive Care Units at Emory University currently.

Q And are you practicing now as an anesthesiologist?

A I practice -- you know, my -- so I'm an anesthesiologist with a subspecialty in critical care

medicine. So these days, my practice is -- is really in Intensive Care full time. But as an anesthesiologist, I'm called upon to do things that are particular also to anesthesiology as it applies to situations sort of outside of the operating room. So it's kind of a combination of anesthesia and critical care medicine that I'm doing.

Q Okay. And have you testified as an expert in anesthesiology before?

A Yes, I have.

Q Do you have any juried or refereed articles that have been published?

A I do.

Q In anesthesiology?

A I do.

MS. BALES: Your Honor, we move Dr. Zivot be recognized as an expert in anesthesiology.

THE COURT: Does the State care to Voir Dire?

MS. MORRIS: Your Honor, I would like to Voir Dire. Just based on his report, we feel that his opinions do go beyond the scope of anesthesiology. But as far as admitting him as expert in the field of anesthesiology, we have no objections.

THE COURT: I'll allow him to testify as an expert in anesthesiology.

MS. BALES: Your Honor, I'd also like for him to be able to testify as an expert in critical care.

THE COURT: Okay. Any objection to critical care?

MS. MORRIS: Depending on what critical care includes, Your Honor. We have opinions in Mr. Zivot's report that go to resuscitation after and mental health and pulmonary edema and thrombocytosis. We think that thrombocytosis, the mental health, and the resuscitation are irrelevant and go beyond the scope of his expertise.

THE COURT: What -- are you going --

MS. BALES: Your Honor, we're --

THE COURT: Some of these you may be doing, and some you may not. I don't know.

MS. BALES: Correct, Your Honor. He's going to testify about pulmonary edema and thrombocytosis.

THE COURT: Okay. But not the --

MS. BALES: Not the resuscitation or the mental health.

THE COURT: Do you want to voir dire?

MS. MORRIS: On the thrombocytosis issues, yes, Your Honor.

THE COURT: Okay. Go ahead.

VOIR DIRE EXAMINATION

BY MS. MORRIS:

Q Good afternoon, Dr. Zivot.
A Good afternoon.
Q My name is Samantha Morris. I'm with the Attorney General's Office.
Just to be clear, your experience is anesthesiology with a subspecialty in critical care, I think is how you -- how you phrased it?
A Yes.
Q In anesthesiology and your subspecialty in critical care, do you ever have the opportunity to care for patients who are diagnosed with thrombocytosis?
A Yes.
Q And do you diagnose those patients with thrombocytosis?
A On occasion, yes.
Q Do you believe that you are qualified to do so even though you are not a hematologist?
A Yes.
Q Okay. So you're board certified in what exactly, anesthesiology?
A Anesthesiology and critical care medicine.
Q But you are not board certified in

hematology, correct?

A I'm not.

Q So without that board certification for blood disorders or hematology, how would you be able to help people with platelet disorders such as thrombocytosis?

A I encounter in my job both as an anesthesiologist, but in particular, as an intensivist, I encounter patients who have bleeding disorders on a daily basis. And I see a variety of conditions related to other platelet disfunction or other kinds of disruptions within the coagulation cascade. I use medication to specifically either augment or retard coagulation as needed depending upon clinical situations.

So -- and I've been doing this for decades. I consider myself to be an expert in this field and comfortable to discuss this subject.

Q Have you ever written an article on platelet counts or thrombocytosis?

A No.

Q Have you ever testified as an expert to thrombocytosis or blood disorders?

A No.

Q So is it fair to say that this would be the first time that you have presented yourself as an

expert in a court of law as to blood disorders and thrombocytosis?

A Well, in a court of law, but not as an expert in clinical practice.

Q Okay.

MS. MORRIS: No further questions, Your Honor.

We would move based on Mr. Zivot's testimony, however, that he not be permitted to testify in the field of hematology, specifically thrombocytosis.

THE COURT: Well, I declare him an expert in the field of anesthesiology and I'm going to allow him to testify. Any opinions he has, I will assess that when I determine the weight that I'm going to give to those opinions. It depends on whatever factors you two lawyers bring up. But I'm going to go ahead and allow him to testify.

The test is whether his testimony might be helpful to the Court and the degree to which it's helpful, we will determine later. But I'm going to allow him to testify.

MS. MORRIS: Okay. Thank you, Your Honor.

DIRECT EXAMINATION

BY MS. BALES:

Q Dr. Zivot, have you read the Tennessee protocol, lethal injection protocol?

A I have.

Q And what chemical is used to induce death?

A Pentobarbital.

Q And what characteristics does that chemical have?

A So pentobarbital is a drug within a class of drugs referred to as barbiturates. Pentobarbital is a barbiturate and there are other drugs in that class as well. They work similarly. Some of the differences between them have to do with dosage, specifically duration of action. There are some unusual properties also within the, sort of a less commonly used, barbiturates, but that's basically, you know, what -- what they do.

I mean, they are used, I suppose -- do you want me to speak about, I'm sorry, what they do or how they work or --

Q What I'm particularly interested in is what would happen if pentobarbital came in -- comes in contact with human tissue?

A Sure. So -- so pentobarbital and drugs of that class are -- in order for them to be injected into the body, because it can also be ingested as a pill, they have to be prepared in a specific kind of

way. And the term is to, you know, constitute them or they're reconstituted from a powder into a liquid.

In order to get them to be a liquid, then the solution has to be of a certain form. And in this case, the solution that pentobarbital is is something in chemistry referred to as an alkali solution. There's a scale of the way that we think of chemicals and we classify them as either acids or bases.

It's a scale referred to as the pH scale and it goes from one to 14. Seven is the middle and seven is neutral, neither acid nor base, and the neither acid or base is water.

What they -- something that's important to understand about the way that we classify drugs along this sort of chemistry classification has to do with the fact that the scale itself is something called the log scale.

So log scale means although the number goes up by one, say from seven to eight, it actually increases by a factor of ten each time.

Now, you're probably familiar with a log scale when we think about earthquakes. So earthquakes are also a log scale. That's why an earthquake of three or four is of a certain size. But an earthquake of seven or eight is enormously bigger even though it's only a few

numbers.

Q And where does pentobarbital fall on the scale of measuring?

A So pentobarbital is nine or ten. And so that means it's -- and each time you go up by one, it's a factor of ten. So from seven to eight it would be ten times as strong an alkali. From eight to nine, would be a hundred times. And then nine -- eight to nine -- nine to ten would be a thousand times. So a thousand times potentially stronger an alkali than water.

And also as a similar kind of compound, it's like bleach. So bleach has a similar kind of pH. It's a very caustic substance.

Q And what -- so if -- asking my question again, what happens if that substance comes in contact with --

A Well, so --

THE COURT: Wait. Let her finish the question.

THE WITNESS: I'm sorry.

BY MS. BALES:

Q If pentobarbital comes in contact with human flesh or human skin, what happens?

A So, you know, what will happen is that the substance is caustic to tissues, it will -- it

will burn it essentially. And the reason why we can use it at all is because we use quite a small quantity and it has been kind of in -- normally in an IV that's flushing continuously with fluid and, you know, brisk circulation. And so in that way, we've been able to use these drugs in a clinical setting.

I've used sodium thiopental, which is a drug similar to pentobarbital thousands of times before it was pulled from the market. So I have a lot of experience of injecting that particular drug, you know, into intravenous in the being of an anesthetic.

Q So but if pentobarbital comes in contact with skin --

A Yeah.

Q -- what happens?

A So it can -- it's very caustic, it can burn it. And, you know, especially if it travels beyond outside of a vessel, then getting into the tissue itself, that can be very caustic and result in a very serious burn.

Q Okay. Thank you.

MS. BALES: Your Honor, may I approach the bench?

THE COURT: Sure.

MS. BERGMAN: Hey everyone, we're have

difficulty hearing counsel's microphone.

THE COURT: They're having trouble hearing you.

MS. BALES: Okay.

THE COURT: She's going to get closer to it.

MS. BERGMAN: Thank you.

BY MS. BALES:

Q Dr. Zivot, I've handed you a document. Can you identify that?

A Yes. This is a -- these are two autopsy reports.

Q I think --

A Is it two, I think, or just one? I'm sorry --

Q Just one.

A -- just one, yes, of Byron Lewis Black. And what is the date of death for that?

A The date of death on this form is August 5th, 2025.

Q Okay.

THE COURT: Did you say 5th or 6th?

THE WITNESS: Five.

THE COURT: Five.

BY MS. BALES:

Q And did you review this report in

forming your opinion in this case?

A Yes, I did.

Q Okay.

MS. BALES: Your Honor, we would move this report into evidence, this autopsy report. It's of Byron Black who was killed under Tennessee's current lethal injection protocol.

THE COURT: All right. That will be Exhibit 11.

MS. MORRIS: No objection to it being admitted as an exhibit, but I would, Your Honor, object to Dr. Zivot interpreting this document. I think he's been admitted as an expert in the field of anesthesiology, not pathology or medical examination. So we would object to him interpreting this autopsy report.

MS. BALES: I'm just going to ask him one specific fact about the report, Your Honor.

THE COURT: Well, we don't have a jury here, I'm going to let her let ask, then I'll decide whether to exclude it or not. Go ahead.

MS. BALES: Okay.

BY MS. BALES:

Q Dr. Zivot, on page four --

A Yes.

Q -- did you notice any remarkable

findings about Mr. Black's lungs?

A Yeah. The section in lungs here, I can just -- I'll read it. Shall I just read it?

Q Well, just --

A Yeah.

Q -- if you can just say what it -- what the finding was.

A Well, what's noteworthy here is the presence of fluid within the lungs and also a change in the color, a red-purple change in color which would be as a consequence of, you know, the presence of blood. And that would be an abnormal finding, you know, in this -- you know, an unexpected finding.

Q Did --

THE COURT: Is that all you want for that?

BY MS. BALES:

Q Did you find any observations of contents of his lungs, what was found in his lungs?

A Well, it says here that, you know, the pulmonary parenchyma is non-crepitant, red-purple and exudes --

THE COURT: I'm sorry, could you say that louder?

MS. BALES: Oh, sir, I'm on page four where the summary and interpretation section.

THE WITNESS: So, I'm sorry, there's also fluid that leaks out of the lung, you know, when it's cut, if that's what you're asking me. You know, these are -- the fluid specifically is contained within the airways and that's -- this is something that shouldn't be present.

BY MS. BALES:

Q We may not be looking at the same document. Are you looking --

THE COURT: Why don't you approach him and tell him where you're talking about.

THE WITNESS: Oh, in the summary.

MS. BALES: Yeah.

THE WITNESS: Oh, I see. The summary, okay. I was reading the section here. I see.

BY MS. BALES:

Q Just take a moment and read that summary.

A Sure. These documents are --

THE COURT: One second. Did you finish reading it?

THE WITNESS: Yes.

THE COURT: Okay.

THE WITNESS: So in the section that's called summary and interpretation, there's a -- the language is

a bit different than what was described earlier in the document. But their summary is that there's pulmonary congestion and edema. Edema is the medical word for blood essentially here. And I think that's, you know, what's -- what's at issue here.

And, again, that's not -- that's something that should not be present here. So the lungs are basically heavy, full with congestion fluid and blood and there's blood in the airways as well themselves.

BY MS. BALES:

Q Okay.

THE COURT: I'm going to note your objection, but we'll mark that Exhibit 11.

MS. BALES: What is the objection, Your Honor?

THE COURT: I'm sorry?

MS. BALES: What is the objection, Your Honor?

THE COURT: I believe it was outside his scope.

MS. BALES: Yes, Your Honor.

THE COURT: And I overruled that and am going to mark it Exhibit 11.

MS. BALES: Okay. Your Honor, may I approach again?

THE COURT: Sure. Do you have that document that she just gave you?

THE WITNESS: Yes.

THE COURT: Will you hand that to her and just let her mark it?

THE WITNESS: Thank you.

BY MS. BALES:

Q And what -- can you identify that document for us?

A This is an autopsy of Harold Wayne Nichols.

Q And what is the date of death on --

A This is December 11th, 2025.

Q Okay. And, again, looking for the --

MS. MORRIS: Your Honor, we would make the same objection as to this autopsy report as well that it's outside the scope of his expertise that he has been admitted to testify.

THE COURT: Is he just going to report what the autopsy shows as some other physician --

MS. BALES: He's going to note that the autopsy report found pulmonary edema.

THE COURT: But the autopsy was not done by Dr. Zivot?

MS. BALES: That's correct.

THE COURT: He's just reading what's in a

report?

MS. BALES: That's correct.

THE COURT: I'll allow him to do that. What was the gentleman's name?

THE WITNESS: Harold Wayne Nichols. Yes.

THE COURT: Why don't you go ahead and ask him to do it. We've talked about it, but he didn't really do it.

MS. BALES: Identify it?

THE COURT: Yeah, but tell us what's in the report.

MS. BALES: Okay. I was looking, Your Honor, myself to move the testimony along.

Your Honor, may I have a moment?

THE COURT: Sure.

MS. BALES: Okay. I apologize, Your Honor.

BY MS. BALES:

Q Dr. Zivot, on page three out of four, the section on respiratory system.

A Yes.

Q What does it show the cut surfaces of Mr. Nichols' lungs had?

A So it says here the cut surfaces of the lungs exude marked amounts of blood and frothy fluid.

Q Okay.

MS. BALES: Your Honor, I would move this into evidence as an exhibit.

THE COURT: Noting the objection, mark that as Exhibit 12.

(Exhibit No. 12 - entered into evidence)

BY MS. BALES:

Q Let's see. So it's -- how common is it for a person -- for a person to have pulmonary edema?

A In what -- like just in terms of like someone who is walking around, is that what you mean, or someone who is sick?

Q Okay. Let me back up a minute.

A Yeah. Yeah.

Q Have you -- golly, let's -- how common is it for lethal injection by pentobarbital to cause pulmonary edema?

A So I -- I have reviewed autopsies of prisoners executed with pulmonary edema in a number of states over a number of years. I've looked at many autopsies for lethal injections. Probably close to 300. And I've looked at pentobarbital, midazolam, and also -- and, you know, that was sort of where I primarily studied, although I've got some experience in other combinations, but this finding of pulmonary edema is very common with pentobarbital. Probably on the order of 65

to 70 percent of the time. So I would consider this to be, you know -- you know, it's not a glitch. It's a normal finding. A normal and common finding of pulmonary edema when people are killed with pentobarbital.

Q Okay. And what does a person suffering pulmonary edema experience?

A So pulmonary edema is essentially -- the term itself can be broken down into -- into the two words. So pulmonary refers to the lungs. And edema is the medical term for blood. And so it means basically blood within the lungs.

Pulmonary edema is generally a combination of blood and other kinds of fluid that accumulate within the lungs. And it's an extremely uncomfortable feeling. The lungs themselves really are designed, you know, for -- for the air we breathe. And no fluid normally occupies the airways and the special places where air is exchanged, where gases within air are exchanged with blood.

The -- as an example, I, you know, I consider if you drink a glass of water and if a little bit of that water goes down into your trachea by mistake, it's an extremely uncomfortable feeling. You cough and it's very uncomfortable because the lungs are designed to resist that very action.

And so now imagine taking an entire glass of water and pouring it into the trachea and it's -- it's a terrifying experience to try breathe through -- through this fluid. And that's what people who are afflicted with pulmonary edema face.

Q How quickly would pulmonary edema set in once the lethal dose of pentobarbital has been injected?

A Well, in my -- having reviewed this, my -- my opinion is that it happens very rapidly. That the time it would take for pentobarbital to travel from the arm to the lungs is really only a matter of moments. And so almost instantly, there's some -- there's likely some pulmonary edema that's occurring.

And we, you know, we can surmise this by observing people who have been executed with pentobarbital and some of the movements that they make or coughing or even complaints that people have made before they've died. And so I think it happens quite rapidly.

Q Can you explain how the pentobarbital causes pulmonary edema?

A So my opinion is it has to do with the fact that the -- that the solution itself is this very strong alkali solution that's caustic. And so when pentobarbital is injected in the huge quantity that is

involved in execution, this -- this very large volume of this caustic solution travels rapidly to the lungs.

And normally the blood vessels and the -- the air pockets they refer to individually as alveoli kind of come up against each other and are separated by a very thin membrane of tissue.

And in a normal situation, we breathe air in and the air travels down to these little alveoli kind of pockets and then the blood also then travels and kind of comes against the alveoli. And then within the air pocket, carbon dioxide crosses this membrane. And within the blood, oxygen that's in the blood crosses into the alveoli and there's this kind of back and forth exchange.

But no blood enters into the alveoli. So here now, the very caustic nature of the -- of the pentobarbital basically burns through this very thin membrane and now blood rapidly enters into the lungs themselves. And that's why we are -- and also, additionally, it can't happen after you're dead. So the only way that this is happening is that the heart is pumping the blood into the lungs.

And the reason why it gets frothy like that is because a person is breathing. And so the heart is beating. The lungs are moving. And it's that combination and the caustic nature of the pentobarbital

that burns this -- this thin tissue layer. That's why we see this pulmonary edema almost all the time.

Q Okay. Do you have an opinion about whether lethal injection by pentobarbital can cause pulmonary edema?

A I believe having studied this that the answer is yes.

Q And how -- how certain are you of that opinion?

A I'm certain.

Q Okay. Okay. So thus far we've talked about the lethal injection protocol the State plans to use in Ms. Pike's execution. I'd like to turn now to talk about how the protocol -- how this will apply to Ms. Pike. So I'm going to talk about Ms. Pike's medical records.

Have you had a chance to review her medical records?

A Yes, I have.

Q And what medical problem did you notice?

A I mean, there are several medical problems that are noted.

Q But the one relevant?

A So the one, you know, that we've

discussed is this issue of what's called thrombocytosis.

Q And could you tell the Court a little bit about thrombocytosis?

A Sure. So thrombocytosis is defined as an excess number of a cell product called a platelet. And platelets are like a fragment of a larger cell called a megakaryocyte which normally is born within the bone marrow. So megakaryocytes come from the bone marrow and megakaryocytes break up into these platelets and then platelets circulate in the blood.

And when you go to the -- you know, to your doctor and your doctor draws a blood test to measure, you know, certain factors within your blood, traditionally, they may measure the hemoglobin, the white blood cell count, and these things called platelets.

And platelets, the normal number is between 150,000 to 450,000. That's the normal number. And most people are probably in the, you know, two to 300,000 range. It's not so common to see platelet counts even above 400,000.

Q So what -- what are the risks or -- that a person with thrombocytosis has --

A Sure.

Q -- clotting?

A Yeah. I'm sorry. So I meant to

also add that thrombocytosis then would be defined as a platelet count more than 450,000. So that would be the -- so that's what that -- that's what that means.

Q And you saw that diagnosis in her records?

A Yes. She was diagnosed with, you know, with what's referred to essential thrombocytosis, which is like a precancerous condition essentially. It's a genetic defect that she has that has resulted in this problem.

Q And when the diagnosis was initially made, what was her platelet count, if you recall?

A Yes. At that time, her platelet count was around a million, which is, you know, very high.

Q And did you notice what her platelet count did after her diagnosis?

A Her platelet count does what can be normally seen in essential thrombocytosis, which is this kind of, you know, waxing and waning number. Like it never -- it's very -- it's occasionally when I've looked at it over the years, it's been in the high 400 range, but it's generally at least over 500 -- 500,000 at all times that I've seen it measured.

Q Okay. Can you explain what

paradoxical bleeding is?

A So within thrombocytosis, in the context of thrombocytosis --

Q Yes.

A -- the -- when the platelet count is high, higher than normal, the risk is that the blood will clot more readily. So there is a normal kind of clotting mechanism which is quite complex and has different elements, but it's there kind of working all the time, you know, that we're alive.

As an example, if you cut your finger and you see blood, so you maybe take your hand and you put pressure on your finger, and in a matter of a few minutes, you can take your finger away and there's no more bleeding.

And the reason why the bleeding has stopped, is because, you know, your normal body's mechanism is there to cause these, something called the clot, you know, which basically starts with a plug and then other factors are added to it and that -- without that, you would bleed to death.

And there are certain kinds of conditions that people have that make them very likely to bleed. There are other kinds of conditions that people can have that make them very likely to clot.

So thrombocytosis is a condition that makes the chances of clotting -- and when I say that clotting, I really mean abnormal clotting, so clotting when it shouldn't clot. But also paradoxically, with thrombocytosis, people can also have some increased tendency to bleed. And that's because platelets themselves involve another kind of factor called Von Willebrand's factor.

And Von Willebrand's factor is necessary in something called the coagulation cascade. And there are -- Von Willebrand's factor both circulates in the blood stream and also by ten to 15 percent of the Von Willebrand's factor in the body is contained in platelets.

But platelets can actually kind of consume the Von Willebrand's factor and you can end up with the Von Willebrand's factor deficiency. And in that situation, instead of clotting, now you bleed.

Q Okay. So that's what you mean when you say paradoxical bleeding?

A Yes. Yes, because one would imagine, you know, that if there's more of the factor that causes clotting, it should result in more clotting, not less. But in this kind of paradoxical circumstance, there can be more bleeding than clotting.

Q Okay. So given the risk of pulmonary edema that attends to lethal injection by pentobarbital, and given Ms. Pike's diagnosis of essential thrombocytosis, do you have an opinion as to any complications that she would face during the lethal execution?

A Well, I think there are several things. The first thing we can -- we can speak about is the fact that in order to have this procedure done, Ms. Pike will need to have intravenouses started.

Q Let's just focus on the pulmonary edema.

A Okay. All right. So within the -- within the lungs, you know, the pulmonary edema when it happens is also, you know, is an injury. And so now the body has this immediate reaction to being injured.

And one of things that would happen in a state of injury is that platelets are going to be circulating and will be in these injured lungs. And so the fact that there's an excess amount of platelets within the injured lungs can do a couple of things. It can cause either, you know, more bleeding in this paradoxical problem that we've discussed.

The platelets themselves have kind of factors within them that will be released. And they can have

even a more intense and worse inflammatory kind of reaction to this injury. So although pulmonary edema can happen, you know, happens commonly, you know, in anyone that's executed, in the case of Ms. Pike, it will be an even more -- even worse, if it's possible to imagine, potentially worse example of pulmonary edema that she may face in this case.

Q Okay.

MS. BALES: Your Honor, may I have a moment?

THE COURT: Yes. Sure.

BY MS. BALES:

Q Do you -- so we've talked about pulmonary edema. Do you have an opinion as to whether she is at a heightened risk of a clot forming in the IV access or in the IV line?

A I think that that was the other -- other problem that I think that she faces that is, I think, is material and that because of this risk of thrombocytosis, that once an intravenous is placed -- first of all, it might be difficult just on -- because of, you know, I understand that this --

Q Let's just focus on the clotting issue.

A All right. So once an intravenous is in place, the intravenous within the vein, you know,

is not supposed to be there normally. And so the body kind of regards that catheter as a bit of an invader and will kind of try to clot itself around that catheter under normal circumstances.

So that's called in this situation where a catheter, you know, is there, we refer to that as thrombophlebitis, so the vessel itself can become inflamed and then the inflammation -- and this happens very rapidly -- there can then be a clot because she now has this kind of -- because she has this tendency to clot. So this catheter that, you know, that is placed could just clot. And so it just won't work.

And so that's, you know, I think the risk that she faces that's quite material.

Q Okay. That's all I have. The State will ask you some questions.

THE COURT: Cross-examine.

CROSS-EXAMINATION

BY MS. MORRIS:

Q Hello again, Dr. Zivot.

A Hello.

Q I noticed I wanted to clarify one thing. You stated that edema is the medical word for blood. Is pulmonary hemorrhage not a more accurate statement and edema more related to fluid alone than

hemorrhage blood?

A I mean, I think that the, you know, the Latin derivations of these terms like overlap. So when we say pulmonary hemorrhage then, yes, specifically we refer to, you know, to blood. And we say pulmonary edema, it can be a combination of blood and fluids, you know, that are not specifically blood but are a component of blood within the circulation.

Q But you would agree that if pulmonary edema is mentioned in an autopsy report, it does not necessarily mean there was the presence of blood?

A No, this -- no, I wouldn't agree with that. No.

Q So every time that pulmonary edema is mentioned you would state that there's a presence of blood?

A There will be some blood there, yes.

Q Okay. You stated that you -- before sodium thiopental was, I think you said removed or not used anymore, you used it thousands of times. And I think you stated that sodium thiopental is similar to pentobarbital as in they're both barbiturates?

A Correct.

Q Or barbiturates, depending on how

you pronounce it.

A Yes.

Q So if those were used in the clinical setting and may still be used to this day in the clinical setting --

MS. BALES: Your Honor, that's a compound question.

THE COURT: Okay. We'll break it up.

MS. MORRIS: Okay.

BY MS. MORRIS:

Q If those are used in a clinical setting, what would the typical dosage be to put someone to sleep before surgery?

A Are you asking me about sodium thiopental or pentobarbital?

Q Barbiturates in general.

A Well, we don't use barbiturates in general. We use specific ones in specific situations.

Q Okay. Pentobarbital?

A So pentobarbital is not really used, you know, as -- you know, if you're at the -- you know, when you say to put someone to sleep -- is that what -- the word you used?

Q For an anesthetic prior to surgery.

A Yeah. It's not technically sleep.

So that may be a word that people use but that's not correct that -- it doesn't cause people to fall asleep. We don't use pentobarbital to do that.

Sodium thiopental was used as what's called an induction agent at the beginning of an anesthetic but it's not available anymore because of the death penalty.

Q Okay. I'll rephrase my question. I don't think it was very clear. For the use of pentobarbital in a clinical setting, for an induction agent, or prior to a major surgery, or a surgery, what would the typical dose be?

A It's a fraction of what the state is using. It's not a drug that we use in that way. So I can tell you, you know, off the top of my head, I don't remember the exact number but it's not used in that way. And, you know, it would probably be on the order of, you know, maybe a 20th or something or more, but I'm not certain off the top of my head, because it's not a drug that, you know, that anyone uses clinically.

Q So it would be a fraction?

A A fraction, yes. A fraction would be used clinically.

Q And that fraction that would be used clinically would be sufficient to prevent someone from experiencing pain during a surgery?

A No.

Q So they would experience the pain during the surgery if pentobarbital is used as an induction agent?

A Pentobarbital is not -- does not relieve pain in any dose. It's not used for pain control.

Q So when it's used, or when it was used, if it were used in a clinical setting, it would not prevent someone from feeling the effects of a surgery?

A It would -- it would not be used -- like an anesthetic is not an execution. So anesthetic involves many, many different kinds of drugs used in combination and no one would use a barbiturate alone, as I think you're asking me, and expect it to do anything like control pain. It's not -- that's not what -- that's not what it's used for.

Q What would it be used for?

A Well, first of all, pentobarbital isn't used. It's not used. And we -- it's -- the drug that used to be used was a drug called sodium thiopental. And, again, that would be one drug in a series of drugs that would be used at the beginning of an anesthetic, that period of time is called induction and it would be part of the, you know, the combination of medications to

create a state that would kind of transition from being sensate, you know, to some kind of state of stupor all the way to an anesthetic state that would allow for the surgery that you -- I think you're contemplating.

But it would not be the pentobarbital that would do that. It actually is fairly short acting. So it would be gone by the time the anesthetic got underway for the pain control part of the surgery.

Q Okay. You mentioned that pulmonary edema is very common 65 to 70 percent of the time. Do you have any basis for that opinion other than it's your opinion?

A Well, I mean, I've reviewed -- I have a preprint where I've reviewed 43 autopsies and then -- which found -- which included I think 15 of pul -- of sodium thiopental -- or pentobarbital, rather, and found pulmonary edema in that instance, I think was on the order of about 70 percent. So it's seven out of ten times.

And then I reviewed another 250 autopsies in total. I've -- again, I think I've reviewed probably on the order of almost 300 autopsies that I've looked at pentobarbital being one category and have found this persistence of this very high quantity is unexpected, you know, finding of pulmonary edema that is seen at autopsy

and that's the basis of my opinion.

Q And it's your opinion that that -- that pulmonary edema would be uncomfortable, extremely uncomfortable?

A Extremely uncomfortable.

Q And it's your opinion that the person experiencing pulmonary edema would actually be sensate to pain at the time?

A That's my opinion.

Q And do you have any --

THE COURT: What was that last word that you used?

MS. MORRIS: Sensate to pain at the time, Your Honor.

BY MS. MORRIS:

Q And it's also your opinion that pulmonary edema cannot happen after you are dead?

A Not to the degree that we're seeing it in these autopsies, no.

THE COURT: I'm sorry, I'm not hearing you good. What was the last question?

MS. MORRIS: It's his opinion that pulmonary edema cannot happen after you are dead.

THE COURT: Okay.

THE WITNESS: So you're saying where the lungs

were pristine then you die, then you wait, then you do an autopsy, and then you find pulmonary edema. Then if you did the autopsy at the moment of death, that there would be no pulmonary edema. Is that what you're asking me?

BY MS. MORRIS:

Q I'm asking you, you stated as a fact that pulmonary edema cannot happen after a person is dead.

A If a person dies and the lungs are undamaged, and then pulmonary edema does not happen after -- to any degree -- there is some shifting of fluid that can happen over periods of time as the body decays, but in the immediate period there -- it's not an immediate postmortem finding of pulmonary edema to the degree that we're seeing in these autopsies.

Q So it's your opinion that over time from the time of death to the time of autopsy, the more time that passes more fluid cannot enter the lungs?

A There are -- you know, generally, an autopsy is done either within hours or maybe a couple of days. At least as I've observed it in the, you know, in the way the state is doing it, and so in that period of time, it's my opinion, not just mine but the -- I think, you know, the medical position, that a significant amount of pulmonary edema is not the consequence of a -- of just

postmortem, you know, of the passage of time in the postmortem period that wasn't present, you know, at the time of death.

Q And do you have, other than your opinion, are there any articles, any research, any studies that you've reviewed to come to that conclusion?

A Yes.

Q And those articles support that opinion?

A Yes. Yes.

Q Is there a reason you did not cite those articles in your report?

A I wasn't asked of that. That wasn't asked of me.

Q I want to go back to the sodium thiopental and pentobarbital. You mentioned that you used sodium thiopental thousands of times. Does sodium thiopental cause unconsciousness?

A I mean, think the term conscious and unconscious are kind of problematic terms like when you said sleep. I think that there is an altered state, you know, but it's more complicated than these terms I think describe. There is a kind of altered state of awareness that sodium thiopental can cause that's pretty short lived once injected if it's part of an anesthetic.

So it's because it kind of rapidly causes this kind of altered state of awareness, you know, that it is -- that it's useful in the beginning of an anesthetic.

Q How short lived would that period of I guess unconsciousness is the word I would use --

A Yes.

Q -- but the period of altered state?

A I mean, it's probably on the order of minutes. Five, ten minutes and then a person would begin to, you know, regain their -- again, now, just for the purposes of this conversation I'm going to use the term awake, but it's not that -- but they'll begin to return to their former state, you know, of awareness within a matter of a few minutes.

There are caveats too. It depends on other kind of -- other issues but, you know, in the aggregate it's probably a few minutes.

Q And does pentobarbital act the same way as far as the temporary period of altered state?

A Well, remember, you're using a much larger dose of pentobarbital but --

Q In the clinical setting, the same setting as sodium thiopental.

A Well, I would say that pentobarbital, you know, would act similarly if it was

used similarly in a clinical situation, you know, likely there would be some -- like the drug actually has what's called an alpha and beta elimination. So the alpha elimination, which is the first, which is why people regain consciousness rapidly is because the drug is redistributed it's called.

And then there's a secondary thing that can go on for many hours before the drug is actually cleared from the body. But barbiturates, you know, have this kind of rapid alpha elimination that creates this kind of wakefulness that can occur pretty quickly.

Q Okay. So in the period of altered state, or as some would say unconsciousness, I think you said could be -- is short lived, but I think short lived you said could be 15 to 20 minutes.

A No, I didn't say that. I said a few minutes.

Q A few minutes?

A Yeah. Yeah.

Q Okay.

THE COURT: You're talking about pentobarbital?

MS. MORRIS: Yes, Your Honor.

THE WITNESS: Yeah.

BY MS. MORRIS:

Q So short lived, a few minutes. So in that few minutes would the -- in a clinical setting, in that few minutes, would the patient be sensate to pain?

A So when you say patient now, we're not talking about prisoner, right? We're talking about patients?

Q In a clinical setting.

A Okay. I mean, what's -- you know, not only are barbiturates not analgesic, that's the technical term, they actually can be thought of as antanalgesic, it means that they actually can make pain worse. So they're never used as pain relieving medications in any dose in any circumstance.

Q Okay. So they would not be used to relieve pain --

A Never.

Q -- but as far as rendering someone unconscious to where they don't know what's going on? They're in an altered state, I think as you called it, for minutes?

A At the beginning of an anesthetic is called -- anesthetics have three components, induction, maintenance, and emergence. So this is the induction portion, that's what barbiturates are used for to kind of

help you. And certain kind of things are done. Plus, the pentobarbital actually we don't use, plus the sodium thiopental is combined with other medications that are in fact analgesic. That's how we would -- you know, that's how an anesthetic would be -- would be done.

Q And that's in the smaller -- the fraction of what the state uses?

A Yes.

Q So would the altered state last longer with a larger dose?

A Well, what's happening is that in an anesthetic, you know, you're doing many things at the same time. So you're -- you may then initiate the maintenance anesthetic, which is going to start at the -- you're virtually in a very short period of time after the pen -- or the sodium thiopental is injected, it might be a vapor that begins -- you know, that a patient is inhaling. That period at the beginning of an anesthetic, we place something called an endotracheal tube. There's a tube that goes into the mouth and beyond the vocal cords and it's connected to a mechanical ventilator, so there's a lot of things that are happening kind of at the same time.

But the pentobarbital is just a way of kind of, you know, creating this sort of state of obtundation

because starting out with other kinds of anesthetic agents if we didn't use the pentobarbital can, you know, can cause other kinds of adverse things. The gas itself can be unpleasant to breathe. So the pentobarbital, you know, combined with -- again, it would be combined with an opioid, with a benzodiazepine, with a local anesthetic, because a lot of other things are going to be mixed all at the same time. All of that is present.

But the pentobarbital or the sodium thiopental is there for, you know, the expectation is that it's going to be providing me something, you know, for just a few minutes at the beginning.

Q And during that few minutes, you mentioned a tube --

A Yes.

Q I guess a breathing tube?

A Right.

Q During that few minutes is that when that breathing tube would be placed?

A Yes.

Q And during that few minutes, would the patient feel that tube enter their -- I guess does it go into their trachea you said?

A Their trachea. Well, we combine -- we use pain relieving medications that then block the

sensation of the tube going in. Those pain relieving medications may not cause the kind of, you know, altered state that we're trying to create as easily. So when the two are mixed, you get both the pain relieving and then the kind of altered state that the -- you know, that the -- that the barbiturate is intended to create.

Q Okay. So would you agree that placing a tube into someone's trachea during that few minutes of altered state would be similar to also, I think you said, choking on a drink of water going down the wrong --

A Well, it's -- you know, it is and that's why we add medications that block that -- that uncomfortable sensation of something being introduced into the trachea.

Q Okay. I'd like to move on to thrombocytosis. I think you said that thrombocytosis meant more than 450,000 in the platelet count?

A Correct.

Q Did you review Ms. Pike's medical records in this case?

A I did.

Q And are you aware of her most recent platelet count?

A I mean, I looked at a lot of

information. So maybe you can just tell me the number that you're asking me about or the time. I don't have it in front of me. If you want to give me a document, I'm happy to look at it.

Q I can.

THE COURT: Let me ask you, Doctor, did you have an opportunity --

THE WITNESS: Yeah, I looked at this. You know, I'm -- I looked at the fluctuations in platelet count, yes.

THE COURT: Doctor, I always counsel my people not to answer the question before the question has been finished. What I was about to ask you is have you had the opportunity to look at the expert reports on the other side of this case?

THE WITNESS: Yes.

THE COURT: So you've looked at Dr. -- help me out here, is it Antongnini?

THE WITNESS: Well, I think it's Antongini.

THE COURT: Your name is easy.

THE WITNESS: Thank you.

MS. MORRIS: Your Honor, he's not looked at the --

THE WITNESS: No, I guess I've not seen that. Antongnini, no.

THE COURT: Okay.
THE WITNESS: No.
MS. MORRIS: May I approach, Your Honor?
THE COURT: Sure. So I've got experts that don't know what each other is going to say?
MS. MORRIS: That's what happens when it's --
THE COURT: That's not my custom and --
MS. MORRIS: -- time frame.
THE COURT: -- my practice.
MR. AYERS: Not for ours, Your Honor.
THE COURT: Before we go any further, Counselor, can you help me out here?
MS. MORRIS: Yes, Your Honor.
THE COURT: I believe we marked something Exhibit 12 that the court reporter hasn't seen; is that correct, ma'am?
MS. MORRIS: I think that was the autopsy report of Harold Wayne Nichols.
THE COURT: Do you still have that on your desk with you?
THE WITNESS: Yes. Yes, I do.
THE COURT: Could you hand that to my bailiff. If you could give that to the court reporter. I'm just taking care of some business. We'll mark that Exhibit 12.

MS. MORRIS: I'm going to figure out how to share my screen here, Your Honor.

THE COURT: Do I really have a case where the experts don't know what the other expert's going to say?

MS. MORRIS: Apparently so, Your Honor. We did share expert reports.

THE COURT: Okay.

MS. MORRIS: But it was a very expedited timeline.

THE COURT: I understand. I understand.

BY MS. MORRIS:

Q Okay. I've handed you a portion of Ms. Pike's medical records. Were these within the records that you were able to review?

A I believe so. I don't see a date on this, so I'm not sure. This is one single time and I don't know the date of this.

Q So if you look at the -- towards the bottom before the -- where it says order result --

A Oh, I see.

Q -- a line going across. It's highlighted on my screen. It's got document creation date.

A Is that the date that this blood was drawn?

Q It appears so.

A So this is August 5th; is that right? No. I'm sorry.

THE COURT: The small print looks like to me May 8th.

THE WITNESS: So May 8th.

BY MS. MORRIS:

Q May 8th.

A So I've got to -- I'm from Canada, I get that backwards sometimes. I'm sorry. So May 8th. Okay. May 8th. Yeah.

Q So, again, I think you said that thrombocytosis means more than 450,000 --

A Correct.

Q -- in a platelet count?

A Correct.

Q Could you review this portion of Ms. Pike's medical records and identify on May 8th, 2026, just a few months ago --

A Yes.

Q -- what her platelet count was?

A It says 452,000.

Q So would you agree that that is just above abnormal?

A It's abnormal. So it's not just

above, it's above. It's abnormal.

Q Okay.

MS. MORRIS: Your Honor, I would like to admit this as Exhibit 13.

THE COURT: Is it okay if I staple these two pages together? Let's see, we're going to mark this Exhibit 13.

(Exhibit No. 13 - entered into evidence)

MS. MORRIS: May I approach, Your Honor?

THE COURT: Sure.

MS. MORRIS: I'm sorry, I forgot to --

THE COURT: Sure.

BY MS. MORRIS:

Q Okay. So I've handed you another portion of Ms. Pike's medical records. Did you -- do you remember having the chance to review this before your testimony today?

A I mean, I believe I reviewed this and many other -- like not just these two, but many other examples of her platelet count.

Q Okay.

A Which fluctuated.

Q Now, this is her second most recent platelet count on -- could you state what her platelet count was on November 21st, 2025?

A On November 21st, this says 433,000.

Q So based on that number, less than a year ago, you would not diagnose her with thrombocytosis?

A You wouldn't make a diagnosis of thrombocytosis based on a single -- I mean, we know she has this diagnosis. She's had it investigated by hematologists. She has the genetic defect. She has a diagnosis, you know, of thrombocytosis. That's her diagnosis.

There could be periods where the platelet count fluctuates, but that's her -- this does not mean that she does not have this diagnosis. She has essential thrombocytosis. That's the diagnosis that she has.

Q What would you define as essential thrombocytosis?

A Well, it's not what I would define, it's what the definition is. You know, it's a combination of a platelet count and it is various genetic findings, you know, that then go along to make this diagnosis. Sometimes it's a bone marrow that's taken and other sorts of things, but that's her formal diagnosis, you know, that she has.

Q But based on her current most recent platelet count results, would you agree that her thrombocytosis is not as extreme as it was in 2017 when I

believe her platelet counts were one million?

A Yeah. Well, I mean, I think you'd just have to draw it again. Just draw it today and see what it is today. You know, I don't know what it is today.

Q And if it were similar today to what it was in November or just lower than what it was a few months ago in May, would you continue -- would you -- let me rephrase that.

If we drew -- if her blood was drawn today, and it was similar to the counts in November, and lower, just a tad bit lower than her counts in May just a few months ago, would your testimony be the same regarding the risks posed to her due to thrombocytosis with lethal injection?

A I think, you know, just to be clear, this number of 433 is a high number. So, you know, we kind of draw an arbitrary line at 450, but most people are like 200, 250, 300. Like this is still a high number. And we know -- if I had never met her, and someone handed me this, I would say, oh, that's a high platelet count, even 433.

So I think that my opinion would not change. I think she has this diagnosis. It's a formal diagnosis. Her condition is not curable. It can be managed

sometimes. But, you know, I wouldn't change my opinion, this one single number from November that's -- that she's suddenly been cured.

THE COURT: You've given multiple opinions, which opinion would you not change?

THE WITNESS: I wouldn't change the fact that her risks is greater and that she carries this diagnosis of essential thrombocytosis.

BY MS. MORRIS:

Q So you would not agree that the lower the platelet count, the less the risk of clotting?

A I don't understand your question. How low? What are you asking me?

THE COURT: I think she's asking you the person with a one million platelet count versus a person with 433 platelet count, which one is going to have the greater risk of problem with the lethal injection?

THE WITNESS: Yeah. I think that in both instances, there will be significant risks. That's my opinion, you know, that -- it's not really easily quantifiable exactly because a platelet count of 433,000 is still high. And so I don't think that that is -- means that if she has that number -- if that was her platelet count today and she was executed today, that it would be somehow protective.

I think she has this diagnosis and I think that her platelet count always generally is running high when I've looked at it. So it's, you know, reaching 450 and 500,000 every time I've looked at it. There's more than just these two -- two things that we've seen. So I think that's my opinion that her thrombocytosis is persistent and is material and presents this -- this particular risk to her.

BY MS. MORRIS:

Q There's been substantial talk about a central line in this case. Due to Ms. Pike's thrombocytosis and your opinion of her risk of clotting, do you believe that a central line would heighten those risks of clotting?

A I don't understand your question.

Q It's your testimony that intravenous access for purposes of lethal injection poses risks of clotting, dangerous risks of clotting. Would a central line pose the same risks?

A A central line, you know, would pose, you know, could pose a technical risk, you know, that it couldn't be placed. And if it was placed, it could still have, you know, central lines can become clotted like peripheral IVs as well. So there's a, you know, there's -- a central line might be less likely in a

larger vein because that's where a central line is placed. But the risk would still be there.

Q Would thrombocytosis prevent intravenous access?

A You mean -- if a vein has a thrombose in it, then you can't place a catheter in it. If that's what you're asking me.

Q No. If someone is diagnosed with thrombocytosis, just that diagnosis in general and a high platelet count, in your opinion would that prevent intravenous access?

A No. Intravenous may be started, it just may not last long or it also may be difficult to find a vein, you know, that's patent and able to accommodate an intravenous catheter.

Q You've testified on behalf of death row inmates challenging lethal injection protocols in numerous cases across multiple states over the past decade or more, haven't you?

A Yes.

Q And how many states have you testified against the death penalty?

A I mean, I've -- I've been to or visited death row in nine states.

Q And you've been doing anti-death

penalty work for 14 years now?

A I've been doing anti-medicalization of punishment work for 14 years now.

Q And you've participated -- I think your CV lists multiple podcasts, multiple papers, studies against the death penalty and lethal injection in general?

A Well, I'm against lethal injection and, you know, I'm not -- the death penalty which, of course, involves lethal injection, that, I'm against.

Q Would you say that that would influence your opinion here today in any way?

A No. Well, sorry, I don't understand your question.

Q Would your view of lethal injection, your personal view of lethal injection, influence your scientific or expert testimony here today?

A I have no personal view of lethal injection. My view of it is based upon, you know, what I've learned about lethal injection and what it does and doesn't do.

Q Have you -- you've stated that prisons are impersonating medical providers when they perform --

A Not prisons, but the act of

execution is an impersonation of a medical act, yes.

Q And would it be fair to say that no matter how lethal injection is achieved, no matter how execution by lethal injection is achieved, you would oppose --

A Yes.

Q -- that method?

A Well, I mean, I don't know how no matter what, I mean, I guess I'd have to evaluate these things on a case-by-case basis.

Q But there's no form of lethal injection that you agree is humane or not cruel?

A In the methods of lethal injection that I've so far encountered, I've not encountered one that I thought -- I mean, I think humane is an odd word. I don't know what that means here. I mean, if you mean humane, you mean human like, which is what humane means. We usually say that when we've done something terrible. So if that's what we mean, I was only human, then I suppose, yes.

But it's not a requirement that it be humane, it just is a requirement that it be not cruel. So I think in the methods of execution that I have reviewed, I think that there's cruelty is -- you know, it's a feature, it's not a glitch.

Q But that would be your opinion no matter the method of lethal injection, no matter --

A What I've encountered so far.

MS. MORRIS: No further questions, Your Honor.

MS. BALES: Your Honor, may I have just a moment?

THE COURT: Sure. Did we mark Exhibit 14, Madam Court Reporter?

MS. MORRIS: That was my fault, Your Honor, I did not move for it to be admitted.

THE COURT: Let's mark this Exhibit 14. Mr. Bailiff.

(Exhibit No. 14 - entered into evidence)

REDIRECT EXAMINATION

BY MS. BALES:

Q Just briefly. Opposing counsel showed you some more recent lab work that showed the platelet count was not as high.

A Yes.

Q But she still has essential thrombocytosis?

A That's correct.

Q Would you expect the platelet count to be lower if she's receiving aspirin?

A It might be. I mean essential

thrombocytosis is not curable.

Q Right.

A So there are things that can be done. Aspirin is given to patients which can have an impact on their clotting tendency. And so that's why aspirin is given. But it doesn't necessarily drop the platelet number. It just has an impact on the way platelets work.

Q And I believe you testified that essential thrombocytosis, there's a genetic defect?

A There is.

Q And the more recent platelet counts don't cure that genetic defect --

A They don't.

Q -- thrombocytosis?

A No, they don't.

MS. BALES: Your Honor, no further questions.

THE COURT: Okay. This is a non-jury matter and I've got a few questions for the doctor.

First of all, Doctor, did I read that you are a lawyer?

THE WITNESS: I have a master's of law.

THE COURT: Okay. And is it my understanding that you have not read Dr. Antongnini's report?

THE WITNESS: I don't know. I'm not sure

which report it is. So I don't know the answer to that.

THE COURT: Let me ask you, just in prepping for this and trying to get familiar with the law, I read a number of cases that your name appears in that you've been involved in and some of those it appears that Dr. Antongnini is -- how many times have you been in the same case with him?

THE WITNESS: A few times.

THE COURT: A few times? Are you all best buddies?

THE WITNESS: Oh, no.

THE COURT: Okay. So you've kind of got an idea of what he's going to say?

THE WITNESS: I've got an idea, yeah.

THE COURT: Okay. All right. And you happened to be involved in one of the most famous cases this Bucklew vs. --

THE WITNESS: Oh, yes.

THE COURT: How do you pronounce that last name?

THE WITNESS: Precythe. Bucklew vs. --

THE COURT: Can I just call it Bucklew?

THE WITNESS: Sure. Yes. Whatever you like.

THE COURT: You know, I guess after you testify in these cases, you read the Opinions from the

Courts?

THE WITNESS: I do.

THE COURT: And you're familiar with the fact that in that case they said the most relevant Eighth Amendment question is how long the inmate will be capable of feeling pain.

THE WITNESS: Are you talking about Bucklew? Yeah, in Bucklew you're saying or just --

THE COURT: That's the U.S. Supreme Court, the most relevant question --

THE WITNESS: Right. Yeah.

THE COURT: -- is how long the inmate is capable of feeling pain.

THE WITNESS: Yes. I'll -- okay.

THE COURT: I mean, would it surprise you to find out that Antongnini, or whatever his name is --

THE WITNESS: Antongnini.

THE COURT: -- is going to say that after this dose that's entered that at most the person is capable of feeling pain for 20 to 30 seconds? Would that surprise you that that's what his testimony is going to be?

THE WITNESS: I would not be surprised if he claimed that.

THE COURT: Okay. Are you familiar with the methodology that he uses to come up with that?

THE WITNESS: Likely. You know, I mean, I'd have to see --

THE COURT: Likely? This is your opportunity to refute --

THE WITNESS: Yeah.

THE COURT: -- his methodology.

THE WITNESS: Yeah. I think that that's -- I think that that's -- I mean, I can -- I think that's an important observation and comment that I would like to comment on his -- you know, if that's what he claims, I have an answer to that. Yeah.

THE COURT: If it's the most important thing that the Eighth Amendment has for the Court to consider, why is there no mention of that in your report?

THE WITNESS: It wasn't -- it wasn't asked of me, you know, it wasn't -- I mean, to comment on how long the pain would be present.

THE COURT: So even though you know it's the most important consideration for the Court, you don't give me a time frame that a person is going to be capable of feeling pain?

THE WITNESS: Well, I can answer you now, if you want.

THE COURT: Wouldn't that be outside your report?

THE WITNESS: You know --

THE COURT: Since you didn't put it in your report, nobody has a chance to test your methodology for coming up with that.

THE WITNESS: You know, I don't know how to answer you. Like, I mean, I can --

THE COURT: Well, why would you avoid --

THE WITNESS: Yeah.

THE COURT: -- the most important thing the Court needs to know?

MS. BALES: Your Honor, if I could refresh Dr. Zivot's recollection with his April --

THE COURT: Okay. Sure.

MS. BALES: -- 8th report.

THE WITNESS: Okay. Yeah.

THE COURT: If you want to ask him the questions, I will give way to you.

MS. BALES: I think he might still need his --

THE WITNESS: I may have commented on that, but I just -- I can't -- let me see.

REDIRECT EXAMINATION

BY MS. BALES:

Q If you could look at paragraph seven?

A Okay. Okay. Yes. I'm sorry. My

mistake. I did actually address that. I just did not recall it. It's in my report.

THE COURT: Is this your addendum or the original?

THE WITNESS: The addendum.

THE COURT: The original report or the addendum?

THE WITNESS: The addendum.

THE COURT: The addendum. Let's see the addendum. "Death from pentobarbital injection is not instantaneous."

THE WITNESS: Yes.

THE COURT: That's your --

THE WITNESS: Yes. It's not instantaneous.

THE COURT: And that's your time?

THE WITNESS: Well --

THE COURT: To where the inmate cannot feel any pain?

THE WITNESS: No, I think that what we know is that -- two things, we know that even when people are given anesthetics, like proper anesthetics in an operating room where all these things are measured, that a percentage of patients recall what happens to them. They know it's happening.

I've also seen on many occasions frequently

that patients react to pain even under deep anesthesia. And I also know that this idea about the number of seconds of pain is important because really the question is, how long can a reasonable person endure terrible pain reasonably.

And the example here I say, if you put your finger in a flame and count to 30, 30 seconds if Dr. Antongnini -- or 20 if Dr. Antongnini says 20, 20 seconds is an awfully long time to be burned alive.

I don't know, and neither does he, how long it exactly would be a person, you know, from the beginning of lethal injection to time of death could be ten or 15 minutes.

THE COURT: Well, we're not talking about time of death. We're talking about the time -- and we're not talking -- we're talking about the time they can feel pain.

THE WITNESS: So how long --

THE COURT: We all know that people are going to die later.

THE WITNESS: Yes.

THE COURT: You've talked about the time of death and you've talked about the person feeling pain, but you've given me no duration.

THE WITNESS: Well --

THE COURT: Are you telling me you don't know the duration?

THE WITNESS: No one knows the duration. It's not knowable. I can surmise it, but it's not knowable.

THE COURT: So when you say a person is drowning, you don't know if they're feeling that for one second or two seconds?

THE WITNESS: Well, I don't think it's one --

THE COURT: Or ten seconds.

THE WITNESS: I think it's longer than that. That's my professional opinion about this.

THE COURT: But you're not going to give me a time frame or a methodology for how you're doing that?

THE WITNESS: Well, it's based upon the way the drug works. What I've seen in thousands of cases of anesthesia and thousands of cases of pulmonary edema and my opinion -- and my understanding of the pentobarbital or drugs of that class work, I think it could be minutes. It won't be one second. It could be minutes. Or a minute.

THE COURT: So you said pulmonary edema is excruciatingly painful?

THE WITNESS: Yes.

THE COURT: But if you don't feel it, it can't be painful.

THE WITNESS: It happens right at the beginning. It starts to happen at the beginning. So the beginning is when you're going to have the highest chance of feeling it. As time progresses, then you may feel -- you know, then your capacity to feel it will be less.

THE COURT: So the relevant Eighth Amendment question is how long the inmate will be capable of feeling pain. They also talk about duration and intensity. They talk about the intensity part pretty hard. So you didn't put in here an opinion about how long that would be other than it's not instantaneous.

THE WITNESS: I didn't specify a number of seconds, no, but it's not instantaneous, if that's what you mean. The -- I said the death is not instantaneous.

THE COURT: I mean, I'm trying to find out which expert to believe and the critical question is not whether someone is still alive after being injected, it's not whether they're still breathing after they're being injected, it's whether they're capable of feeling pain. And when does that happen because we're trying to do this in the most humane way possible.

And I have to compare the pain that might be suffered versus the pain that might be suffered when someone is hung by the neck. And I have to figure out -- those are the challenges that I have. And it was a red

flag when I saw a report that didn't tell me about the duration of it, and this is your opportunity to explain why you didn't put it in your report when you knew that that was going to be a critical issue.

THE WITNESS: You know, partly I'm guided by, you know, by the attorneys who hire me. And I try to answer the questions that's being put to me. I'm happy to answer that question for you now, sir, if that would --

THE COURT: Yeah. Go ahead. Why didn't you put it in your report? You're a lawyer on the most famous case in the country where the U.S. Supreme Court said the duration is -- that capable of feeling pain is one of the most important -- maybe I'm over exaggerating. Maybe --

THE WITNESS: I'd have to look at -- I'd have to read it also. Like I think that also that, you know, the majority opinion there misunderstood my own report. So I have, you know, some concerns about the --

THE COURT: Well, I know you have --

THE WITNESS: Yeah.

THE COURT: We're not going to talk about it. But I just -- yeah, why didn't you put a duration in your report?

THE WITNESS: It just didn't come up. I mean,

again, I'm happy to address it now.

THE COURT: Well, you sent the first report and you said "It's false to claim that brief pain is not material." And the second report, "It's false to claim that brief pain is not material." And I read that I said, is he telling me this pain is going to be brief?

And then in your first report you said that it's like putting your hands over a flame for 60 seconds. And in your second report, it changed to 30 seconds. And I know those are just examples but --

THE WITNESS: I'm just trying to -- the -- this question about how long is obviously critical and I think it's been debated, you know, between the experts. And so -- and so my contention, you know, is that the amount of time that will be there will be enough that it could be experienced as cruel and painful. That's my -- that's my medical opinion. My opinion is to how long --

THE COURT: No matter how short it is, it's going to be of enough severity --

THE WITNESS: Yes.

THE COURT: -- to be --

THE WITNESS: Yes.

THE COURT: Okay. All right. So why didn't you discuss that in either one of your reports?

THE WITNESS: I don't have an answer for you.

THE COURT: Okay.

THE WITNESS: Yeah.

THE COURT: All right. Do you all have any other questions?

MS. BALES: Your Honor, I do.

REDIRECT EXAMINATION

BY MS. BALES:

Q Dr. Zivot, you said that the answer to that is unknowable?

A The precise number of seconds is just unknowable.

Q Why is it unknowable?

A Well, there's -- I mean, you know, first of all, once a person is dead, you can't ask them whether they experienced their own death as cruel. So we didn't know any of this until we started looking at autopsies. That was a surprising finding. We did not know this.

You know, for a long time, lethal injection looked kind of okay and it was designed to look kind of okay. But it's not okay. It's not okay. And that's, you know, hundreds of autopsies in my experience of this has convinced me from physical evidence and from my understanding of the pharmacology of these drugs, it's not okay. It doesn't do what it's claimed to do. It

doesn't create a painless death. It doesn't create a humane death. It creates a cruel death. And I think that that's by design. I'm not suggesting it was intended, but that's the finding. That's my position. That's always been my position.

And I think that even if it's short, even if we could concede that it's some short period of time, that what we know about pain, and as an anesthesiologist, I'm an expert in pain relief, I know that even -- and also I would say that the easiest pain to bear is someone else's.

So I think that the amount of pain is very severe. And the timing of it is long enough that the brain can conceive of it. That it can be experienced. That's my contention.

Q Dr. Zivot --

THE COURT: I think I understand that, but I want to make sure I understand, you have no estimate on the duration?

THE WITNESS: Only within the time, you know, of some time, you know, within the period of time it takes from when it begins to when a person dies. That's all I can say.

BY MS. BALES:

Q Dr. Zivot, you testified on direct

that one basis for thinking it's painful is witness observations of inmates who have expressed profound discomfort or have moved around or --

A Yes. Yes.

Q Is that something that you consider when you're evaluating --

A I think that's material. You know, the way that we gauge pain, you know, there is no pain meter. There's no piece of equipment we can put on someone. And what it requires, of course, is our empathy. We have to look at it. And when we -- you know, generally we can -- we know what pain is. We know what it looks like. I see this all the time. And so it's -- you know, it's the empathic nature of people that allows me to watch a person be executed and from my observation of how they're -- what they're saying and what they're doing and how they're moving, you know, one can surmise that there's terrible pain there. I've never heard anyone say, "This is great," you know, so.

MS. BALES: Your Honor, I have no further questions.

THE COURT: If it will make you feel better, I'm going to put Dr. Antongnini, I'm going to grill him on how he came up with his time frame too and ask him about his methodology in arriving his figures.

THE WITNESS: I'm happy to answer any questions.

THE COURT: The only thing is he won't be able to talk about your methodology.

THE WITNESS: Fair.

THE COURT: You can step down.

THE WITNESS: Thank you, sir.

(Whereupon, the witness was excused.)

THE COURT: Do you all want to stop here for the evening?

MR. IHNEN: Your Honor, our next witnesses won't be available until tomorrow morning.

THE COURT: That's good news. I thought you were about to say we want to take another witness.

Why don't we adjourn court for the day and resume at 9:00?

MR. IHNEN: Your Honor, when we were here last week, the clerk said that Judge Green might need the courtroom tomorrow. Is that --

THE COURT: He has graciously agreed to go somewhere else, but if you need more time, I can tell him to come back.

MR. IHNEN: No. 9:00 a.m. works. Thank you.

THE COURT: All right. We'll see you all at 9:00. We're adjourned for the day.

****

(END OF REQUESTED TRANSCRIPT OF EVIDENCE)

C E R T I F I C A T E

STATE OF TENNESSEE:

COUNTY OF KNOX:

I, Lisa A. Jones, Official Court Reporter for the Sixth Judicial District of the State of Tennessee, do hereby certify that I transcribed from the audio recording the above proceedings and that the foregoing pages constitute a true and accurate record, to the best of my knowledge and ability, of the proceedings had and evidence introduced in the captioned cause in the Criminal Court for Knox County, Tennessee, Division III, on the 11th day of August, 2026.

I further certify that I am not an attorney or counsel for any of the parties, nor a relative or employee of any attorney or counsel connected with the action, nor financially interested in the action.

Witness my hand this 15th day of August, 2026.

Lisa A. Jones
Official Court Reporter
State of Tennessee

CERTIFICATE OF THE COURT

This was all the evidence introduced and proceedings had relevant to questions raised on appeal on this cause which is signed, approved, and ordered to be made a part of the record by the Court.

Contained with the record are the following exhibits: Hearing Exhibit 1 through 14.

_____, 2026.

_____

JUDGE

IN THE SUPREME COURT OF TENNESSEE
AT NASHVILLE

STATE OF TENNESSEE	)	Criminal Court for Knox County
	)	No. 58183A
Respondent,	)	
	)	No. M2020-01156-SC-DPE-DD
VS.	)	
	)	Special Master W. Mark Ward
CHRISTA GAIL PIKE	)	
	)	
Movant.	)	

EXPEDITED TRANSCRIPT OF THE EVIDENCE

Volume 4

(Proceedings on August 12, 2026)

THE HONORABLE W. MARK WARD, PRESIDING JUDGE

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(Proceedings on August 12, 2026)
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(This cause came on to be heard further on the 12th day of August, 2026, before the Honorable W. Mark Ward, Judge, Special Master, holding the Criminal Court for Knox County, Division III, at Knoxville, Tennessee, when the following proceedings were had:)

THE COURT: Give me just a minute.

I'm gonna--want to warn you attorneys, in fairness to you, that I'm kind of thinking at the end of all this evidence that I'm gonna ask each side to tell me your initial thoughts about what the findings of fact and conclusions of law should be on each of these five questions, and I didn't want to spring that on you in--like right after the proof closed, and I understand that both sides are gonna submit proposed findings of fact and conclusions of law, obviously gonna be much more detailed, but we have to move pretty hastily in this matter.

So I thought it might be helpful for the Court to get its thoughts together and for the parties to start to get their thoughts together and maybe just some kind of brief presentation about where you think we are.

So I just wanted to warn y'all that I was hoping you'd be willing to do that for me, and it's not real formal. It's not a closing argument. You're not bound to it. You're gonna be submitting formal proposed findings and--later, and so you want to divide up the questions

among the team members or however you want to do it, whatever would make it easy for you, but I think that would be helpful to everybody involved if we took some time to do that at the--at the conclusion of that--the proof.

Which is gonna be when? Anybody know?

MR. AYERS: Well, your Honor, we've been talking to our experts with the hope that we might be able to get everybody in today if we go late, but if not, then it'd be likely tomorrow morning.

THE COURT: Okay. What--I was just curious, and since I've imposed a new duty on you, if you want some time in between that, just let me know. Maybe--maybe that's the one thing that y'all can agree on, is how much time between the close of the proof and making your presentations. We'll just see where we are.

So are we ready to get back with the witnesses here?

MR. FERRELL: Yes. Excuse me, your Honor. I was just kind of waiting to see if Ms. Pike would appear yet.

THE COURT: Oh, yeah.

MR. FERRELL: As soon as she's going to appear--

THE COURT: We'll make sure--is there something I need to do on this screen, click?

There you go.

Ms. Pike, can you hear what's going on?

THE DEFENDANT: Yes, I can. Thank you.

THE COURT: Thank you, ma'am.

All right. Are you ready to call your next witness?

MR. FERRELL: We are. Your Honor, the movant would call Dr. Bethany Brand.

THE COURT: All right. Doctor, would you raise your right hand, please.

(Witness was sworn.)

THE COURT: All right. Thank you.

BETHANY BRAND, Ph.D., called as a witness, being duly sworn, was examined and testified via video as follows:

DIRECT EXAMINATION

BY MR. FERRELL:

Q Good morning, Dr. Brand.

A Good morning.

Q And just to let you know, the camera's up there. So if I'm looking there, I'm kind of looking at you, but I see you over here. So I'll probably turn sideways at some point.

A Okay.

Q Could you, please, state your name for the record and spell it for the record as well.

A Yes. Bethany Brand. B-E-T-H-A-N-Y; Brand,

B-R-A-N-D.

Q Okay. And what is your occupation and your place of employment?

A I'm a clinical psychologist, and I work in my private practice.

Q Are you--how long have you been a licensed clinical psychologist?

A Since 1993.

Q And are you also a professor somewhere?

A Yes, I'm a Professor Emerit at Towson University.

Q Thank you. And what was your or is your specific role at Towson?

A I work there as a professor, first as an assistant, then associate, then full professor for a total of 25 years. I'm now retired from teaching, but I continue to do research at the university.

Q Okay. Thank you. And did you teach or practice before you were at Towson?

A Yes, I did. I did a post-doctoral fellowship in trauma-related disorders, and once I got licensed, I stayed on at that psychiatric hospital working on a trauma unit for several more years for a total of about five years.

Q Thank you. And have you had any additional training or fellowships?

A Yes. I did a post-doctoral fellowship at that

hospital called Sheppard Pratt Hospital. They had a trauma disorders unit. I also did a research post-doctoral fellowship at a unit that Yale sponsored.

Q Okay. And have you ever received any awards for your work in clinical psychology?

A Yes, I have.

Q Could you tell us about those awards briefly?

A Yes. There's a number of them, but the ones that I'm most proud of is getting a lifetime leader--a lifetime award for my leadership in research in trauma-related disorders and in clinical work from the psycho--American Psychological Association and a trauma division of that APA, American Psychological Association.

Q And have you ever testified in court before?

A Yes, I have.

Q And have you been certified as an expert when you testified in court, an expert in clinical psychology?

A Yes, every time.

MR. FERRELL: Okay. Your Honor, I'm going to distribute a document to the state, and may I approach for you?

THE COURT: Sure.

BY MR. FERRELL:

Q Dr. Brand, did you submit to the--to me a copy of your curriculum vitae?

A I did.
Q And do you have that in front of your right now?
A I see on my computer screen a list of things, including my CV, but I don't see it actually up.
Q I think it's coming.
A Okay. Yes, that's my CV.
Q And does it accurately catalogue your experience and training in clinical psychology?
A Yes, it does.
MR. FERRELL: Your Honor, I move to admit Dr. Brand's CV.
THE COURT: All right. Any objection?
MR. WICKENHEISER: No, your Honor.
THE COURT: All right. I left my--I left my document list back in my office. Is that gonna be Exhibit 9, from your calculations--15?
MR. FERRELL: Fifteen, and I think I forgot to give the court reporter...
THE COURT: Thank you. We'll mark that Exhibit 15.
(Exhibit 15, received in evidence.)
MR. FERRELL: Thank you, your Honor.
And I move to qualify Dr. Brand as an expert to testify in her expertise in clinical psychology.
THE COURT: Does the state want to voir dire or

have any objection or--

MR. WICKENHEISER: Yes, your Honor. We do have a couple of objections, and I guess it's--

THE COURT: About her expertise?

MR. WICKENHEISER: Not--not necessarily about her expertise, your Honor. We would object to her testimony in--in whole, though. We don't think that it--it's relevant, and--and really for a couple of reasons.

The first is that the Supreme Court's order on this, you know, uses that language, given Ms. Pike's PTSD, and so we don't think that there really is a factual dispute about that. We think the Court is supposed to make that assumption. So we don't think that there's any facts that Dr. Brand would be able to bring in to--to the Court.

But to the extent that the Court does permit some of this testimony, looking through her report, the two addenda have kind of six sections in it, and four of them, I think, are--are clearly outside the scope of what we're supposed to consider here. So if the Court is to permit the testimony, we--we'd ask that it be limited to not touch on those issues, and I can go through the specific issues if--if the Court would like.

THE COURT: If you would, refer me to whatever report you're looking at and what--

MR. WICKENHEISER: Yes, sir.

THE COURT: --what paragraphs or whatever.

MR. WICKENHEISER: Yes, sir. So the first is Addendum No. 1 on page 5.

THE COURT: Let me ask this. Are you gonna have her testify from the subjects in Addendum 1 or Addendum 2?

MR. FERRELL: Both.

THE COURT: Okay. All right.

MR. WICKENHEISER: Thank you, your Honor.

So page No. 5 on Addendum 1, you'll notice, one of the titles is "Held down by men," and--and that largely deals with Dr. Brand's opinion regarding the extraction procedure, which I think this Court has already ruled is outside the scope of--of what is--is relevant for issue two, which is just the observation by men in RMSI, which we've all agreed is only going to occur for 24 hours. So I think that is outside that scope.

The second is--and the final three are all in Addendum No. 2 on, the first is, page 1, there under the section called "The possibility of being closely monitored by male guards while at DJRC." I think the Supreme Court's order on this is very clear that it's asking the Court to look into whether or not the observation at RMSI would be--would constitute an Eighth Amendment violation, not observation while she's at the Debra Johnson Rehabilitation Center. So we think that's outside the scope.

The next section is called "The possibility of attempted femoral venous access." That's dealing with a central line placed in the femor (sic). One, the protocol doesn't even call for that; and two, the central line is outside the scope of anything related to topic two. So we think that that's irrelevant.

And also the third one here, "The potential for a failed execution," I think the Court has only been tasked--

THE COURT: Where's the other one?

MR. WICKENHEISER: Oh, it's--it's the very next paragraph there, "The potential for a failed execution." In that I think Dr. Brand is giving her testimony about the psychological effects of if there's a failed execution, repeated attempts would be--would be significant because of Pike's alleged post-traumatic stress disorder. That, I think, is unrelated to observation--excuse me, your Honor--observation by male guards at RMSI, which is the specific task the Supreme Court asked the special master to look at.

So we would ask that those four topics not be addressed by Dr. Brand, if--if the Court is to permit any testimony by her.

THE COURT: What does the defense have to say--I called you the defense. You're not the defense. You're the offense.

MR. FERRELL: Right. We--we're the movant.

THE COURT: You're the movant.

MR. FERRELL: Sounds rather strange, but I think that's our actual title.

My first response is looking at question two, or issue two, the Supreme Court said given Ms. Pike's cited history of sexual assault and asserted diagnosis of PTSD--and opposing counsel just said "alleged" diagnosis of PTSD. I think that that--those words talk about a disputed fact, and maybe they're not going to dispute it, but I think it's something that the Supreme Court wants us--

THE COURT: Should I take a five-minute recess and find out if they're gonna agree before we take an hour in court to talk about something that the parties agree on?

MR. FERRELL: I think that the Supreme Court wants to hear about an asserted diagnosis, that they seem to have some sort of doubt about it; and therefore, the extent of that diagnosis and what caused it, I think, are pertinent for this Court to hear.

THE COURT: So even if they stipulate, you want to put on the proof?

MR. FERRELL: Yes.

THE COURT: Okay. All right...

MR. FERRELL: And--and, secondly, issue No. 4 talks about whether a proposed method of execution

significantly reduce a substantial risk of severe pain. I think that that calls into question is there a substantial risk of severe pain and what is that substantial risk of severe pain, and in this case, the psychological trauma that Ms. Pike would suffer due to her history of PTSD, due to her bipolar disorder is pertinent to the Court, the Supreme Court's analysis, of whether there's an Eighth Amendment violation.

So I think that we can be very concise on this. We're not going to spend a lot of time going over and over details, but I think we can touch on that because this is really our only opportunity to put in these facts. The state has asserted that some facts are true, and therefore, moot out this entire issue. They're arguing that before they've heard any of our facts. I think that we should be given the opportunity to introduce those facts, to prove those facts, and then your Honor can decide if they're proven or not, give his recommendations to the Supreme Court, and go from there. But I think that we should have the opportunity to present that evidence.

THE COURT: All right. I find myself, as I have throughout this proceeding, agreeing with both sides. Don't think this testimony is relevant, particularly the issue, question No. 1 and question No. 3, but I do believe that this is somewhat relevant or extremely relevant to

question No. 4. So I'm gonna hold you to your promise that you weren't gonna belabor the point, but the state is, I don't think, contesting that she has post-traumatic stress disorder. So, anyway, I'm gonna allow her to testify as an expert, and I'm gonna allow her to testify.

I don't see anything, at least in her final addendum that would be inappropriate for her to testify to under issue No. 4. So if there is something, I'm sure the state's gonna jump up and let me know, and I'll reevaluate this, but as far as I'm concerned, you may proceed.

MR. FERRELL: Thank you, your Honor.

BY MR. FERRELL:

Q Dr. Brand, what has been your involvement in Christa Pike's case?

A I was hired in 2021 to perform a psychological assessment as part of her clemency appeal, and so I did a full thorough psychological assessment and wrote a report and submitted it to you at that time.

Q And that report that the state referred to as well--

MR. FERRELL: I'll give them another copy.

And may I approach?

Patty, would you pull up the report.

BY MR. FERRELL:

Q Dr. Brand, is this a copy of the report you

prepared for the clemency petition?

A Yes, it is.

Q And are these opinions--do--does this report accurately chronicle your opinions that you expressed at the time you prepared this report?

A Yes, it does.

Q And are these opinions true to the--do you believe these opinions to be true to a reasonable degree of psychological certainty?

A I do.

MR. FERRELL: Your Honor, we would move that her original report from July 29th, 2023, be admitted as an exhibit in this case.

THE COURT: Any objections?

MR. WICKENHEISER: No, your Honor.

THE COURT: We'll mark that Exhibit 16.

(Exhibit 16, received in evidence.)

MR. FERRELL: And next I'm gonna pull up the--the two addendum report. I'll just go ahead and give both.

THE WITNESS: I'm sorry. I--I didn't catch if you asked me a question.

MR. FERRELL: No, I didn't. I was just going to--I was just informing the Court that I'm going to give everyone a copy of both of your addenda.

BY MR. FERRELL:

Q Dr. Brand, the document on the screen is entitled "Forensic Psychological Addendum." It's dated June 1st, 2026. Did you author that addendum?

A I did.

Q And do the opinions expressed in that addendum accurately reflect your opinions in this case?

A Yes, they do.

Q And do you swear that they are opinions you hold to a reasonable degree of psychological certainty?

A Yes.

MR. FERRELL: Your Honor, we move that that addendum, I'll call it "Addendum No. 1," that's dated June 1st, 2026, be admitted into evidence.

MR. WICKENHEISER: Your Honor, we would just ask that subject to our objection that we thought the one section in there was not relevant to--which I understand the Court has--has disagreed with.

THE COURT: That's the--

MR. FERRELL: That's the--

THE COURT: --the opinion about male correction officers?

MR. WICKENHEISER: Yes. With the extraction, "held down by men," referring to the extraction procedure, your Honor.

THE COURT: That--that's a subject for

cross-examination and a subject for you attempting to undermine an opinion if an opinion's based on facts that is not in evidence or contrary to the actual facts, then you can point that out, but if they want to put on documents that shows that their witnesses doesn't have the facts right, I'm gonna let them, whatever they want to do. So I guess what I'm saying is I don't think that's a valid objection.

We'll mark that Exhibit 17.

MR. FERRELL: Yes, thank you.

(Exhibit 17, received in evidence.)

MR. FERRELL: And next, Patty, would you pull up August 4th, 2026, Addendum No. 2.

Oh, it's--I'm sorry. It's there. I'm sorry.

BY MR. FERRELL:

Q Dr. Brand, do you see the addendum dated August 4th, 2026, in front of you?

A Yes.

Q And did you author that addendum?

A I did.

Q And do the opinions expressed in that addendum--do you affirm that they represent your psychological opinions in this case to a reasonable degree of psychological certainty?

A Yes, they do.

Q And just for the record, also, Dr. Brand, the two addenda, were they prepared in preparation for this litigation?

A Yes.

Q Thank you.

MR. FERRELL: I'm sorry. The second addendum, we move to have it admitted.

THE COURT: Same objection?

MR. WICKENHEISER: Yes.

THE COURT: I'm going to mark it Exhibit 18.

MR. FERRELL: Thank you.

(Exhibit 18, received in evidence.)

BY MR. FERRELL:

Q And, Dr. Brand, I'm going to ask for permission, would it help for you--help--be helpful for you to have these report--your report and both addenda in front of you while testifying?

A Yes, it would.

MR. FERRELL: Your Honor, we ask that she be allowed to consult with these documents if it would refresh her opinion in answer to a question.

MR. WICKENHEISER: No, objection.

THE COURT: That's fine.

MR. FERRELL: Okay. Thank you.

BY MR. FERRELL:

Q And, Dr. Brand, in preparation for your testimony today, did you also review a copy of Tennessee's lethal injection protocol that's already been admitted as an exhibit in this proceeding?

A Yes, I did.

Q Thank you. Okay. Talking first about your report dated July 29th, 2023, how much time did you spend with Christa Pike in preparation for reaching the opinions contained in that report?

A I spent 12-and-a-half hours assessing her.

Q And what testing did you administer in addition--in addition to interviewing her?

A I did a test of response style to look for possible malingering. It's called the "M-FAST," the Miller Forensic Assessment of Symptoms Test. I gave her two measures of trauma exposure so I could assess if any traumas and what the traumas were that she might have experienced. Those are called the "Child Trauma Questionnaire," and the "Life Events Checklist." I gave her a measure--a self-report measure of dissociation, called the "Multiscale Dissociation Inventory," and then I gave her a wide-ranging test of possible impacts of trauma called the "Trauma Symptom Inventory." That measure also has two sub-scales that look at the validity of a person's self report.

Q And based on those tests, did you feel that the results were valid?

A Yes. She showed no signs of under-reporting symptoms which is colloquially called "faking good," and she showed no signs of exaggerating or malingering her symptoms. So it is, in my estimation, a valid representation of her psychological status.

Q And you also reviewed some documents in preparation for--preparing your report, as well as for interviewing Ms. Pike?

A Yes, I did.

Q And those are listed on--in Appendix A of your original report?

A Yes.

MR. FERRELL: Thank you.

Your Honor, I want to introduce a couple of those records right now.

BY MR. FERRELL:

Q Dr. Brand, the document that's on the screen in front of you, is that one of the documents you reviewed for your preparation?

A Yes, it is.

Q Can you identify what that document is?

A It's the investigation report of the rape when she was 17.

Q Okay. Thank you. From what agency?
A I'm sorry? What ages?
Q What age--no. What agency?
A Oh. Agency. The Carrboro--how do you say that, Carrboro--yes, police.
MR. FERRELL: Okay. Your Honor, I would ask that we move to make the Carrboro Police Report a part of the record.
THE COURT: All right. Make it Exhibit 19.
(Exhibit 19, received in evidence.)
BY MR. FERRELL:
Q And, Dr. Brand, what is the document that's on the screen now?
A That is from the University of North Carolina Hospital where she had a rape kit and she was examined after that rape.
MR. FERRELL: And, your Honor, we'd move that this--these records from that hospital be entered into the record as an exhibit.
THE COURT: Mark it Exhibit 20.
(Exhibit 20, received in evidence.)
BY MR. FERRELL:
Q Okay. All right. Let's start back at the beginning. You assessed Christa for Trauma and the effects of trauma today. Could you begin by explaining when trauma

began to enter into Christa's life?

A Yes. It was a very serious series of events completed by her grandmother's boyfriend Ernest. He began sexually abusing her when she was a preschooler. He would trap her in the chicken coop where it was dark, and she was terrified of the spiders there, and he orally abused her. He orally raped her repeatedly over the years.

Q And how old was she at that time?

A She was a preschooler. So, you know, perhaps as old as a toddler up until about fifth--five years old.

Q And how did her family or her adults in--in her life learn about this abuse?

A She didn't tell them about it because he threatened to kill her or hurt her grandmother or her pets. So like many trauma survivors, unfortunately, she thought it was her fault and she kept it to herself.

Q And how did it get found out then?

A Eventually, she--her grandmother was no longer with them, I believe. So I think the abuse stopped.

Q And do you recall whether the school system found out about the sexual abuse?

A She was asked in kindergarten to draw, you know, what her family did or what happened at home, something like that, and she drew a picture of a man looking like a demon and huge penis; and so, unfortunately, at that point

in time, the teachers weren't aware of what that was an indication of, that she was being sexually abused. But she was taken to the office and terrified. It doesn't appear that Child Protective Services got called in. But her family was alerted about the drawing. It doesn't seem like there was much real investigation into what was going on, what she was being subjected to.

Q And let's fast-forward to age 11. Were--were there incidents of sexual abuse at age 11?

A Yes, she was raped at that age.

Q And what happened?

A A man, Claude--I'm blank on his last name--Claude was a neighbor. He lived literally a couple of houses away. He grabbed her and threw her down. Inserted sticks into her and was attempting to get his dog to lick her vaginally. It was pretty horrific.

Q And was Mr. Davis prosecuted for that?

A Yes, he was.

Q And then, again, at age 17 what happened?

A At age 17 she was on her way to the store, and a man grabbed her and began to rape her. Actually, did rape her, although they did not find semen inside her body, but she was brutalized. She had bruises and abrasions throughout her body, including right near her groin, and was distraught when she was seen at the hospital and by the

police.

Q And did her mother believe that she had been raped at that time?

A Her mother repeatedly did not believe her. The times when Christa did tell her mom that she'd been raped and hurt, her mother just didn't believe it. At one point, the school personnel, I believe it was with Mr. Davis--with Mr. Davis' assault, Christa did tell her mom that time and her mom didn't believe her. Her sister didn't believe her. But a school teacher saw her sobbing at school and looking extremely distressed and asked what was going on. And so, again, at that point the police--or I'm not sure--Child Protective--some--some authorities were called, and obviously, he was apprehended and--and incarcerated for a while. But her own family just tended to disbelieve her, and therefore, not protect her.

Q Were there any other incidents of sexual abuse in her childhood?

A Yes. Her mother had numerous boyfriends and husbands, and one of them, Steve Kyaw, would repeatedly grab her nipples and pinch her in painful ways, and he had pornography all over the house that she was exposed to.

Q And were there incidents in her childhood of physical abuse?

A Yes. I counted six different people physically

abused Christa. Her mother and father--particularly her father, would beat her. This--this man Steve who lived in the house and was a husband for a while, he would also beat her. Danny Thompson had a special whip that he had hanging on the wall to threaten her and whip her with. Her maternal grandmother also physically abused her and her own sister did. For example, purposefully catching Christa's fingers in the doorjamb and slamming the door on her fingers.

Q And based on this history, did you conclude that Christa suffers from post-traumatic stress disorder?

A I certainly did.

Q And have any other medical or psychological experts found the--or concluded the same diagnosis?

A Yes, there've been a number of--of experts who, through the years, have diagnosed her with post-traumatic stress disorder, and even at the current prison she's diagnosed with post-traumatic stress disorder.

Q And in testing and preparation for trial or post-conviction, have there been any other indications of post-traumatic stress disorder?

A Yes. A very early assessment was done before the crimes that she's on death row for. Early psychologists tested her when she was having trouble behaviorally at school, and I read through that report carefully. I could

see that some of her responses would indicate possible trauma. They didn't necessarily recognize it then, but now we know so much more about trauma, and so even very early psychological testing showed indications that this was a very abused girl.

Q Did the psychologist who examined Christa at her capital trial testify that she suffered from trauma?

A Unfortunately, Dr. Engum, the one who did her psychological testing, did not accurately, in my opinion, represent what her psychological testing showed. I reviewed that testing very carefully. He gave two tests. The multi--MMPI--Minnesota Multiphasic Personality Inventory--that had two sub-scales of PTSD, both of which she was elevated on. His report did not mention that at all. Another test he gave, Personality Assessment Inventory, the PAI, also had a PTSD sub-scale, and that was also elevated. He did not mention that in his report. She was elevated on sub-scales of fearfulness of others. Sometimes, you know, the test sub-scale--it's called "paranoia," but we know now that all that trauma she was exposed to and lack of protection would very likely make anybody be very suspicious of others, mistrustful, but that doctor did not interpret it that way, and she was high also on some possible psychotic scales, which, again, my own research and other people's research now shows it's a

consistent pattern for people who've been exposed to this much trauma starting early in life and going throughout development. So, unfortunately, a number of signs of trauma were missed by their main psychologists.

Q And what is Christa Pike's other mental health diagnosis?

A Her main and very severe other diagnosis is bipolar disorder. That had--I talked about it in the report. That had, unfortunately, very strong bearing on her criminal behavior at that time.

Q And do you know when that was first diagnosed?

A Some of the very early experts--I could look through my notes and find the actual dates, but very early on people were--some of the experts, not--not Dr. Engum, although she was high on a sub-scale of mania, he didn't mention that either, but a number of the other experts around that time or when--I actually think it was a little bit later, it was--reports came in because she wanted to waive the appeal, the rights to appeal her death sentence, and so they were assessing her for competency, and a number of doctors at that point were talking about her having bipolar disorder.

Q Thank you. And does Christa Pike's post-traumatic stress disorder continue to affect her to this day?

A Yes, it does.

Q In what ways do you see that it's manifest?
A I'm sorry. Repeat the question, please.
Q What ways have you seen in your interview with her that it has manifest?
A So at times when she was talking about some of the trauma, because, of course, I had to have her tell me about the traumas, at times she would disassociate, which means a person disconnects from their body, from their emotions, they may get a very far away, kind of glassy look in their eyes, and it's like they stop processing. It's a psychological defense when somebody has been abused or severely traumatized. It's especially associated with early onset of abuse, chronic and severe trauma.

So the fact that I saw her several times dissociate was a behavioral manifestation, and I actually saw with my own eyes that she dissociates to this day because of the earlier traumas. I also saw signs of disgust when I asked about trauma exposure. She told me about what Ernest did, and trauma memories are different than regular memories. They present with sensory intensity and fragments. So as she talked about what Ernest did to her as a very little girl, she didn't tell me the whole coherent story. Instead she showed a disgust response, like I--I'm imitating it. She said, "I can still smell his genitals." And she had this look of utter disgust on her

face. That is demonstrated PTSD reactivity and the intrusiveness of the sensory memory of trauma.

Q And what is the difference--you touched on it just now. What is the difference between ordinary memory and traumatic memory, or traumatized memory?

A So ordinary memory, we can consciously call up a memory and tell the story. It's under volitional control. It's a coherent, organized narrative. Traumatic memory is--tends to be more intrusive and it's fragmentary. So the person may smell something. They may feel a body sensation of something. Like if they were pinned and held down, they may be triggered by that sensation later in life; or the light looking a certain way. Their body being positioned in a certain way. It's heavily sensory-related and it's intrusive. It comes at a level of intensity that they don't want and yet they can't stop, and it's very disruptive to their thinking and their functioning and at its very--at a severe level.

We've all heard of flashbacks. So, for example, a veteran may come home from war. They're back on U.S. soil. They're not in danger, but if they hear a car backfire, they--their survival brain interprets that they may be being shot at or an explosive device has gone off and they may drop to the ground, even though they're in a downtown area. They're totally safe. So those traumatic

memories can make us--they can intrude so intensively that the person loses all awareness of where they actually are and what's happening, and they instead are reliving what they lived through already, the trauma, but it doesn't feel like it's the past. It feels ever present. They are reliving it. That's part of why trauma can be so disabling and psychologically--psychologically harmful for decades after it's occurred.

Q And I think you said that this traumatic memory is voluntary or involuntary?

A Involuntary. When those intrusions come, the person doesn't want to feel this. They certainly don't want to remember it. The vet doesn't want to lay flat on the ground in front of everybody, you know, covering their head. But it happens. It's totally involuntary.

Q Thank you. Now, I'm gonna keep my promise to the judge and bring us into the reason for this hearing, which is the application or the relevance of Christa Pike's mental health to the execution process in Tennessee.

And I want to start with a document that has already been admitted. It's page 57 of the Byron Black exhibit. I think it's Exhibit 3, and I don't have that in front of me, unfortunately, and I want to give it to--there it is. I got it late. Just so you see that this is already in evidence, but so that your Honor can see what's

in front--doesn't have to go through 57 pages.

Now, Dr. Brand, this has been admitted as Exhibit 3 in these proceedings, and this is a log of somebody observing a death-row inmate. In this case, Byron Black. Have you seen this document before?

A No, I haven't.

Q Based on looking at it, it's a monitoring report, what--how--how frequently is the inmate monitored in this document?

A It looks like approximately every 15 minutes the inmate is observed and then a notation is made about what he or she is doing.

Q And does this appear to be intermittent or is it constant, based on this document?

MR. WICKENHEISER: Objection, your Honor.

A It--

MR. WICKENHEISER: I'd like to object to relevance on this. Looking at issue two, the question is where she will be observed by male prison officials. I'm not sure how this gets into the question of whether or not she will be observed by male prison officials. This is just going through, you know, how the observation occurs.

THE COURT: I'm taking it you're just trying to show--you're still saying that the 14 days of observation is a problem under the Eighth Amendment?

MR. FERRELL: Yes, that that could be potentially traumatizing, and Dr. Brand, I think, will speak on that.

MR. WICKENHEISER: And I apologize, your Honor. The question is the--is the two weeks at Riverbend, though, and I think we're--

THE COURT: They didn't plead--I mean, I read their motion in the Tennessee Supreme Court, I don't know, 20 times. First 10 times I read it, I read it just like the Supreme Court read it. I had to go back and read it really close because of the way they use their conjunctions to see that, in fact, they didn't say he was--she was gonna be moved 14 days ahead, but--but they're interested in--the spirit of that rule's 14 days monitoring and her movement to--from--to Riverbend. So I will report that, what the true facts are, and make a report to the Supreme Court, but that--that report should include the effects of 14 days of close observation and her movement to Riverbend. So I'm gonna allow you to go forward.

BY MR. FERRELL:

Q Dr. Brand, do you have any opinion of whether such close observation and monitoring would be traumatizing to Ms. Pike given her history of post-traumatic stress disorder and bipolar disorder?

A I do.

Q And what is that opinion?

A I think it will be very psychologically harmful for Christa to be observed while she's washing, toileting, changing her clothes. That constant observation, even during private moments, will be very invasive and likely trigger her past traumas, which then become intrusive in times where she was observed when she didn't want her body observed. It will be very, very distressing to her, more than for the average person.

Q And will that be only when male guards observe this?

A I think male guards would be worse, but I think females, just the matter of fact of having total invasion of her privacy, will still be damaging to her.

Q And just for the record, that would be true of any death-row inmate. Why would Christa be different?

A Because she was raped by five different people and, you know, her clothing removed and observed in ways she didn't want to be observed and touched. So anything that's similar to that can trigger these memories of trauma and be highly, highly distressing.

Q And would the transfer from a women's prison where Christa Pike has been for 30 years to a all men's prison in and of itself be traumatizing?

A Yes, I believe it could, because she'll be away from people she knows, a routine she knows, a cell she

knows. Familiarity gives trauma survivors a sense of control and predictability. Being moved away from that to a prison she's not familiar with, a staff she's not familiar with, peers she's not familiar with, routines that are not the same, that will make her feel even more out of control and highly triggering to her.

Q And at the moment of her execution, when she's extracted from her cell, will be strapped onto a gurney be traumatizing to her?

MR. WICKENHEISER: And, your Honor, I'd like to just repeat the objection I made before. Issue two is--is targeted exclusively at, you know, the--the observation by male guards. It does not get into the extraction procedure, and we don't see any relevance in this.

THE COURT: Well, they're right. It's not relevant to Question No. 1 and 3.

MR. FERRELL: But it is relevant to Question No. 4, your Honor, about the pain and suffering under this protocol versus the--the other option that we proposed.

THE COURT: Well, I--I'm sorry. You proposed a central line?

MR. FERRELL: That's one of our proposals. The--

THE COURT: Are they gonna go to their cell and get her?

MR. FERRELL: --other is--is hanging.

THE COURT: Under the central line, aren't they going to go to her cell and get her?

MR. FERRELL: Yes.

THE COURT: And hanging, aren't they going to go to her cell and get her?

MR. FERRELL: But they won't strap her to a gurney.

THE COURT: Okay. So--so I'll--I'll hear what the other protocol is for how they--is she going to testify about the psychological damage from the protocol from hanging?

MR. FERRELL: No. I could ask her some questions, yes.

THE COURT: Do you know what the protocol from hanging is?

MR. FERRELL: I don't think it's ever been written, no.

THE COURT: Well, then how are you gonna ask her questions about that?

MR. FERRELL: I could have a hypothetical one. For example--

THE COURT: Well, let's just--I'm gonna overrule your objection. To the extent that it's relevant to issue No. 4, I'll consider it and give it whatever weight it needs. But they're correct, it has no bearing on issue No.

3.

MR. FERRELL: Thank you, your Honor.

BY MR. FERRELL:

Q Back to the question, Dr. Brand. What would be the significance of strapping her down to a gurney? What would be--that would be a distressing moment, I think, for any inmate. Why would it be that much more distressing for Christa Pike?

A It will be highly triggering for Christa Pike. She will experience being held down and then being tied down, very similar to how she experienced being pinned and trapped and raped. She won't be able to escape like she couldn't escape back then. That is likely to precipitate her having a flashback where she will lose all sense of current reality, and as I explained earlier, she'll be transported in her mind back to times when she was being raped, feeling the full emotional and physical force and sensations of that time.

The reason that happens is because our survival brains, the brainstem get activated. That's the part of our brain responsible for responding to danger. It is not consciously controlled. We can't tell ourselves, "Just calm down. This is supposed to happen. This is not me being raped." We can't talk to this part of our brain, our brainstem. So in--when our brain perceives that we're in

danger and the brainstem activates, it activates with, called the "defense cascade." The first step in that cascade we've all heard about is called "fight or flight." So if a person can, they will flee the situation or fight back. During those times our hearts are beating very rapidly, we're breathing rapidly, muscles are clenched ready to go, ready to run. If our brain detects that it's not possible to escape or fight, then the brainstem switches to the next level of the defense cascade. It's called "tonic immobility."

When that happens to Christa, her body will become rigid and she won't be able to move, not even her tongue or her mouth. So even if she desperately wants to scream or to talk, she won't be able to. Sometimes people say the phrase, you know, "I was scared stiff." And if they've really experienced that level of defense, it is accurate. They are scared stiff. They can't move, can't scream. Sometimes trauma survivors blame themselves for not screaming or moving, but at that point the nervous system isn't under conscious control.

Then the next step, if there's still no escape, if there is still danger, her brain will then take her to the next automatic level. She doesn't control this. The next level of defense is deep shutdown. In shutdown, the opposite happens with our heart slowing way down, blood

pressure dropping, muscles go completely limp. She may dissociate. So she may be perceiving herself up above herself rather than down on the gurney. She'll perhaps--because her muscles go into shutdown, at times when that happens, muscles relax; so do sphincters. So she may urinate on herself or defecate or throw up. None of which she would want. None of which anybody would want. She may also lose consciousness because the body slows down so much as that brain's last effort, the last-ditch effort to survive. During all that, Christa won't just be responding like every other person. She won't be remembering her traumas. She will be fully reliving them, and that's severely psychologically harmful.

Q And would this--in addition to being strapped in, would inserting an IV also affect this?

A It could, especially if they have to go for someplace hear her clavicle, and I know, my reading of the protocol is that she'll have EKGs, which means that she has to be--her chest has to be partially exposed to put on the EKG leads, and if the first line--according to the protocol, they have to do two IVs. If they can't easily get a second IV access, sometimes they go for the groin area, which means her groin would have to be exposed, and they might have to make multiple painful punctures in a very private area for somebody who's been sexually

assaulted. For anybody it would not be pleasant, but for somebody who's gone through that much sexual abuse, that many rapes, it would be horrendously harmful.

MR. FERRELL: Thank you, Dr. Brand.

I think that's all my questions, your Honor.

THE COURT: All right. Cross-examine.

CROSS-EXAMINATION

BY MR. WICKENHEISER:

Q Hello, Dr. Brand. How are you doing?

A I'm fine. Thank you.

Q My name is David Wickenheiser. I'm an assistant attorney general for the State of Tennessee.

Do you have your expert report in front of you, or would you--I would just like to go through it with you and ask you a few questions about things that are in it, and so if it's in front of you, that might be a little easier. Otherwise, I could--I could show it on the screen for you. Whatever's easiest for you.

A I have it on my computer on a PDF. It's available. So if you just tell me which page you want--

Q Yeah.

A --me to go to, I can move there.

Q Okay. Perfect. It looks like your original report was written in 2023; is--is that correct?

A Yes.

Q And the addenda were written in anticipation of--of this litigation; is that correct?

A Yes.

Q Did you speak with Ms. Pike--I couldn't tell from the addenda. Did you speak with Ms. Pike about those addenda?

A No, I did not.

Q Have you spoken with Ms. Pike since 2023?

A No.

Q Okay. In--in your original report--would you mind turning to page 37.

A No problem. It'll just take me a few minutes to get there.

Q Just let me know once you're there.

A Okay. Still scrolling.

Okay. I'm there.

Q In the final full paragraph of page 37, you wrote, "Christa has matured and learned the process for trauma, and she is truly a different person than she was at the time of the murder. Christa will always carry--carry that history of trauma with her, but she now has the tools and emotions to deal with life stressors."

Did I read that right?

A That's right.

Q Do you still believe that to be true?

A I do, but that does not mean she doesn't suffer from the disorders of which I diagnosed her with at that same time.

Q Yes, ma'am. I'd like to ask you a few questions about the first addendum to your report. Would you mind turning to--to page 5 of that first addendum?

A Okay. I'm there.

Q Okay. Under the section titled, "Torn from everything familiar"--

A Yes.

Q --you wrote, "Approximately 48 hours before her scheduled execution, Christa will be transferred from the women's facility." Did I read that right?

A Yes.

Q Are you aware that TDOC has agreed to wait to transfer Ms. Pike until, at the earliest, 24 hours from her execution?

A I have learned that since I wrote--written this, yes.

Q Is there any amount of time Ms. Pike could spend at RMSI that you would think would not constitute added and severe punishment?

A I think it would be much easier on her and less psychologically distressful if she could be transferred there immediately before execution so that she could sleep

where she's familiar with sleeping her last night of full--her last full day of life.

Q Okay. So right up until--if she were transferred right before her execution that would not constitute added and severe punishment? Am I understanding that right?

A That element would no longer be severe. I--I do believe the other things I talked about, the being held down by--by multiple people and her chest being exposed, possibly her groin being exposed, I think those would still be potentially extremely psychologically distressing, but that element would be improved.

Q Okay. So even if she--even if the execution occurred at DJRC, she was never transferred, because of the extraction procedure, it still would constitute added and severe punishment?

A Yes.

Q In the next sentence after that you write, "She will spend the final days of her life as a stranger in a strange place surrounded by men cut off from every source of human familiarity she has." Did I read that right?

A Yes.

Q Are you aware that TDOC is a--is committed to staff women to observe Ms. Pike?

A I think that would be helpful. It would be even more helpful if it's women she knows, staff she knows.

That little bit of familiarity helps trauma survivors feel somewhat more in control, less--somewhat less likely to be triggered into a full-blown flashback.

Q You would agree that Ms. Pike has spent the past few decades being supervised and observed by male guards at DJRC, correct?

A Yes.

Q Suppose TDOC changed their protocol so that the execution were to occur at DJRC, but it was in a different unit she wasn't familiar with, with staff she wasn't familiar with, would--would the same problem still present?

A It may be slightly better. I think ultimately what would be best is her staying in her familiar cell with staff that she's familiar with until the last moments.

Q In regards to--to a strange place, are you saying that it would be added and severe punishment anytime Ms. Pike is--is moved into a new place? Say--say she was taken to a hospital or say she was taken to a courthouse, is that added and severe punishment?

A I don't think a courthouse would be. There was an article I cited in one of the addendum, the--just looking--the second one. Medical procedures can be very triggering for trauma survivors. I've seen that with my own private practice patients over the last 33 years or so. Going to anything that's medical, people understand,

including traumatized people; that she would understand she's gonna have IVs inserted, that she would be somewhat partially exposed. She would not be in normal civilian clothing. That's--those steps alone could be traumatizing, even in the women's prison or at a hospital. I--I think I--I explained it well enough.

Q Yes, ma'am. Could--could we move to the section titled "Silenced in her final hours"?

A Yes.

Q All right. In that first sentence, you say, "In the 12 hours before her execution, Christa will be prohibited from contact with family, friends, her spiritual minister, or anyone that might offer comfort with the sole exception of her attorney." Did I--did I read that correctly?

A Yes.

Q What are you basing that off of?

A That was my understanding from the--the execution protocol. I may have misunderstood, but that's my understanding.

Q If Ms. Pike could in--in those final 12 hours contact family members, see her spiritual advisor, would you still have those concerns?

A If she was able to have contact throughout those last hours, I think that would be very helpful.

Q Could we move on to addendum 2?
A Yes.
Q On that first page there, the last paragraph, I guess the--I think that's the main paragraph I should--I guess I should say. Let me turn to it myself. I apologize.
A I've got it--I've got that addendum.
Q To be clear, you're talking about observation at DJRC, correct?
A Wherever there would be close observation, as I was talking about earlier, where she's being watched while she's potentially changing clothes, bathing, toileting. That kind of invasive monitoring, no matter where it happens, no matter the gender of the person doing it--although I do believe men would be much more triggering, that kind of close monitoring is going to feel invasive, and that's gonna--because she was invaded physically, her clothing was removed, she was held down, those kinds of sensory details, knowing somebody's watching you, that is very likely to trigger her survival brain and the whole cascade of what I talked about could happen.
Q Could we turn to the next page about the possibility of attempted femoral venous access?
A Yes.
Q Do you know if Ms. Pike will be subject to

femoral venous access?

A No, we don't know. I don't--that could only be determined at the moment, if they have trouble accessing other veins.

Q So you're not aware whether the protocol calls for a femoral venous access?

A I believe it calls for central line access, one type of which is femoral venous access.

Q Okay.

A I believe another type of central access is--is near the chest, which, again, you can imagine why would somebody who's been sexually abused so many times, that, too, could be very, very challenging.

Q So any central line placement, you think would--would run into difficulties with Ms. Pike's PTSD?

A I think it is very likely to.

Q In the next section titled "The potential for a failed execution," in that first sentence you write, "Repeated attempts to execute a condemned prisoner results in exceptionally high rates of stress and symptoms of post-traumatic stress disorder." Is that correct?

A Yes.

Q To be clear, is that something that would be true of all condemned prisoners?

A Yes, I would say it would be very, very

distressing for all prisoners, but we know from people who already have PTSD that their brains have become sensitized and they suffer more severe symptoms at re-traumatization than people who are having a first trauma. Just leave it at--at that.

Q Would any of your--

A So she would--I'm sorry. Go ahead.

Q No. I apologize. Please. Please finish.

A Obviously, anybody who is facing execution would be very frightened, but for somebody who has her history and is being strapped down and undergoing all this as I've described, I won't repeat them all again, her brain is very likely to go into fight or flight, then tonic immobility, and then full shutdown with possibly throwing up, losing consciousness. The whole cascade is extremely psychologically harmful.

Q Would any of your concerns be addressed if Ms. Pike was moved to Riverbend to be subject to execution by hanging?

A I understand from her attorneys that that is her wish, and because the issue of control and having some sense of agency, some sense of I--I can influence what happens to me, because hanging is what she's asking for, I would support that.

My understanding is that in hanging they cover

the person's face, and my guess would be that the fact that her face would be hidden and people couldn't look at her and that she's not held down by people or, you know, the--strapped to a gurney, that the differences sensory-wise would make that less hideous, less psychologically damaging and distressing for her.

Q To be clear, have you reviewed a hanging protocol in anticipation of--of this testimony?

A I have not.

MR. WICKENHEISER: Thank you, Dr. Brand. I really appreciate your time.

THE WITNESS: Thank you.

THE COURT: Redirect.

MR. FERRELL: Thank you, your Honor.

REDIRECT EXAMINATION

BY MR. FERRELL:

Q Dr. Brand, the scenarios you just mentioned about hanging, are those simply of your imagination, or is that something that--not imagination, but how you imagine a hanging would take place? That's purely yours, or are you basing this on any firsthand knowledge about the hanging process?

A I asked Mr. Ferrell what his understanding would be if--if she were to be hanged, and--and that was what he shared with me.

Q And--and, basically, just to repeat, because there are a number of small steps--I think you've agreed that there are a number of small steps that could ameliorate this situation?

A Yes.

Q But as we know it, a transfer from DJR--a period of two weeks, more or less solitary confinement, at DJRC, plus a transfer 24 hours before, being strapped to a gurney, having lines--IV lines inserted, perhaps central line, at the--the moment of execution, it is your opinion that that is sure or very likely to cause terror and pain due to Christa Pike's post-traumatic stress disorder?

A Yes, that is my opinion.

MR. FERRELL: Thank you.

THE COURT: Before you go, I need you to give some clarification. Are we talking about 24 hours? Are we talking about 14 days?

MR. FERRELL: There was 14-day period of isolation at DJRC--

THE COURT: I think the word is "observation."

MR. FERRELL: Yes, I think that there is observation that--protocol--

THE COURT: She giving her opinion that 14 days of observation or 12 hours of observation or 48 hours of observation--

MR. FERRELL: The question I asked was kind of the global picture of all of these things. Now, there might be ways to ameliorate different parts of it, but I--the question I--as I was asking was, all of these events, are they sure likely to cause terror and trauma.

THE COURT: Okay. Well, the Supreme Court has asked about 14 days of observation.

MR. FERRELL: Yes.

THE COURT: Did you ask her that question?

BY MR. FERRELL:

Q Would--the mere fact of 14 days of isolation and observation, would that be traumatizing?

A Are we talking about close observation where it's every 15 minutes, no matter what she's doing, somebody's going to observe her? So toileting, bathing, dressing, would--those would be included as things that would be observed?

Q I believe so, yes.

A I think that would be psychologically harmful and damaging to her.

MR. FERRELL: Thank you. I--

THE COURT: While she's on there, so she would also say that if you reduced it to 48 hours, it would be--

MR. FERRELL: Would be less damaging.

THE COURT: I don't know what she's gonna say.

Ask about 48 hours and 12 hours.

BY MR. FERRELL:

Q If it were only 48 hours, would that be less damaging?

A I think that would be more tolerable. If it could be shifted so that it's every half hour and so Christa could tell, if I go to the restroom now, somebody's not going to be looking in the window and watching me, that would help. She could bathe that quickly. She could, you know, get her private activities done when nobody's watching.

Q So it's your testimony that a number of small things could improve this, but that if there is the strapping down at the end, the insertion of IVs, that that, in and of itself, is the primary trigger here, or am I putting words in your mouth?

A It's--no, that's exactly my opinion. It is--the strapping down, being held down as she was as a small girl, that is going to be highly triggering. There's no way around that.

MR. FERRELL: Thank you, Dr. Brand.

THE COURT: Cross-examine--recross, I mean. Sorry. I'm not gonna make you though.

RECROSS-EXAMINATION

BY MR. WICKENHEISER:

Q Hi, Dr. Brand. I'm sorry. Just one--one quick followup. Do you have any expertise in corrections work?

A No, I don't.

Q Have you ever worked as a prison administrator?

A No.

Q Have you ever been consulted by prison administration on how to implement prison policies and procedures?

A I've been asked by a for-profit prison system to teach and train their officers, their various staff about trauma and its impact and how it can show up.

Q But you haven't been involved in making policy-level decisions about how to run prisons?

A Correct. I have not been.

MR. WICKENHEISER: Thank you.

THE COURT: I just have one question, Doctor. The cell that she's gonna be held in at Riverbend, the 24 hours, have you seen that cell?

THE WITNESS: I have not seen that cell.

THE COURT: Do you know whether she has access--unlimited access to a telephone while she's in that cell?

THE WITNESS: I don't know.

THE COURT: You know whether she has a television while she's in that cell?

THE WITNESS: I don't know.

THE COURT: Do you know while she's in that cell if she's allowed to have recreation time and move out of the cell?

THE WITNESS: Well, I believe my understanding is that she would have one hour every 24 hours to come out of the cell.

THE COURT: Do you know if she's allowed any personal items from her previous cell to be transferred to her new cell?

THE WITNESS: I'm not certain.

THE COURT: All right. That's all the questions I had. I didn't trigger anything for any of the lawyer--you're done. They're through with you. You're done for the day. Thank you for your assistance.

THE WITNESS: You're welcome.

(Witness was excused.)

THE COURT: Moot--well, I won't moot this, but is it time for us to take a break, or what do you want to do?

MR. AYERS: Yes, your Honor. We should have Dr. Richard Mansour available in about 15 minutes.

THE COURT: Okay. We'll take a 15-minute recess. I'll moot this now.

(Recess was taken.)

THE COURT: Call court back to order just briefly. I've been handed proposed Exhibit 9 that we were gonna mark

from yesterday that we're just making sure was redacted.

State had an opportunity to look at this?

Have you got it, Madam Court Reporter?

COURT REPORTER: I do.

THE COURT: Let me make sure that both sides sign off on it, and then we'll be good.

This was for ID only--is this okay with the state if we mark this copy for ID only?

MR. AYERS: Yes.

THE COURT: I just want to make sure we didn't slip in any information we didn't want--

MR. AYERS: Yes, your Honor. Exhibit 9, ID only.

THE COURT: Yes.

MR. AYERS: That's right. Okay. Thank you.

THE COURT: Okay.

Hand this back to the court reporter. I don't want to keep up with the official copies.

We need to go back into recess just a moment?

MS. MORRIS: We do, your Honor.

THE COURT: Court recess. I'll just sit up here.

MS. MORRIS: Okay. Thank you.

(Court in recess.)

THE COURT: Call your next witness.

MS. MORRIS: Your Honor, we've got Dr. Richard Mansour on via Teams.

THE COURT: Okay. For the record, we're calling him out of order, I guess you could say, so we can speed this process along.

MS. MORRIS: Yes, your Honor.

Dr. Mansour, can you hear me okay?

DR. MANSOUR: I can, but you may have to repeat some things. The--the transmission is not perfect.

MS. MORRIS: Okay. I'll try and speak slowly and take pauses just in case you need me to repeat anything.

DR. MANSOUR: Thank you.

MS. MORRIS: Your Honor, do we need to swear in this witness before we begin?

THE COURT: Please. Thank you for reminding me.

Doctor, raise your right hand.

(Witness was sworn.)

THE COURT: Thank you.

RICHARD MANSOUR, M.D., called as a witness, being duly sworn, was examined and testified via video as follows:

DIRECT EXAMINATION

BY MS. MORRIS:

Q Dr. Mansour, could you state your name and spell the same for the record.

A Richard Preston Mansour. R-I-C-H-A-R-D P-R-E-S-T-O-N M-A-N-S-O-U-R.

Q Thank you. And you've been retained as an expert in this case for the state?

A Yes.

Q And you declare--you prepared a declaration, an expert report that you attached alongside your CV with?

A Yes.

Q Dr. Mansour, we're gonna pull up your CV so that you'll be able to see it.

Can you let me know that you're able to see that?

A Yes.

Q And do you recognize that as your CV that was attached to your declaration in this case?

A Yes, it is.

MS. MORRIS: Your Honor, I ask that he be able to refer to the CV during voir dire.

THE COURT: That's fine.

Q Dr. Mansour, can you describe your educational background.

A Yes. Well, I attended medical school in New Orleans, LSU, Louisiana State University Medical Center, from 1973 to 1976; and then in January of '77, I started internal medicine residency at the Alton Ochsner Medical Foundation in New Orleans, which was a three-year program ending in December of 1979; and then after working at Ochsner for a year and a half, I joined the U.S. Army

Medical Corps, and went to the Letterman Army Medical Center in San Francisco for a three-year specialty training in hematology and medical oncology. And that--that was my formal education before achieving my board certifications.

Q Thank you. Could you explain how you achieved your board certifications and what you are board certified in?

A Yes. I'm board certified in internal medicine. I took a test offered by the American Board of Internal Medicine around 1980; and then in 1983 I took a test for the American Board of Internal Medicine, specialty of medical oncology; in 1984 American Board of Internal Medicine, specialty of hematology. So there were three separate tests involved.

Q So it's--

A This is common for an hematologist, oncologist. This is the common triple certification.

Q So just to be clear, you're board certified in internal medicine, hematology, and medical oncology?

A That's correct.

Q And where do you--where are you currently employed?

A I work for the LSU Medical Center in Shreveport, Louisiana, and by the Ochsner LSU Health Physician Group that runs the medical practices here.

Q And how long have you been employed at LSU Health?

A Since the end of 1998. The last three months of 1998 until now.

Q Have you ever testified as an expert in internal medicine, hematology, or medical oncology?

A Yes.

Q How many times, roughly, have you testified?

A Well, since I--I formally went into practice and left the Army in 1986, which is about 40 years ago, I think, I think I've probably been to court maybe six times, maybe seven at the most, and then I've done depositions where there was a court reporter, to add to that maybe 10 times. It's hard to remember, you know, over 40 years.

Q Right. And to your knowledge you've never been excluded as an expert before?

A No, I've never been excluded.

MS. MORRIS: Your Honor, we would tender Dr. Mansour as an expert in the fields of hematology, medical oncology, and internal medicine.

MR. IHNEN: No objection.

THE COURT: All right. Allow him to testify in those three fields as an expert.

MS. MORRIS: Thank you. And could I also admit his CV as an exhibit?

THE COURT: We'll mark that Exhibit 21. You have a copy of it?

MS. MORRIS: Okay. We're--we're getting copies, your Honor.

THE COURT: Okay.

MS. MORRIS: I apologize.

THE COURT: That's all right.

(Exhibit 21, received in evidence.)

BY MS. MORRIS:

Q Dr. Mansour, can you explain what thrombocytosis is generally?

A Yes, I will try. You know thrombocytes are also called "platelets." They're one of the particles--are particles in the blood, and generally, in the blood, when you look at blood, the red blood, you're looking at a combination of red blood cells and white blood cells and things you can't see called "platelets." Platelets are specialized. Just like white blood cells specialize in fighting infection and the red blood cells specialize in delivery of oxygen, platelets are specialized in repairing holes, many small holes in the blood vessel. So if, for instance, you cut yourself shaving. You create a small hole in a small blood vessel near the surface of the skin. The blood comes running out, and eventually, the platelets will stick to the sides and form a little clot there that

you'll probably know--know sometimes if you wipe it off, you'll bleed again. So the platelets initiate that plug to begin the healing process.

Q And related to thrombocytosis, I think von Willebrand Factor or von Willebrand disease has been raised in this case. Could you also explain the relationship between thrombocytosis and von Willebrand Factor or von Willebrand disease.

A Yes. Now, it's a little bit more complex. I'm gonna try and, you know, make it understandable to someone who hasn't been studying it for 40 years.

Underneath the blood vessel wall, the blood vessel walls create this protein called "von Willebrand protein." It's a big protein. It sticks underneath the blood vessel wall, and as the--as the outer--or the inner layer of the blood vessel wall is torn off, the von Willebrand protein opens up like a spring and has a receptor, and as the platelets are rushing by as the blood's, you know, shooting by with the blood pressure type of scenario, the von Willebrand protein catches the platelet and they stick together, and then together they plug up the hole. That's the normal physiology.

Now, you can have situations where you don't have von Willebrand protein made normally. It's too low and it's more difficult for the patients to--for the platelets

to patch up the hole because it's nothing--the main target for them to stick is the von Willebrand protein.

Now, occasionally, and because the platelet and the von Willebrand protein have a natural association to stick together, if you were to have maybe mill--a million and a half or two million platelets, the way we normally count them, it is possible that the platelets could soak up excess von Willebrand protein and create a relative deficiency. Usually not a severe problem. And so it is possible that the von Willebrand protein, which can be measured both for its physical amount and for its activity--it is possible with a million and a half or two million platelets that you could significantly reduce that measurement, but that's not the normal situation. Anything under a million platelet count I would not worry at all about that.

Q Okay. So just to be clear, thrombocytosis is an elevated platelet count?

A Yes. Thrombocytosis is an elevated platelet count. Now, blood, the normal range for blood is just determined by checking maybe a thousand people and figuring out what the average ranges are of 95 percent of the healthy population; and so a normal range is generally 150 to 450,000 on the platelet count, but two-and-a-half percent of the population who are normal are below 150,000

and two-and-a-half percent of the population who are normal are slightly above, maybe as high as 525,000 the way that these numbers are calculated. So the normal is not an absolute. There are two-and-a-half percent of the population is gonna be somewhere between 451 and 525 on the basis of how these numbers are calculated. Anything over that is definitely--you know, that's beyond three standard deviations from the average, and that's usually some kind of underlying disease process causing it.

Q Okay. And speaking of causes, what are the most common causes or potential causes of thrombocytosis or elevated platelet counts?

A Most common cause in the general population is iron deficiency. So if you have iron deficiency anemia, your body is trying to get your bone marrow to make more blood, and it makes more platelets as a side effect. That would be most common by numbers because that's the most common, you know, scenario for humans; and then an occult abscess somewhere, like someone has a surgery and they get a abscess somewhere in their abdomen or pelvis, and as part of the syndrome of fever and don't--not feeling well, then there could be a reaction with the platelet count going up along with the other blood cells. Those would be called "reactive," non--not primary. That would be secondary to something else.

And then there are bone marrow disorders in which the bone marrow stem cells that are responsible for making platelets get activated beyond what they normally would as the--there's a control process the body has to where you get enough platelets it just slows down the request for platelets, and so the stem cells can have a mutation that causes them just to make platelets all the time, regardless of the level, and that's only been known since 2005, that there are mutational drivers. In this case--well, I--I don't think--there are three that are known and then there patients who don't--you know, who have the process for 30, 40 years, and we know they have something, but it's unknown cause. It's not known to today's science.

In this particular case it's been stated multiple times in the medical record that the patient had a mutation what was called the CALR mutation, which is mutation that was described approximately 2007 as the second commonest cause of having an increased platelet count that is primarily driven by the bone marrow.

Q And I think primary thrombocytosis has already been referred to in this case as essential thrombocytosis. Are those "primary" and "essential" adjectives interchangeable when referring to thrombocytosis?

A Yes. Depends on the generation in which the doctor was trained and maybe the part of the country

because I always heard both terms. The other interchangeable term with thrombocytosis is thrombocythemia. So essential thrombocytosis, essential thrombocythemia, primary thrombocytosis, primary thrombocythemia.

Q What types of treatment from less--least severe to most severe are there for thrombocytosis?

A Well, they generally separate into low risk and high risk for a clotting event, a thrombotic event. I'm sure everyone's familiar with the word "thrombosis" like coronary thrombosis, cerebral thrombosis, stroke, heart attack. Patients under 60 who don't have any known vascular disease are at low risk and they're just considered low risk, and--and many patients at low levels--low levels of the high levels, you know, like 600,000, 700,000, they may not be treated at all.

If they have some kind of risk like high blood pressure, high cholesterol, aspirin, baby aspirin once or twice a day; and then for patients who are over 60 and the platelet counts start getting very high, like 800,000 and higher, we have a drug that's been around 50 years. They're called "hydroxyurea." That's given once or twice a day, and it just--it just cuts down on the number of platelets that are being produced and brings the platelet count back down. That is good for a large percentage of

the population who have this. It's not a real common disorder, but it's good for the majority of the population.

And then we have a more recently developed drugs that interfere with the genetic switches inside the blood stem cells. The most common one is called Jakafi, and then it's got three other recent competitors that do something similar, and there's even an injectable every one- or two-week, interferon type, long-acting drug, but this is for high risk. This would be for a high-risk case, which would be mostly people over 60, most with platelet counts over 800,000 or so for those types of drugs.

Q Did you have a chance to review the medical records for Christa Pike, the movant in this case?

A Yes. I did review some medical records. Several clinic visits covering from 2023--at least a visit--on up to recent. I reviewed those.

Q And in your declaration you cite medical records where her measured platelet counts were 573,000 and five hundred and--

A Yes.

Q --thousand in twenty--

A Yes.

Q --in 2024 and 660,000 in 2025.

A Yes.

Q Based on those platelet counts, what is

your--what was your opinion at the time that you drafted your declaration as to the severity or risk associated with Ms. Pike's diagnosis of thrombocytosis?

A She has low risk essential thrombocytosis; and since I did the declaration, I saw a count from November of 2025 that was 525,000, I believe, and then from May of 2026 it was 452,000. I'm just recalling this out of memory now, so.

Q Okay. And I--I can pull those up.

MS. MORRIS: Can we pull up Exhibit 14.

Q Can you see the medical record on your screen, Dr. Mansour?

A Yes.

Q So is this--which--is this from November 2025--

A Well, I'd say that it was 433,000, if I can--it's very small on my screen, but I think that one was 433,000, which is within the normal limits at that--on that day.

MS. MORRIS: Okay. Can we pull up Exhibit 13.

Q Now, I think this one is the one you were referring to from May 2026?

A Yeah, 452, if I can find it--yes. So 452, which is, you know, the normal range is usually--there's some differences between sites, but it's generally 150,000 to 450,000. I think this one's--that's the norms on this one as well.

Q And based on these most recent platelet counts, would your opinion change at all about Ms. Pike's severity of her diagnosis?

A It's just low risk. I wouldn't--I wouldn't expect any particular effect from any other person who's in the normal range with these platelet counts. I'd expect these platelets to behave the same as what I described what platelets do when there is a disruption of a blood vessel.

Q And based on these platelet counts and the platelet counts from the past two years that you reviewed and Ms. Pike's medical records, what treatment is she receiving for these elevated counts?

A She's receiving a baby aspirin twice a day is what I recall.

Q So would that mean that she--she's low risk based on these counts and her treatment?

A Yeah, she--she's low risk based on her age, the platelet count, and generally the CALR mutation, which she is stated to have, the medical records, is not a very--is not a very aggressive variant of the essential thrombocytosis.

Q And when you say "low risk," what exactly do you mean that she is low risk of?

A She's at low risk for having a stroke either in her brain, her heart, her eye, or some rare stroke. When I

say "stroke," rarely people can get blood vessel blockages in other areas that kill, you know, tissue, but she's at low risk for all of that.

Q And earlier we discussed the relationship between thrombocytosis and von Willebrand disease.

MS. MORRIS: Could we pull up the new exhibit.

Q I believe you cited this--these medical records in your declaration, but we have them for your--to refresh your memory if you need.

MS. MORRIS: Could we admit this as an exhibit, your Honor?

THE COURT: Any objection?

MR. IHNEN: No objection.

THE COURT: All right. Mark it 22.

(Exhibit 22, received in evidence.)

THE WITNESS: Yes. Um--

MS. MORRIS: Hold on just one second, Dr. Mansour.

THE WITNESS: Yeah. Okay.

THE COURT: Let's pause and give the court reporter a moment to catch up.

You (inaudible) working hard.

All right. You can proceed.

BY MS. MORRIS:

Q Dr. Mansour, based on this document--based on

this--this first page, can you make any conclusions about whether or not her thrombocytosis would affect her von Willebrand factors?

A I think it's very unlikely. First of all, it's a rare syndrome anyway, and it's usually such there were platelet counts of 1.5 to two million, in those ranges. So for patients with close--you know, with just slightly elevated platelet count, there's no reason, because--it would because the interaction between the von Willebrand's protein and the platelets have to do with the surface of having way too many platelets soaking up the von Willebrand protein, and she's nowhere near the numbers in which this is generally seen, rarely. So I don't think it would--I don't--I wouldn't put any--not even one percent chance at these levels.

Q And on the second page, her lab results from November 2021, could you explain--

A Yeah.

Q --what these lab results mean and the--the numbers associated with them?

A Yes. Okay. So the first number is what's called the "Factor VIII activity." Factor VIII is what people who are--people who have hemophilia have a Factor VIII deficiency. Again, the way these normals are--are developed is you take a thousand people and you measure

their Factor VIII activity, and there are tests to do that. Whatever the average is for all one thousand, becomes--becomes a standard called "a hundred percent." And then if you are anywhere within 50 percent of that number to 150 percent of that number, you're in what is considered the normal range of variation for a human. All right.

So in this case--and the Factor VIII is protected in the blood by the von Willebrand protein. So a normal Factor VIII is a sign of a normally functioning--a normal amount of von Willebrand protein. This number 119 means one--technically, 119 percent of what was established is the average for maybe a thousand people. So she has, you know, slightly above average on this Factor VIII activity, which--which in von Willebrand disease you would have to be below 30--30 or below to diagnose von Willebrand disease. She has 119.

Now, for von Willebrand Factor that's an actual measurement of that protein, and again, taking a large population of people and measuring all their number, you come up with the average, and the average becomes 100 percent, and she's at 129. So she's above average there. To diagnose von Willebrand disease and deficiency primary, secondary, the number is you need to be below 30. If you're between 31 and 50, you're suspicious. But she's

129.

And then the von Willebrand ristocetin co--it's ristocetin--it's called a "cofactor assay." Anyway, again, this is what shows that the von--she has the von Willebrand protein sticking to the platelets when needed, and so, again, you take all the, you know, large group of patients, and you--and you look at what the average is of maybe a thousand people and say, okay, that's a hundred percent. This is 88 percent. Normal is down to 50, between 49 and 31 or so is suspicious, and under 30 would be considered a sign of potentially von Willebrand's disease or von Willebrand syndrome.

So these numbers are nowhere in the ballpark, and these are perfectly normal, absolutely perfectly normal numbers showing no--there's no effect on the von Willebrand protein that would--that would cause any kind of malfunction when the platelets in the von Willebrand protein is supposed to act together to fix a broken blood vessel.

Q And--and when you say "malfunction in fixing a broken blood vessel," I think we've--we've talked about how thrombocytosis affects clotting, the elevated platelet count. Does that cause more clotting, and how does that compare to von Willebrand disease--

MR. IHNEN: Objection, your Honor. She's leading

the witness.

THE COURT: I'm sorry. What's the objection?

MR. IHNEN: Leading.

THE COURT: Leading? I'm gonna overrule.

THE WITNESS: I'm sorry. I--first of all, I would need that repeated, but I--I'm not sure I'm supposed to do when someone objects. I got to be instructed.

THE COURT: Oh. You stop talking. I appreciate it. You do enough to know what to do. The objection was leading.

Don't suggest--

THE WITNESS: Oh.

THE COURT: You can ask a question as long as you don't suggest the answer to the question. Okay.

MS. MORRIS: Yes, your Honor.

THE WITNESS: Okay. So I need to wait for another question, right?

THE COURT: Yes, sir.

MS. MORRIS: Yes. Yes, Dr. Mansour.

BY MS. MORRIS:

Q Does thrombocytosis cause clotting?

A It--yes, it's associated with clotting. It's--you know, it's--if--if you have it over the years, you're more likely to get clots at the same age than if you don't, but just because it's high, doesn't mean you're

going to clot. It's something that, statistically, over the years, you might have a heart attack or a stroke more at a younger age than--more likely than someone who doesn't have that disorder.

Q And von Willebrand disease, does that also--that in relation to thrombocytosis, does that also cause clotting or does it--

A No. Von Willebrand disease was originally, you know, it's considered a form of hemophilia. It's associated with bleeding, and most commonly, patients who have--that have a deficiency of von Willebrand disease, of von Willebrand protein, they are children that have nosebleeds, women with excessive periods, and who tend to get iron deficient and people who get their molars removed, their teeth pulled, and they bleed excessively, or if they get their tonsils removed, they bleed excessively. That's how the disease was originally recognized.

Q So, and based on your--your review of Ms. Pike's medical records, does she suffer high risk of clotting due to thrombocytosis?

A No. She--she's a low-risk patient. That low risk extends over, you know, many, many years. It's an in--it is an increased risk over many years, but she's what's considered a low risk.

Q And on the other side, does she--do her medical

records show a high risk of von Willebrand disease and excessive bleeding as a result?

A No, they don't show--the records that I've seen, which are these extensive--these are pretty complete tests done in 2021, show that her von Willebrand protein and function are normal. The function of von Willebrand is to protect Factor VIII and to interact on this ristocetin test. Those are the functions. The von Willebrand Factor level is a measurement. It--it's not low and it's not--doesn't have abnormal function.

Q And would you expect these test results to change dramatically or at all in the past five years?

A No, because these tests would change if the platelet count were, you know, steadily going up and got up to a million and a half. You might--you know, they could change. But in this case, the most recent set, you know, for the last year or two of the platelet counts, they're not in the range that would cause this rare problem. The one from November's in the normal range, and the one from this recent May is just 2,000 above the two standard deviation range, which is not really--it's just not enough to do anything.

Q And even with these elevated platelet counts and the past two years of elevated platelet counts, would you expect any interference due to thrombocytosis with the

insertion of a peripheral intravenous IV line?

MR. IHNEN: Objection, your Honor. She hasn't laid any foundation for Dr. Mansour's experience establishing peripheral IV access.

THE COURT: All right. Well, I--he's made an objection. I'll allow you to ask--see if you can lay the groundwork.

BY MS. MORRIS:

Q Dr. Mansour, do you have any experience with placing intravenous lines in patients?

A Yes. You know, when I was younger, of course, I used to do it more directly, 'cause being a chemotherapist, I would have to start IVs for chemotherapy lines, and I, you know, had a job in medical school drawing blood in the paraplegic unit. But now, you know, I--I'm a cancer center director and--and I supervise a large infusion room, and so I--I do have some observation about, you know, IV access in our clinic quite a bit.

Q And, specifically, do you have any experience in IV line placement in patients that--or have been diagnosed with thrombocytosis?

A Well, I've had--you know, I've had multiple patients over the last 40 years to occasionally need an IV, and so that's my clinical experience. I have had patients over the last 40 years who have both--both had essential

thrombocytosis and also, you know, needed at some time or another to get an IV.

MS. MORRIS: Your Honor, I believe he's established that he's had--he has clinical experience with IV access, especially in patients with--diagnosed with thrombocytosis.

MR. IHNEN: Can we ask when the last time he placed an IV was?

THE COURT: Yeah, sure. You can ask him. Why don't you ask him.

MR. IHNEN: Dr. Mansour.

THE WITNESS: Yes.

MR. IHNEN: I just had one question, and we're dealing with the foundation for your opinion here. When was the last time you placed an IV in a patient?

THE WITNESS: The last time I placed IV? Oh, it's--it's been some years ago.

MR. IHNEN: Could you--could you estimate it for the Court, please.

THE WITNESS: Fifteen.

MR. IHNEN: Thank you.

Your Honor, same objection. We object to him testifying on peripheral IV access.

THE COURT: I'm gonna overrule your objection.

BY MS. MORRIS:

Q Dr. Mansour, I'll repeat the question. So based on Ms. Pike's medical records, do you think that her elevated platelet count would interfere with the insertion of an IV line?

A I'm not--I can tell you that there's one set of records in which there are either 12 or 13 separate events documented in which the patient had a needle inserted into her vein to draw blood, and placing an IV, the first part of that is putting a needle in the vein, and it--on that--these papers they describe where they put it, how many times they had to stick, and was there any unusual bleeding or clotting after it was removed, and I think there were 13. In 12 was one stick was successful. In one there were two sticks, and then on the end of it where there's a check box "yes" or "no" was there any problem when the IV was removed--it was--I'm paraphrasing now, 12 said "no," and one just didn't have an answer on either way.

So based on the fact that she was apparently successfully, you know, accessed her veins 12 or 13 times in all cases with one stick and one case with two sticks, that would indicate to me that her veins are accessible.

Q And would it change your opinion if you knew that a 23 gauge butterfly needle was used for those blood draws?

A Twenty-three gauge butterfly needle. Well, I mean, a 23 gauge butterfly needle is also sometimes used

for IV access. So it wouldn't--

MR. IHNEN: Your Honor, I'm gonna object. None of this is in his report.

THE COURT: All right. I'll sustain.

THE WITNESS: Sustain. What does that mean?

MS. MORRIS: I'll have to ask you a different question, Dr. Mansour.

THE COURT: Wait for a new question.

THE WITNESS: Oh. Okay. I don't watch enough television, obviously.

BY MS. MORRIS:

Q In your clinical experience, have you ever encountered any complications with vascular access in patients with thrombocytosis?

A Nothing out of the ordinary.

Q And in your clinical experience have you ever seen a patient with pulmonary hemorrhage with a suspected cause of thrombocytosis?

A No.

Q And in your experience, do you know if there's any relation between thrombocytosis and pulmonary hemorrhage?

A I--I don't believe there is. You know, over the years I treat leukemia, and it's when you don't have any platelets when you might see something, a rare event like

that; but when you do have platelets, that would--I'm just not familiar with any association with that.

Q And can you explain the difference between pulmonary hemorrhage and pulmonary edema?

A Yes. Pulmonary edema is a relatively common problem in which the little air sacs in the lung fill up with fluid, plasma type fluid that comes from the blood. It's usually seen in heart failure. So if you have a sudden heart attack and your heart won't pump, but--out--it won't pump the blood out, but the blood's being pumped in through the lung, the pressure difference between what's being pumped in and what can't be pumped out causes salt water to come out of the little blood vessels and fill up the little air sacs, and this is a very common heart problem. It's seen in emergency room. Just part of internal medicine, you know, training, and it's frequent. It's very frequent. It's just a well-known problem for people with heart disease.

Now, there's also pulmonary edema that is not cardiac. It's due to excessive inflammatory process which I can't really, you know, describe in any great detail and to where it--there's so many little different things involved. There is such a thing as noncardiac pulmonary edema, but the primary cause is a weak heart and it's very common.

Q Have you ever instructed any of your patients with thrombocytosis not to receive IVs because of the risk of complicating factors?

A No.

MS. MORRIS: Okay. Dr. Mansour, that's all I have for you right now.

No further questions, your Honor.

MR. IHNEN: Did we make this an exhibit?

MS. MORRIS: We did. I think it was--

THE COURT: That's Exhibit 22.

MS. MORRIS: And, your Honor, I do have Dr. Mansour's CV now. I'm not sure if we actually gave that an exhibit number.

THE COURT: It's gonna be 21.

MR. IHNEN: Could we see a copy of that exhibit so we can use it or would you be able to--

MS. MORRIS: Do you want me to pull it back up for you?

MR. IHNEN: If you'd pull it back up, yeah, that's be great--

MS. MORRIS: Sure. Absolutely.

MR. IHNEN: Just for a second.

MS. MORRIS: I'm on page 2. Do you want that page?

MR. IHNEN: Yeah, that'd be great. Thank you.

CROSS-EXAMINATION

BY MR. IHNEN:

Q Hi, Dr. Mansour. How are you?

A Fine, thank you.

Q And we've sort of been telling all of our witnesses this, but the camera's in front of us, but you're over here. So I may be turning both ways, and that probably explains some of the microphone problems as well. So I apologize in advance.

A Thank you.

Q This is the exhibit we were just talking about, and this is a medical record that you reviewed; is that correct?

A Yes.

Q Okay. And I believe you testified, and I don't want to get this wrong, so please correct me, that generally thrombocytosis is an elevated platelet count; is that correct?

A Yes.

Q And you estimated that range to be 150,000 to 450,000; is that correct?

A That's the general normal range. It's--occasionally it's 130,000, but most these tests you see have it off to the side, 150 to 450.

Q And then I believe you said around two percent of

the population on the upper end of that range could be around 550; is that correct?

A Well, it's 525. The--

Q Five twenty-five?

A The--yeah, that's--the standard deviation's here at 75. So it's 300,000 with two standard deviations above, which is 450; and two standard deviation below, which is 150. But there's a two-and-a-half percent of the population is in the third standard deviation, which would be a 75,000 higher and 75,000 lower than what they publish as the 95 percent normal range.

Q And that was my mistake. I just wrote that number down wrong. So I apologize.

A Okay.

Q Can you read what Ms. Pike's platelet count was on this document?

A Yes, seven--either seven hundred and six or eight. I can't see that last--

Q I think it's a six?

A Think it's--six? Seven hundred and six thousand.

Q And so that would be beyond this elevated range; is that correct?

A That's correct.

Q And is that significantly beyond this elevated range?

A It's significantly beyond 450,000. It indicates that--that she probably has a primary cause or secondary cause and not just one of the two-and-a-half percent population. It's just a little above the range.

Q And when you talk about primary or secondary cause, you're talking about the CALR mutation or the--

A Yeah. That would be primary.

Q Okay.

A That's a bone marrow disorder. So if it originates in the bone marrow from a mutation, that's a primary--they call a primary. If it's secondary to something like iron deficiency, that's secondary. It'll go away if you correct the iron deficiency.

Q Okay. Thank you. I just wanted to go over a couple of things that you--you testified to. You said that you've testified six to seven times. Does that sound right?

A Yes. I mean, I'm going by memory over 40 years, since 1986. So that's in court.

Q And what types of cases were those, generally?

A Well, they generally had something to do with either blood disorders or cancer, even if there was internal medicine type, you know, issues associated with it. But I don't think I've ever testified outside of blood or cancer or internal medicine.

Q Were those things like medical malpractice lawsuits, things like that?

A I think they were--one of them was a asbestos case. That was video testimony, video thing, not--I wasn't in court, but the others were related to malpractice cases.

Q And--

A As I can remember.

Q I won't hold you to that.

And same--same thing for the depositions. You said you've been deposed around 10 times. Is that generally the same type of case?

A Yes. There's occasionally--you know, there's someone with--who is disabled or something about how their disease would disable them and they weren't--they felt like they were shortchanged about how they were treated. That's not--that would be maybe one or two, but most of them had to do with being above or below a standard of care in a case.

Q Understood.

You said the last time you placed an IV was around 15 years ago; is that correct?

A I mean, yeah. It's hard to know 'cause--

Q We won't hold you to that, Doctor.

A --it--15 could be a number. Let me say, you know, as old as I am, it--I mean, it could be 20, but I've

done a lot of IVs in my time and--but it's--now I just supervise people who do it.

Q Understood.

I couldn't tell exactly from your report, but you don't dispute that Ms. Pike does--has been diagnosed with thrombocytosis; is that correct?

A Yes. She has primary thrombocytosis. I didn't see the CALR mutation report, but I just saw references that she had a CALR mutation. I have no reason to doubt that.

Q And she has not been diagnosed with von Willebrand disease; is that correct?

A Well, not that I know of. They did run the study, but not that I know of. There was a--I did see a document that said that she had a low von Willebrand. I can't exact--remember the exact wording, but there was something about low von Willebrand protein or something causing something. So I was, you know, when I saw in the record that she had the stuff measured, I--you know, caught my eye.

Q What would the low von Willebrand Factor mean? What would that--what does that diagnosis mean?

A Well, when we're working on patients who have this disorder--remember, this is a disorder that goes on, many times, 20, 30, 40 years. Sometimes would--if the

platelet count's very high, like a million and a half plus, two million, we might do a bone marrow test on and they--they just keep on oozing blood. We have to--you know, abnormally. So it's a paradoxical bleeding caused by the platelets soaking up the von Willebrand protein like a sponge, resulting in a low level, which then can be associated with some abnormal bleeding. It's...

Q And you did--you saw that in Ms. Pike's records, you said?

A No, I didn't see that. I--well, I saw--I listed the things that I was sent--I mean, not--to read. I list the things that I read, and it's in one of the documents. I got it--received a document from the Tennessee Department of Correctional Lethal Injection Protocol, and some Christa--was not in these medical records. Expert--expert report of Joel Zivot, then a supplemental report, a report from Bethany Brand, and a--some paper about botched executions, Penal--death penalty information center. Those are the ones that I can tell you for sure that I read, and in one of these documents is something about her having a low von Willebrand protein.

Q Okay.

A I think it's in the report of Dr. Zivot, but I'm not sure.

Q Okay. And I believe you--you defined--well, you

said that Ms. Pike has low risk essential thrombocytosis; is that correct?

A Yes. I mean, that's--I'm agreeing with her hematologist who put that down in their notes from these visits.

Q And I--

A She meets the criteria.

Q And I believe when counsel for the state asked you what low risk meant, you said that she is low risk for strokes; is that correct?

A Well, she's low risk for thrombotic events. Stroke is one. Some lost vision in the eye is one. A heart attack is one. Then there's some rare--you know, some other rare things that you could have like a--you know, could block an intestinal blood vessel. That's very rare, but if you have some kind of event like that, sometimes what's behind it is essential thrombocytosis.

Q And you testified that pulmonary edema can be caused in some cases by excessive inflammatory processes; is that correct?

A That's correct.

Q Can you explain what an excessive inflammatory process would be?

A Sure. The patients in the ICU that get what's known as the sepsis syndrome, they have bacteria

circulating in their blood. Their blood pressure drops. Their--their organs, like the liver, kidneys, they get underperfused. They're in shock. And then at the end of that shock, they may start to recover, but they have a lot of tissue death. Like they get severe liver injury. They get acute renal failure. Well, that produces inflammation from blood cells called lymphocytes, monocytes, and sometimes white blood cells commonly known as granulocytes, and they spew out a whole lot of chemicals to--to initiate a very severe inflammatory reaction, and it doesn't get localized.

It--it's generalized, and it affects the lung in a way that the lung--little small delicate blood vessels in the air sacs of the lung called the capillaries, get to where they can't hold salt water as they normally do on the inside of the tube and it just leaks into the tissue, and it fills up the air spaces with basically salt water and inflammatory proteins. That's probably the most common example. We also see nematology a lot from some of the neuro treatments to excite the immune system against cancer.

Q Would a caustic, highly alkaline pharmaceutical cause an excessive inflammatory process?

MS. MORRIS: Objection, your Honor. This exceeds the scope of direct.

MR. IHNEN: They asked him about pulmonary edema. I'm asking him potential causes of pulmonary edema.

THE COURT: This is your witness and this is cross. Do you practice in federal court a lot? In Tennessee we allow cross-examination that'd exceed the scope of direct. So I'll overrule. I don't know what they do in federal court.

Q Dr. Mansour, my question was could a--could a caustic, highly alkaline pharmaceutical drug trigger this excessive inflammatory process?

MS. MORRIS: I'll object--

A I don't know.

MS. MORRIS: I'll object again, your Honor. This exceeds the scope of his expertise. He is not an anesthesiologist.

THE COURT: Well, I mean--

MS. MORRIS: I think we're leading down the road to pentobarbital, and I think that exceeds the--what he has been admitted as an expert to testify to.

THE COURT: I'm gonna allow him to testify.

None of these experts--I mean, we're dealing with an unusual situation. The American Medical Association doesn't have an expert for credentialing for death by execution in any form, and so I'll just allow this and factor all this into the weight, but I'm gonna let you

proceed and ask him the question. I don't know what he's gonna say, but--

MR. IHNEN: I think he actually answered that question.

BY MR. IHNEN:

Q Could you repeat your answer, Dr. Mansour?

A Yeah. I don't know. That's way out of my knowledge range. I used examples of noncardiac pulmonary edema for things that I see that I know are very common, like septic shock, and--and when it happens, when we administer an immunological T-cell called a CAR T-cell, and that's--you know, that's within my realm of knowledge.

Q You reviewed 13 different phlebotomy reports; is that correct?

A Yes. I may have lost count. I think there was 13. I could have--it's either 12 or 13.

Q Okay. And can you explain the difference between phlebotomy where you're drawing blood and intravenous access?

A Yes. In phlebotomy you take the needle, which could be--well, the needle, you could either directly do it with a needle or you could do it with what's called a butterfly IV or an IV type catheter, and you select a vein. You put a tourniquet on the arm, and that way the blood builds in the arm and makes the vein swell a little bit,

and then, of course, you clean it off, and you insert either the needle, the butterfly, or the I--or the intra cath type IV into the vein, and then it's--there's several different connecting mechanisms, but you stick a tube that has a vacuum suction in it, puncture it with the back end of that needle, whatever contraption's on the back end, and the blood flows into the tubes to send to the lab; and then if you're just drawing blood, just doing a simple phlebotomy, after you get one, two, three, four, five, seven, eight tubes of blood, then you withdraw the needle, hold a little pressure, and put a Band-Aid.

To insert an IV catheter, you start out the same way. You put a tourniquet on the arm. You clean the skin. You find the veins that pop up because of the back pressure from the blood not being able to flow forward toward the heart, and so you pick out a vein, and you take one of the two types of--usually one of the two types of catheters, one called the butterfly or one called the intra cath and you--it has a needle in it, and you stick it in the same way that you do if you're gonna draw blood; and in the case of the intra cath, which is some kind of nonmetal outer tube, you slide it forward and then you just hook an IV to it and tape it, and--so you don't remove it immediately, and then it's there--different hospitals have different rules. Some say you can leave them for three days. Some

say you can--don't have to--leave them until they--unless they get inflamed. But other than removing it, it's very similar procedures.

Q Does a--

A Other than if you remove it.

Q Does a--

A I'm sorry. I--

Q You're fine. The--I think the delay is--is awkward for all of us.

Does a patient who has successful blood draws always have successful IV access?

A You know, the word "always" means a hundred percent, and so my answer is nothing's a hundred percent.

Q Okay. In your experience?

A My experience is if--if you use the same vein, you know, which it's usually in--it's not--it's in the elbow crease, okay, if--if you can access that for IV for blood draw, that could be an IV access site, yes.

Q If you can't access the vein in the elbow, does your answer change?

A I'm sorry. Say--please repeat that once.

Q If you can't access the vein in the elbow here like you were saying, does your answer to that question change?

A Well, that's the largest vein usually you could

see in the arm underneath the thinnest part of the skin, and so if you can't access it, you know--and, of course, you can draw blood from any vein in the arm, but if you can't access that one, then it's probably going to be difficult to find another one.

Q When you reviewed Ms. Pike's phlebotomy records, did you see where they were drawing blood?

A I did not look at each one. There's--there's about, I don't know, must be 10 or 12 different possible sites, and they just check off one. I didn't look for the pattern.

Q Almost done, Dr. Mansour. I believe you testified that you reviewed two platelet counts from the last two years, and then we pulled up the recent two; is that correct?

A I'm not sure I said, but in my report, I listed three from the--the clinic I--the blood clinic that--so I know there were three there and then there were two more that I saw.

Q Were those--

A They were in different reports.

Q Were those the only platelet counts that you reviewed?

A I'm sorry. In my report item No. 11, I reviewed four. I listed 573, 525, 660--okay. Those were the three.

And then there were--yeah, the two more. Those--I didn't notice the 706 or the one that you showed me. I didn't notice 'cause it wasn't in the--I was just looking at the blood--the CBC report, and so I didn't notice that one that you pointed out. All the five that I saw, there was an actual complete blood count report, you know, that had all the different elements, and I was--those are the ones I reviewed.

MR. IHNEN: Your Honor, I'd like to mark this. May I approach?

THE COURT: Sure.

Q Dr. Mansour, you--you talked about paragraph 11 of your report. Those were medical records provided to you by the TDOC in this case; is that correct?

A I'm sorry. Can you--you used an abbreviation there that I might not know what that meant.

Q That's--yeah, that one's--that's on me.

The Tennessee Department of Correction, the Attorney General's Office provided you all the records that you cited in your report; is that correct?

A Yes, that's correct.

Q We're pulling up an exhibit right now, or trying to.

Okay. And, Dr. Mansour, will you look at the bottom right of this record.

A The bottom right?
Q Where it says "State v. Pike."
A Yes.
Q And are these--
A I see.
Q Are these the records that were--you were provided?
A Well, I saw, you know, two different records with that--that TN on the top, but I think the records where I gave the platelet count was something like in Meharry College maybe of Medicine. It was a--started with an "M." It was a--there were a virtual--virtual video visits with a hematology clinic. I'm not sure they had that TN--yeah. I don't--I'm not sure they had this on it. I'm not--it could have, but one was--I got the impression it was from a hematology clinic, and for some reason I got the impression it was from Meharry Medical University, but...
Q Okay. Could you read what it says in the narrative section at the bottom of this record?
A The narrative section. Okay. Now, this is very small. Let me see if I can just--
Q We're gonna--
A --make it enlarge a little bit.
Q --blow it up here for you.
There we go.

A Oh, there we go. Okay.

"Assessment type: Narrative: CCC completed. Hematology followup consult completed 3/21/25, six-month followup requested. Labs completed with platelet of 509. Medication renewal completed."

No, I didn't see that.

Q Okay.

A Now, I--could have been in the document, but I didn't see it because I was only looking for--for the CBCs. I had already seen some that had the full report. So I was just looking for full reports as I was moving up and down these pages.

Q Okay. But you would agree with me that 509 is above 450?

A Yes.

Q Okay. Let's go to the next page.

Now, this might be one that you have seen. Does this one look familiar?

A Yeah, that--well, the, you know, CALR mutated essential thrombocytosis looks familiar because I've seen that in several of the notes.

Q Okay. Could you read on the bottom right--under "Lab Results" can you read what that platelet count is?

A Six hundred and seventy.

Q Okay. And you don't cite that one in your

report; is that correct?

A Yes. Again, the only reason is, is that it wasn't--it wasn't--I was just looking for actual CBC reports.

Q Okay.

A And--

Q Let's go to the next one.

A I'm not concerned about 670. I wouldn't try to hide--that's what I was looking for. Those were the kinds of reports where I was looking for the platelet count.

Q And I believe this is one of the ones that the state showed you. This has been an exhibit--this is from November and the platelet count was 433. We covered this one, correct?

A Yes.

MR. IHNEN: Okay. Can you go to the next page.

Q And, again, I believe you were shown this one. This was from May of 2026, and this was four--

A Yeah.

Q --fifty-two, correct?

A Correct.

MR. IHNEN: Okay. Can we go to the next one.

Q Okay. This one looks like it's from June of 2025 and the platelet count is 509. Do you see that?

A Yes. I--I haven't seen this one before in this

format. I would have looked for this format.

Q Okay. So you have not seen this record before?

A Not this particular record, 'cause this is the format--this is a machine printout of the actual measurements.

Q But these are--

A That's how they--

Q I'm sorry. Doctor, go ahead.

A I'm sorry. That's why I was looking for them. When you have a big document and you're looking for the results, you look for this pattern. You know you're gonna find what you want in this pattern. I--I didn't see this one.

Q If this was in the records you were provided, would you have cited it?

A Yes.

Q Okay.

A I'm pretty sure I'd have seen this one 'cause I'm looking for that pattern.

MR. IHNEN: Okay. Can you go to the next page.

THE COURT: Excuse me, Counsel. You asked him the date on the 509?

MR. IHNEN: Can we go back to the...

BY MR. IHNEN:

Q Okay. And can you read what date this was?

THE COURT: Where's the date? I'm--

A The date's--creation date 6/6/2025.

Q So this would have been June of 2025, correct?

A Note: Exclamation mark--yeah, 'cause this came out of the lab machine.

Q Okay.

A 'Cause it's explaining what the exclamation mark means.

THE COURT: It says, "Document creation date 6/6/25." Is there anywhere on there shows where the blood--when the blood was drawn?

MR. IHNEN: Your Honor, the state has put two exhibits in, and they have held the date as the document creation date as the date of the--of the record, and so that's the only thing that I know to go by.

THE COURT: Well, I'm--

MS. MORRIS: Your Honor, it's collection or observation date and time.

THE COURT: Where is that on--

MS. MORRIS: It's a few lines down below "creation." It's the same date.

THE COURT: I would anticipate it'd be relatively--I see where it is. Now I know where to find it. So that one was collected on 6/6/25.

MR. IHNEN: Can we go to the next one.

BY MR. IHNEN:

Q Okay. And, again, can you read the platelet count on this one?

A 581,000.

Q Now, this one's not in your report either. Have you seen this document?

A Let's see the date. I don't think so, 'cause I would have--I would have found that--

Q Let's go to the next page. It's a little--this one's kind of hard to understand. Maybe the state can help us. So the document creation date on this one is August of 2025, but the collection or observation date is June of 2025, and I'm not really sure which one is the blood draw. Do you have--

A May I--I don't know. May I just help you with that?

Q Please.

A The blood is only gonna be useful, you know, for about 24 hours. So whenever this thing was created, it had to have been drawn within at least 24 to 48 hours. So it's approximately that time of the month.

Q So for this record then, we can assume that this document was created on 8/9, and that's when the blood was likely drawn, somewhere around there?

A Yeah. Now, that's the chemistry profile. Can

you go back up to the complete blood count? It's probably the same, but since we're--okay. So they're kind of all together. So I would assume that--personally, I would assume that.

Q Okay. Have you seen this document?

A No, I didn't see that one.

Q Okay.

A Now, listen, I'm not saying they didn't send it to me. Sometimes, you know, you get sent an overwhelming number of documents, and you try and find the ones that have the clinical data, and so I didn't find this one, but there--there was an overwhelming number of documents and I--you know, it could be they sent it to me and I didn't open this one up.

Q But you were looking for this type of document in those records, correct?

A I was looking for that pattern in the medical documents.

MR. IHNEN: Okay. Can we go to the next one.

Can you blow that up, please.

Q And, again, platelet count on this one?

A Let me see. There it is. 695,000.

Q Okay. And this one's not in your report either; is that correct?

A That's correct.

Q Okay. If we go to the next page, I think--

THE COURT: What's the collection date on that one?

MR. IHNEN: It's on the next page, your Honor.

THE COURT: Okay.

THE WITNESS: Let's see.

Q Document creation date?

A 8/9/2025.

Q Okay. I believe the next one was cited in your report.

MR. IHNEN: Can you go to that one.

Q Okay. And the platelet count on this one is 573. You note that in your records. Is that--in your report; is that correct?

A I did have a 573. What's the date on this one?

Q Well, see, we get back in the same issue. This one says 8/9/2025 also.

A But I don't think I--I don't remember seeing one from 8/9, but it's possible. You know, you can have the same platelet count a year apart. So if you--via the same number, but a different visit.

THE COURT: I think it's really important that we try these--with these different numbers to get collection date with all of them, the best we can.

MR. IHNEN: Your Honor, your guess is as good as

mine. These are records provided by the state. I can't make here or there from them either.

THE COURT: So what is that on the screen? It says the collection date of June 18th of '25?

BY MR. IHNEN:

Q Doctor, the question being asked by the Court is so there's a--on this page in particular, there's a document creation date of August 9th, 2025, 4:28 a.m. Do you see that?

A I'm sorry. I was looking at something. Does--can you repeat that? I'm sorry. Oh, okay. I got it. 8/9/2025.

Q And then right below that--whoops. Right below that it says, "Collection or observation date/time: 6/18/2025." So we're, in the court here, are having some trouble figuring out when the draws were actually made. Can you help us with that?

A Yes. This date, creation date, is at the end of the sentence that explains what the markings are on these blood tests okay. They--wasn't sent to a flow sheet. I think that's machine created, and I think that the same machine that created that created this--these records, you know, these numbers. So I believe that this creation date is--goes along with these blood tests, but I have--you know, you might say that's my best guess.

IN THE SUPREME COURT OF TENNESSEE
AT NASHVILLE

STATE OF TENNESSEE	)	Criminal Court for Knox County
	)	No. 58183A
Respondent,	)	
	)	No. M2020-01156-SC-DPE-DD
VS.	)	
	)	Special Master W. Mark Ward
CHRISTA GAIL PIKE	)	
	)	
Movant.	)	

EXPEDITED TRANSCRIPT OF THE EVIDENCE

Volume 5

(Proceedings on August 12, 2026)

THE HONORABLE W. MARK WARD, PRESIDING JUDGE

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Q Okay.
A Yeah. Oh, yeah. Here's another one.
Q And then here's one more, and the platelet count on this one is 660; is that correct?
A Yes. That one's in my report.
Q Okay. And you cite that one as March 2025?
A Yes.
MR. IHNEN: Okay. That's all I have, your Honor. Thank you, Doctor.
THE WITNESS: You're welcome.
THE COURT: Are you gonna mark this--
MR. IHNEN: Oh, yes. Can we make that an exhibit?
THE COURT: We're gonna mark this Exhibit 23.
(Exhibit 23, received in evidence.)

REDIRECT EXAMINATION

BY MS. MORRIS:

Q Dr. Mansour, I know we just reviewed a lot of numbers and dates. It appears that from her medical records we've got platelet counts spanning from 433--430 to 690,000 over the matter--over the course of a few years. Does that change your opinion that you provided today at all, knowing that her platelet count has fluctuated so much over the past few years?
A No.

Q Could you explain why a fluctuation of a platelet count is not a concern or why it would not change your opinion?

A Well, you know, as a hematologist, I look at these numbers in grids over--you know, for patients like 20 times they were drawn, 40 times they were drawn. We graph them. You know, they do fluctuate up and down. Now, if they fluctuated from 700,000 to 100,000, I would have to say something happened. Should be some kind of event you could explain. But--going up 20 to 40 percent in--and let's say if you average them all, they're, you know, 550 to 575,000, but you get 450 sometimes and 750 sometimes. It's just an observation. That's just the way it is.

Q And these elevated platelet counts, in your opinion, do they raise the risk of pulmonary edema for Ms. Pike?

A No. Not--I don't know of any association there. It continues to be--with all these numbers, it's low risk essential thrombocytosis. Essential as established by the CALR mutation and age under 60 and the consistent treatment of aspirin by her doctors who are hematologists.

Q I think there was some discussion earlier about a document that you reviewed that mentioned the von Willebrand Factor and possibly that Ms. Pike had a low von Willebrand protein. Is--does this document on the screen--

does this document that's on the screen look familiar?

A There were two by this expert. There was one and then there was an addendum. So I read them both. You know, I mean, I'm not an anesthesiologist. So I was, you know, skimming them, 'cause I would not testify as an anesthesiologist, but I did--I did read both of them.

Q And did you also review the prehearing brief of Ms. Pike?

A The prehearing brief? I don't know--I'm not even sure what that is, honestly.

Q Okay.

A The prehearing brief. Is that--was that the title?

Q It--it was.

A Yeah. There's something I reviewed that had the name of "Pike" in it, but I'm not sure it's the document to which you refer.

Q Okay.

A I have my list. I can tell you what the name of it was.

Q That's okay.

A Okay.

Q Paragraph 8 here in Dr. Zivot's report, I think--is that what you were referring to when you mentioned that you had read something about the von

Willebrand Factor somewhere in the record?

A Let me see. Yeah, where is the term "von Willebrand Factor"--the end of that paragraph, "leading to bleeding as the excess circulating platelets consume another critical blood-clotting component known as von Willebrand Factor."

Yes. I saw that.

Q And based on your review of Ms. Pike's medical records, do you think that her platelet counts could lead to dangerous bleeding as a result of the consummation of the von Willebrand Factor?

A No.

MS. MORRIS: No further questions, your Honor.

Thank you, Dr. Mansour.

MR. IHNEN: Can you leave that up on the screen.

RECROSS-EXAMINATION

BY MR. IHNEN:

Q Just real briefly, Dr. Mansour, that very last sentence, "a very high platelet count," do you see where I'm reading?

A Yes.

Q Okay. Do you disagree with anything in that sentence?

A No.

MR. IHNEN: Thank you.

THE COURT: All right. Doctor, I have a few questions for you. What would you consider a very high platelet count?

THE WITNESS: For the von Willebrand Factor (indiscernible) 1.5 to 2 million.

THE COURT: So are any of the numbers that you've seen with regard to Ms. Pike, in your opinion, qualify as a very high platelet count?

THE WITNESS: No. I mean, not very high--not 1.5 to 2 million.

THE COURT: Would you say that her risk for bleeding or being--or any of these other catastrophic events is affected by whatever the level of her platelet count is?

THE WITNESS: I don't believe that any of the platelet counts that we've reviewed will have an effect on this patient as long as she takes her baby aspirin as she has been doing.

THE COURT: Well, that wasn't my question, Doctor. My question--

THE WITNESS: Okay.

THE COURT: --was whether or not--

THE WITNESS: Can you--

THE COURT: --the level of the platelet count affects her risk for any of these events.

THE WITNESS: The level of--of her platelet counts that we reviewed?

THE COURT: Well, let me--let me just--

THE WITNESS: I'm not trying to be difficult, but, you know...

THE COURT: No, no, no. I'm--I'm--the problem is not you, Doctor. It's my phrasing of the question. I had an expert in here yesterday say that the platelet level doesn't change the risk for someone. They would have the same risk at 452 as they would at one million, that the level of it changes doesn't change the risk. I'm asking you is, is what changes the risk, whether it's the level and--or is a four fifty--452 million the same as a 1.5 million risk?

THE WITNESS: No. If you're 1.5 to 2 million, you do have a risk of a depleting von Willebrand Factor, but you could prove it by testing it. But if you're somewhere between 450 and a million, I think it's unlikely that it changes the risk.

THE COURT: Okay. But that would--whatever the risk is would depend on what the platelet count is on the day of execution; is that correct?

THE WITNESS: Yeah--well, can you define the risk--I mean, what the risk--

THE COURT: In this case we're primarily talking

about the risk of blood--blood clotting, the risk of pulmonary edema, the risk of excessive bleeding. It was testified to that that risk exceeds those of normal people and exceeds it greatly with the numbers that we have here.

THE WITNESS: Okay.

THE COURT: There was also testimony that it doesn't matter what the--if the levels come to normal. It's the same risk. So I kind of want your opinion on that, and I know that question made no sense.

THE WITNESS: Well, it's a difficult question because, again, I don't know anything abut what's gonna happen on the day that this is important to you. I have no expertise in that event. All right. So ordinarily--I'm gonna have to talk about average patients. For the average patient, this is--this patient is not at high risk of anything more than having higher than normal risk of a clot, you know, spontaneous, for her age. It's just a small increase which is ameliorated by aspirin. If you were to ask me if she got run over by a Mack truck and had 40 fractures and a broken pelvis and contusions to the lung, does it matter; well, it'd probably be a complication in there somewhere, but for the average patient, no.

THE COURT: I guess what I was--

THE WITNESS: I should say "person."

THE COURT: What I was trying to say, you're

saying that a person with this would have some risk of excessive blood clot; is that correct?

THE WITNESS: Yes. That's why we treat it with aspirin.

THE COURT: Okay. My question was, would that be the same risk for someone at 500 million as it is for someone at one million or does the risk increase for the person with one million or is it just the same and there's no real distinction?

THE WITNESS: No, I--the risk of clotting, thrombosis?

THE COURT: Yes.

THE WITNESS: I think it--you know, it's not like a light switch is on and off. It's what we call a "continuous variable." So your risk isn't very high at 800,000. It's a little higher at a million. It's higher at four--1.4 million. It's much higher at 1.8 million. It's a continuous variable.

THE COURT: Okay.

THE WITNESS: And I hope I'm not confusing you with that--

THE COURT: No, I think you--

THE WITNESS: --but that's the way--

THE COURT: Actually, I think you--

THE WITNESS: --it is.

THE COURT: --finally answered my question.

THE WITNESS: Okay.

THE COURT: I appreciate that. That's the only question I had.

Did it trigger anything for the lawyers?

MS. MORRIS: One question.

THE COURT: One question. Okay.

I'm sorry. You could have got out of here if I hadn't asked that last question.

THE WITNESS: All right.

REDIRECT EXAMINATION

BY MS. MORRIS:

Q Dr. Mansour, is Pike at a higher risk if she had--based on her medical records, of clotting or pulmonary edema any higher than any other normal patient?

A So I--she's not at a higher risk for pulmonary edema unless she has a heart attack. Is she at higher risk of clotting? Well, she's at a little higher risk of a person who doesn't have essential thrombocytosis, and that's why she's treating with aspirin.

Q But if she is taking her aspirin as treatment for thrombocytosis, then is her risk higher than the average patient?

A I'm gonna have to say that I can't be absolutely concrete about that. I don't think so, but I can't be

absolutely concrete because I don't think there's any data that when you look at a continuous variable and you're at the low ranges, 500, 600, 700 thousand, I don't think there's really any data on that, but we do use aspirin just to reduce the risk if it's there.

MS. MORRIS: No further question, your Honor.

Thank you, Dr. Mansour.

THE WITNESS: You're welcome.

THE COURT: Okay. You're off the hook, Doc. Thank you for your testimony.

THE WITNESS: Thank you very much. I'll get off your phone call now. Leave you alone.

THE COURT: That's all right.

(Witness was excused.)

THE COURT: All right. Lawyers, I guess, y'all ready for lunch? How long would you like today, or do you have a witness coming at a certain time?

MR. IHNEN: Well, he won't be available till around 12:30. So I think now is a good time to break for lunch, but we--we would like more than 15 minutes for lunch, your Honor.

MR. AYERS: Could we do 45 minutes?

THE COURT: Let's see, let's come back at one o'clock. All right. We're in recess.

(Noon recess was taken.)

THE COURT: All right. Are we ready to proceed?

Call your next witness.

MR. FERRELL: Your Honor, the movement--the movement--the movant calls Dr. Scott Goldstein, who I believe is the SG there--yes.

Dr. GOLDSTEIN: Good afternoon, your Honor. Good afternoon, Counsel.

MR. FERRELL: Good afternoon, Dr. Goldstein. Could you please state your name--oh, I'm sorry. Swear him in.

THE COURT: Thank you.

Raise your right hand.

(Witness was sworn.)

SCOTT GOLDSTEIN, D.O., called as a witness, being duly sworn, was examined and testified via video as follows:

DIRECT EXAMINATION

BY MR. FERRELL:

Q Good afternoon, again, Dr. Goldstein. Could you please state your name and spell it for the record.

A Scott Goldstein, G-O-L-D-S-T-E-I-N.

Q Okay. And what is your occupation and place of employment?

A I currently work at Temple University Hospital where I am an emergency medicine physician and the chief of

EMS and Disaster Medicine.

Q And how long have you been an emergency medicine physician?

A I've been an ER physician for approximately 24 years.

Q And how long have you been employed at Temple University Hospital?

A Three years.

Q And before that where were you employed?

A I was employed at which is now Jefferson Einstein Hospital for 12 years.

Q Okay. And what is your specific role at Temple University Hospital?

A I'm a clinically practicing emergency medicine physician, which is a level one trauma center, along with additional responsibilities of being the medical director for Temple Hospitals, EMS inter facility prehospital assistant.

Q And once again, how long have you been an emergency medicine physician?

A I've been an emergency medicine physician for 24 years and teaching a specialty for over 20.

Q Okay. Thank you. Do you have--in addition to medical school, do you have any other training or fellowships?

A I'm trained in prehospital medicine by additional courses I've taken and through just experience.

Q Okay. Have you ever testified in court or by deposition?

A Yes.

Q And were you certified as an expert in emergency medicine in any of those proceedings?

A Yes, I was certified as emergency medicine specialist in 2021.

Q Okay. And we'll put up the screen, your CV, and I'll share it with opposing counsel.

MR. FERRELL: May I approach.

Q Dr. Goldstein, do you see the document on the screen?

A Yes.

Q And do you recognize that document?

A Yes, that is my CV.

Q And does it fairly--that fairly and accurately summarize your professional expertise in the field of emergency medicine?

A Yes.

MR. FERRELL: Your Honor, I'd move for admission of his curriculum vitae.

THE COURT: All right. Let's see. That's gonna be Exhibit 24.

(Exhibit 24, received in evidence.)

BY MR. FERRELL:

Q Dr. Goldstein, do you have any experience training other emergency medicine professionals?

A Yes, I am a clinical associate professor, and I've been training other emergency medicine professionals for over 20 years.

Q And does that require you to have a general knowledge of the training and qualifications required for emergency medical personnel?

A Yes.

Q And does that cover a wide range from physicians down to emergency medical technicians?

A In my specialty as a prehospital provider and emergency medicine, it has me encompass physicians all the way down to prehospital providers of all levels including EMTs, yes.

Q All right. Thank you. And in your personal experience as an emergency room physician, have you ever been exposed or treated someone who has committed a hanging suicide or tried to commit a hanging suicide?

A Yes.

Q So you have treated patients who were brought to you after a hanging or an attempted hanging?

A That is correct, yes.

Q About how many of these cases would you say you've worked over the last 24 years?

A I'd have to approximate 20 to 30.

Q Okay. And have you ever authored any chapters in textbooks or articles about hanging?

A Yes. I authored an online article on Medscape about hanging and strangulation specifically, and two other textbook chapters about neck anatomy related to surgical airways.

Q And is it accurate to say that you have experience with death by hanging through your work as an emergency medicine physician and also that you've gained some knowledge of hanging through independent research?

A Yes.

MR. FERRELL: Okay. Your Honor, based on the testimony of Dr. Goldstein and his CV, I move that he be accepted as an expert in the field of emergency medicine and in hanging.

THE COURT: Voir dire?

MR. WICKENHEISER: Yes, your Honor.

THE COURT: So emergency medicine and hanging are--

MR. FERRELL: And hanging.

THE COURT: --his two--okay. All right.

VOIR DIRE EXAMINATION

BY MR. WICKENHEISER:

Q Hello, Dr. Goldstein. How are you doing?

A Fine, thank you.

Q My name is David Wickenheiser. I work for the Tennessee Attorney General's Office.

Could you tell me--could you remind me what your board certifications are.

A I'm board certified in emergency medicine and emergency medical services.

Q Are you a forensic pathologist?

A No.

Q Have you ever designed a hanging protocol for a state?

A No.

Q Have you ever reviewed a hanging protocol for a state?

A No.

Q Have you ever--you mentioned in--in your experience that you had treated individuals that had attempted hanging; is that correct?

A Yes.

Q Were any of those individuals judicially hanged?

A No.

Q Have you ever autopsied someone that was hanged?

A No.

Q Have you ever autopsied someone that was judicially hanged?

A No.

Q Would you--is it your opinion that hanging is a medical discipline?

A If it is not done to death and they're brought to emergency medical room, it becomes a medical trauma evaluation.

Q Is there a--are there special focuses that you can get in emergency medicine related to hanging?

A I am unaware.

MR. WICKENHEISER: Your Honor--

THE WITNESS: None that I believe.

MR. WICKENHEISER: --the state does not object to--to calling Mr. Goldstein as an expert in emergency services. I think given Mr. Goldstein's lack of knowledge related to judicial hangings, specifically, and also not really understanding exactly what hanging would be as an expertise, we would object to him being certified as an expert in hanging, generally, and we would ask that he not be certified as such.

THE COURT: Well, I'm gonna allow you--you want to try to ask him a few more questions to see if he really is an expert in hanging, I'll let you go ahead.

MR. FERRELL: Yes, sir, and I'll--just to be

clear, experts in judicial hanging in this country would be rare at this point since there aren't currently any states practicing that.

THE COURT: Thank you--thank you for your admission.

MR. FERRELL: Yeah, but a physician who has treated people who have been hanged and--or have hanged themselves and has knowledge of the structure of the neck and the process by which death could occur by hanging, those are the things that he will be opining on.

THE COURT: You want to ask him some more questions?

MR. FERRELL: Sure. Sure. I'll ask him some questions.

THE COURT: I mean, I'm struggling--I agree with your first statement that finding an expert in hanging in this country is gonna be very rare. I have no problem with him being an expert in emergency medicine, but you've come up with the category of an expert in hanging, and let's be clear, hanging is a kind of generic term.

MR. FERRELL: Correct.

THE COURT: And his experiences were all with suicide, whether these suicides were by strangulation or whether they were by hanging, whether they were--what--I don't have a clue--

MR. FERRELL: Then let me ask him.

THE COURT: Yeah, and--and what his real experience is has nothing to do with what you want him to testify about, judicial hanging, but I'll let you attempt to prove otherwise.

MR. FERRELL: Okay.

THE COURT: And I just want to make a comment, I think I made it before, when I was a child, I would go to the encyclopedia and do a book report, and if he did a book report on hanging, does that make him an expert in hanging?

MR. FERRELL: I think when someone has--I think many areas of expertise are based on people's research and interest in that and when someone has published articles about it, when someone has authored chapters in textbooks about it.

THE COURT: Well, has he really published an article about hanging, or did he publish an article about suicide?

MR. FERRELL: It was about hanging.

THE COURT: Well, you can ask him about that.

MR. FERRELL: Okay.

DIRECT EXAMINATION (Cont.)

BY MR. FERRELL:

Q Dr. Goldstein, could you--let me go ahead and finish this first. The document that's on the screen right

now, do you recognize that document?

A Yes.

Q And what is it?

A That is the letter I provided at the request of the counsel for Ms. Pike.

Q And does it contain opinions that you formed in preparation for this litigation?

A Yes.

Q And are those opinions true and accurate to the best of your knowledge?

A Yes.

MR. FERRELL: I move that the report be admitted.

MR. WICKENHEISER: No objection.

THE COURT: All right. We're admitting it as evidence? I haven't qualified him as an expert and it's full of opinions.

MR. WICKENHEISER: Well, your Honor, I mean, I think we don't dispute that he would be an expert on emergency medicine. I think that there are things in here that probably extend beyond the scope of that, but, you know, we do think he's gonna come in as an--as some sort of expert. I don't think he's an expert on hanging, for instance.

THE COURT: So you're withdrawing your objection to let him testify?

MR. WICKENHEISER: No, sir. We--we would object to this coming in until he's been tendered as an expert.

THE COURT: Okay. Let's proceed a little bit further.

BY MR. FERRELL:

Q Dr. Goldstein, could you talk about your--the article that you authored on hanging and basically what is the gist of that article.

A Was an article written for Medscape, which is a universally accepted area for people to find medical opinions on hanging and strangulation, not necessarily related to suicide, but the process of hanging and strangulation in general. That was written for Medscape. I've had other chapters, like you alluded to, related to the structures of the neck, related to advance airways in the neck.

Q Okay. And on the--on the topic of hanging, in the mechanism of hanging, how does the person become dead in a--

A There's two methods.

Q Excuse me--in a judicial hanging, how does the hanging achieve the death of the person?

THE COURT: Wait a second. You're trying to qualify him as an expert in judicial hanging.

MR. FERRELL: Yes. Okay.

BY MR. FERRELL:

Q Okay. If--in hanging, how does hanging achieve death of the victim of that hanging?

A If it is done--can you clarify, is this for judicial or suicidal?

Q If it is done judicially, how does death occur?

THE COURT: Well, wait. Wait a second. Why don't you ask him, in the article he wrote, what kind of hanging he was talking about.

BY MR. FERRELL:

Q In the article you wrote, why kind of hangings were you talking about?

A If I remember correctly, it mentions both suicidal and judicial.

THE COURT: So, Doctor, in your article that you wrote, did you write that article to show how you would treat someone who's hung by--in a judicial hanging?

THE WITNESS: No. Should be no treatment--

THE COURT: Does your article--

THE WITNESS: --after a judicial hanging.

THE COURT: --talk about treatment of people that you saw as a result of suicide, is that correct, or possibly homicide?

THE WITNESS: Correct.

THE COURT: But you didn't write that article

about judicial hanging other than to distinguish between homicide, suicide, and judicial hangings, but you didn't really discuss judicial hangings, did you?

THE WITNESS: Not specifically, no.

THE COURT: Okay. And more specifically, you put a disclaimer on that article that the article was created by using several editorial tools, including AI as part of the process; is that correct?

THE WITNESS: I'm unaware that it--I did not use AI in that article.

THE COURT: Well, your article doesn't say where you got your information about judicial hangings from. Where did that come from?

THE WITNESS: It should be listed in the bibliography.

THE COURT: Well, I'm gonna let him testify largely because I don't think there's a such thing as a--any expert but--

MR. FERRELL: And I probably should have--should have just said that he will use his medical knowledge to testify--

THE COURT: I mean, I'll apply--

MR. FERRELL: --and express opinions on the subject of hanging.

THE COURT: --I'll apply the weight to the

hanging part of it that should be applied, but if he just got his information by punching in AI, he's not an expert.

THE WITNESS: I adamantly refuse to state that I used AI. I never use AI.

THE COURT: I'm sorry, Doctor. The best thing for you to do is only answer the questions that your lawyer asks you. So just wait for the question.

I'm gonna allow you to go ahead and go where you're gonna go, and I'll just put the weight on his testimony that it deserves.

BY MR. FERRELL:

Q Dr. Goldstein, did you use AI in writing that article that we've been talking about?

A No.

Q And how do you know that?

A Because I wrote the article myself.

Q I'm gonna back up from hanging for a second before I hang myself, and I'm going to talk about other instances of your work in emergency medicine.

Dr. Goldstein, can you explain the types of training an emergency medicine professional must have in order to place an IV?

THE COURT: Wait a second. I'm sorry. One--before you go any further. Are you qualifying him as an expert in--

MR. FERRELL: In emergency medicine.

THE COURT: Okay. To be clear, you're not qualifying him as an expert in the effects of pentobarbital on a person (indiscernible) going through a judicial--

MR. FERRELL: As a--

THE COURT: --execution?

MR. FERRELL: As a medical doctor, he does have knowledge of pentobarbital. So he--

THE COURT: So you--you're gonna go there with him?

MR. FERRELL: Yes.

THE COURT: Okay.

MR. FERRELL: Yes.

THE COURT: Well, I'll assign the weight that it deserves. Go ahead.

BY MR. FERRELL:

Q Okay. Dr. Goldstein, can you explain the types of training an emergency medical professional must have in order to place an IV.

A An emergency medicine physician spends four years of medical school and an additional three to four years of emergency medicine resident training to be able to become an emergency medicine physician on top of continued education experience.

Q What about other emergency medical personnel?

A It's varied by specialty relating to prehospital providers, nurses, paramedics.

Q Are there any qualifications or certifications required to set an IV?

A Not that I'm aware of.

Q Any number of practice hours?

A For a--for physicians, there is not. I am unsure if there's any for other specialties.

Q Okay. Could you explain the difference between an EMT, an advanced EMT, and a paramedic?

A An EMT is a prehospital medical provider who obtains, depending on the state, approximately a hundred hours of education to make sure a person does not continue to injure themselves; whereas an advanced EMT has additional hours of training where they're allowed to place IVs, give some limited amount of medications; and a paramedic has approximately a thousand hours of education and clinical experience to provide medical care, including medications, IVs, and advanced airways.

Q Okay. And in your report you refer to the ALS/BLS protocols. Can you explain what those are?

MR. WICKENHEISER: Objection, your Honor. I think this is outside the scope of Dr. Goldstein's expertise and in that he--he's not a medical doctor in Tennessee. He can't opine about what the requirements are

in Tennessee specifically. He's, at best, just repeating something that he read on it that's in the law somewhere or some other source.

THE COURT: So what is--what are you exactly asking him?

MR. FERRELL: There's a protocol for EMT--I'll give you the document.

THE COURT: I mean, is this something in his report?

MR. FERRELL: This is something he reviewed in his report.

THE COURT: And what page is it on?

MR. FERRELL: Or that he reviewed for his report. On the fifth page.

THE COURT: It's not--there's no numbers on it. What issue would this--

MR. FERRELL: The qualifications of EMTs.

THE COURT: Okay. I'll allow it.

BY MR. FERRELL:

Q So, Dr. Goldstein, is this the ALS/BLS protocol guidelines you reviewed?

A Yes.

Q And what are ALS/BLS protocol guidelines?

A They are each done by each state to provide guidelines and policies, procedures, and protocols that

allow each provider to be allowed to do what is up to their--what they're allowed to do up to the maximum amount of what they're allowed to do.

Q Okay.

And I'm on page 13 of this guideline. In talking about--can you identify what--what this is on page 13?

A This looks like an example of what a prehospital provider in Tennessee would be allowed to do and when it comes across someone with a cardiac emergency.

Q And when it says "EMT stop here," does that mean those skills above it are what the EMT can do and not below?

A Correct.

Q And where does IV placement fall in this--in this protocol?

A Below EMT and above the AEMT. So that would mean AMT (sic) and above can place an IV.

MR. FERRELL: Okay. Patty, could you go to the next page.

Q And your--Dr. Goldstein, do you see the same pattern on the next page for a different procedure?

A This page seems to be for cardiac emergencies of a low heart rate, bradycardia, where the EMT must stop after it does certain procedures, and it looks like the IV access can only be obtained by AEMT and above.

Q And in your review of this document, which is voluminous, is this pattern standard throughout that document?

A Yes.

MR. FERRELL: Your Honor, I forgot to ask that this document be admitted into evidence.

THE COURT: All right. We'll mark it Exhibit 25.

(Exhibit 25, received in evidence.)

BY MR. FERRELL:

Q Dr. Goldstein, have you had occasion to review Tennessee's lethal injection protocol?

A Redacted, yes.

Q And in that redacted protocol, are EMTs assigned the job of making IV placements?

A I believe that they are on the IV team.

Q How many IV lines need to be placed in the Tennessee protocol?

A Minimum two.

Q And do these protocols differentiate EMTs versus AEMTs when it comes to IV placement?

A Are you referring to the lethal injection--

Q Yeah--

A --protocol?

Q --lethal injection protocol. Excuse me.

A Yes, they do--they do not. There is no

differentiation between EMT, AEMT.

Q So is it your testimony that in the Tennessee lethal injection protocol that EMTs are assigned the job of placing IVs?

A The way I read and interpret it is they are on the IV team, and they may have the responsibility of IV placement. Without any more specifics, I...

Q Are you familiar with--in different settings that some people are particularly difficult to place an IV in? Have you encountered that in patients?

A Yes.

Q What are some of the causes of difficulties in placing IVs?

A It can vary based on anatomy just from birth. It can be based on repetitive use. It could be based on just difficult and different locations than what is expected.

Q And what are some complications in placing IVs with patients who are difficult to achieve access? What are some possible complications?

A In my experience and what we notice when we try to place IVs on people that are difficult to obtain IV access, they get repeated sticks with needles to try to find a vein, which leads to pain and discomfort and anxiety and sometimes bleeding and hematoma or bruising.

Q What is extravasation?

A Extravasation is when any material that is presumed to be placed into a vein leaks out of the vein and goes into the soft tissue, the muscle, fat, and skin.

Q And do you have any experience or knowledge with the drugs thiopental--sodium thiopental or pentobarbital?

A I have basic scientific understanding of it, yes.

Q Is that--has that ever been part of your practice as a physician, those drugs--

A No.

Q --use of those drugs?

No? Okay.

Can you briefly explain what a central line is?

A A central line is a large conduit that goes into the--

MR. WICKENHEISER: Objection, your Honor. I--I don't think that a central line--the Court's already determined that's not relevant to the determination of one or three. So I don't see the relevance of this.

THE COURT: Do you need it for four?

MR. FERRELL: Excuse me?

THE COURT: Do you need it for the question four, or did you already introduce your evidence to describe your alternative?

MR. FERRELL: We have used that, but this would be additional evidence for--

THE COURT: I'll allow--

MR. FERRELL: --issue four.

BY MR. FERRELL:

Q Have you ever placed a central line? Let me start with that.

A Yes.

Q And what is a central line?

A Central line is a large conduit that goes into the larger vessels off a system that lead to the venous return to the heart, essentially where the IVs go to the larger system, and they're usually in your neck, chest, or groin.

Q Okay. And what type--in your professional practice, is this a difficult skill--back up. I'm sorry.

In order to be competent to--to place a central line, how often should this procedure be practiced or effectuated for a physician to be competent at setting a central line? How often should the physician have experience doing that?

MR. WICKENHEISER: Objection, your Honor. This is, I think, a not very subtle attempt to try to get to the qualifications of a physician--of our physician to try to argue he's not qualified. I don't--I don't think this is proving their alternative at all. I think they're just trying to get in evidence about the qualifications needed

for TDOC's position and their protocol.

MR. FERRELL: There were--I was going to make no questions about the particular physician. Just in general what sort of qualifications and how much practice in order to be competent.

THE COURT: I'm gonna allow.

MR. FERRELL: Okay.

BY MR. FERRELL:

Q Do you need me to restate the question, Dr. Goldstein?

A No thank you.

To--per the American College of Graduate Medical Education, to be a practicing physician to--to graduate from training you need a minimum of 20. That--that is just taking into account once you graduate to become a full-fledged--an attending emergency physician. There needs to be continuing education management and practice at placing central lines throughout your career, as this is, like any skill with muscle memory, can wane if not used.

Q Thank you. What are circumstances that a patient would present within an emergency room where you would judge that a central line is necessary?

A There are sometimes immediate need for resuscitation where they would need large volumes of fluid or blood products. The secondary would be where we cannot

obtain peripheral IV access after numerous attempts or using adjunctive ultrasound that they would need IV access, and a central line would be the most prudent.

Q And what are some potential complications or difficulties in placing a central line?

MR. WICKENHEISER: Objection, your Honor. We really are getting into just the physician qualifications unless counsel's trying to say his own alternative has complications and difficulties.

THE COURT: Well, I mean, I let his other witness talk about the complications and difficulties from a central line under the premise that he was trying to use it for question number four for me to compare that against hanging.

So I'm gonna let you go forward.

MR. FERRELL: Okay. Thank you.

BY MR. FERRELL:

Q Could you answer the question, or would you like me to repeat it?

A Can you repeat the question, please?

Q Yeah. What are some potential complications or difficulties that face a physician in placing a central line?

A The overall arching complications are making sure the area is anesthestized appropriately. There is the--the

concern that you can hit an artery instead of a vein, which is a higher pressure system and more concerning as almost all veins run with arteries and if there is an arterial injury or numerous puncture sites that could lead to swelling, and if this is one that is done in the neck, that could affect the airway; and then if you decide to do a central line in the chest, called the subclavian, and your--your mechanism and your angle is off, you could collapse a lung leading to respiratory distress.

Q Thank you. All right. I'm going to switch now to hanging, talking about--

THE COURT: Before you move on, I want to ask him, which one is more invasive and which one has potential worse consequences, peripheral IV access or central line access.

THE WITNESS: I'm sorry. Can you clarify the question?

THE COURT: Yeah. It's a question about I want to know whether the potential adverse consequences to the patient are greater if there's complications or--from central line placement versus peripheral IV placement. Which one--

THE WITNESS: The comp--

THE COURT: Which one's more likely to cause severe injury to the patient if it's--if there are

problems?

THE WITNESS: Central line placement would lead to more devastating problems if done incorrectly compared to peripheral IV.

THE COURT: Now you can move on to whatever you want to move on to.

BY MR. FERRELL:

Q I have one more--one followup question on that. If peripheral IV access is not properly obtained, will the drugs that are injected there--by "properly obtained," I mean that there could have been a blowout or not reached--not actually inserted into a vein. Will the drugs inserted be effective?

A They would possibly be partially effective, if at all, as it is called extravasation, where the mechanism of action would not reach the area it needs to with a high enough concentration that there's a possibility of partial effect or no effect.

Q All right. Now, I will switch over to hanging. Dr. Goldstein, what are the two ways in which hanging achieves death?

A The way that I perceive this is a hanging leads to death in two ways: One is instantaneous transection of the cord, spinal cord; and the other is strangulation.

Q And the transection of the spinal cord, can you

explain how that works? Can you explain medically how that works to achieve death?

A The pressure that is provided by the hanging material in most cases causes a hyperextension of the neck leading to internal decapitation along with stretching of the ligaments enough that the neuronal signals from the brain to the body cease to be able to go down to the heart and lungs and therefore prevent the ability of the heart to beat and the lungs to breathe.

Q So without signals from the brain the heart will not beat; is that correct?

A Correct. Correct.

Q And the lungs will not breathe?

A Correct.

Q Is this type of death instantaneous?

A Yes.

Q What is the significance in hanging of the C2 vertebra?

A The second cervical vertebrae is the approximate location where you would want to be--have the most force apply to--to get the instantaneous death of hanging and spinal cord distraction.

Q And, traditionally, in judicial hangings was there a formula for figuring how best to achieve the spinal transection?

A Yes, I believe there's numerous examples and types of formulas and tables to figure out height, weight, drop length, to figure out the best way for this to occur.

Q Now, if transection does not occur and the person's spinal cord is not transected, how will death occur in hanging?

A By strangulation.

Q And how--how does strangulation kill the--or the--the patient or the person?

A Whatever the mechanism, like in most cases a rope is, decreases the ability of the deoxygen--already used blood and nutrients to prevent from getting back to the heart, which leads to a backup flow to therefore not allow nutrients and--to get to the brain along with swelling and possible bleeding therefore leading to asphyxiation, low oxygen, and death.

Q And typically in this type of strangulation death by hanging, how long--once the person is hanged, how long until they lose consciousness?

A It--consciousness could be lost in approximately 10 to 20 seconds.

Q And how long before death actually occurs?

A Approximately a minute.

Q Now, if--if a state would choose hanging as their method of execution, would the materials typically used to

build gallows be avail--readily available?

MR. WICKENHEISER: Objection, your Honor. I don't--I think this exceeds the scope of Mr. Goldstein's testimony. He never indicated he knew anything particular about judicial hanging let alone the resources of the state.

MR. FERRELL: I'm just asking him if the materials that he's aware of for doing that are easily available, generally.

THE COURT: I'm--I'll--I'm gonna allow you to go forward on this. Just realize the Court has to give this testimony the weight that's--

MR. FERRELL: I understand, your Honor.

THE COURT: Some kind--I've got--anyway, go ahead.

BY MR. FERRELL:

Q Back to the question, are the materials typically used in building a gallows readily available on the open market?

THE COURT: Wait a second. First ask him how he knows what the typical materials are.

BY MR. FERRELL:

Q Do you--do you know what the typical materials are for building the gallows?

A Yes. It's--yes.

Q And what are they?
A Usually it's wood, hardware nails, and rope.
Q And are those items typically available on the open market?
A Yes.
THE COURT: You're talking about wood and rope?
MR. FERRELL: Wood and rope. Yeah. Nails--yeah.
BY MR. FERRELL:
Q Now, have you ever--already asked this.
Are you aware of the botch rate for hangings?
MR. WICKENHEISER: Objection, your Honor. I don't think that Mr. Goldstein is--is not a forensic pathologist. I don't think he has any personal training and in his--his report does reference some botched rates. He's merely quoting a book. He has no personal expertise in botched rate.
THE COURT: What is it exactly you're asking him? I--
MR. FERRELL: The botched rates--hangings--judicial hangings that are unsuccessful, what percentage?
THE COURT: I'll let you answer.
MR. FERRELL:
Q Dr. Goldstein, what percentage of judicial hangings are unsuccessful?
A Approximate from the--like previously stated in

the article I read, approximately 3.12 percent.

Q And lethal injections, what--

MR. WICKENHEISER: I'm sorry. The same objection, your Honor, except in this context Mr. Goldstein hasn't even been qualified as an expert on anesthesiology or pentobarbital or any of the chemicals involved in lethal injection.

THE COURT: Well, I'm gonna allow him to testify and we'll--after cross-examination, I'll decide how much weight--give me those numbers again.

BY MR. FERRELL:

Q Yeah, what is the--the rate of unsuccessful executions when it's lethal--

THE COURT: What--I think you called it botched.

MR. FERRELL: Botch--yeah. The botched rates in lethal injections.

THE WITNESS: Seven point two percent.

BY MR. FERRELL:

Q So the botch rates for hanging are lower than lethal injection, correct?

THE COURT: Well, give me that number again, too.

BY MR. FERRELL:

Q Yeah, could you give both of those numbers again?

A Yes. The botched rate for hanging is 3.12 percent, the botched rate for lethal injection is 7.2

percent, with the overall rate being 3.15 percent.

Q And once again, is death by spinal cord transection immediate?

A Yes.

MR. FERRELL: I have no other questions.

THE COURT: Cross-examination.

MR. FERRELL: Thank you, Dr. Goldstein.

CROSS-EXAMINATION

BY MR. WICKENHEISER:

Q Hello, Dr. Goldstein. It's David Wickenheiser again.

A Yes, good afternoon.

Q Do you have your expert report in front of you?

A Yes.

THE COURT: Did we mark that as an exhibit? It's still out there undecided, I guess.

MR. WICKENHEISER: I don't think we did, but I think it makes sense to.

MR. FERRELL: Yes.

MR. WICKENHEISER: I think it--

MR. FERRELL: Yeah. I gave it around and I--

THE COURT: Okay. We'll mark that Exhibit 26.

MR. FERRELL: And I do move for its admission, but...

THE COURT: You trying to talk me out of it.

(Exhibit 26, received in evidence.)

BY MR. WICKENHEISER:

Q Thank you, Dr. Goldstein. And do you have the articles that you cited in your expert report in front of you as well, or if you don't, we can show them on the screen. But if you have them in front of you that might be easier. Just whatever's--whatever's easiest for you.

A I do not have all the articles available to me, no.

Q Okay. Well, we can show them on the screen. If you have any of them and--and you'd prefer to just look at the paper copy, you please feel--please feel free.

Would you agree that hanging is a death by traumatic injury?

A Yes.

Q Could you turn in your report on the second page in the section labeled "Hanging." The last sentence to the second paragraph. There--are you following me?

A Yes. Do you want--

Q I'll--I'll read it.

A --tell me the sentence so I can make sure--

Q Oh, yeah. I'll read it for you.

"If the calculations are incorrect or if the ligature is not precisely placed, this could lead to strangulation instead of hanging."

Did I read that right?

A Correct.

Q Okay. I'd like to first get into what it means for the ligature to be precisely placed. In the second paragraph--or the second sentence of that same paragraph, you use--you write, "A proper execution is accomplished by placing the ligature at the optimal position, high on the neck at cervical vertebrae No. 2, C2."

Did I read that right?

A Yes.

THE COURT: I mean, I would like to know where he got that description.

MR. WICKENHEISER: Yes, sir.

BY MR. WICKENHEISER:

Q Mr. Goldstein, where--where did you get that description from?

A Part of it is experience with dealing with hangings and strangulations and the rest of it is probably in the bibliography.

Q Did you cite any authority for that statement?

A No. I feel that this is something that is--I've known just through my job and my experience in years of practice.

Q But you've never actually treated someone subject to judicial hanging, correct?

A Correct.

MR. WICKENHEISER: Could we pull up footnote 1.

Q And could you go to page 18 on there, like labeled page 18. Probably the second page.

Is this one of your--the articles you relied upon, Dr. Goldstein? We can go back to the top if that's easiest for you.

A I will trust you that it is. I didn't see the top of it. I'm sorry.

Q Okay. Can you go--

MR. WICKENHEISER: Can you scroll down to the bottom of page 18.

Q Do you see the--

THE COURT: I'm sorry. For the record, what's the title of this article?

MR. WICKENHEISER: Could you go up to the top.

This title's called "Near Hanging," by Nick Adams, and I don't intend to enter it as an exhibit, your Honor, but if the Court would like it, I do have copies.

THE COURT: No, it's not...

Q In the fourth--

THE COURT: Wait. Wait a second. Is this the article that you used to get to your description of what a proper hanging looks like?

THE WITNESS: Like I alluded to earlier, I did

not use any particular article for that.

THE COURT: So you just made that up out of your head?

THE WITNESS: No.

THE COURT: Well, I mean, I think we've already established you have no education, training, or experience with judicial hanging. So how are you telling us what a judicial hanging's supposed to look like?

THE WITNESS: Based on my years of education and reading and research. This may have been one of them that I read also. I just did not have one specific bibliography in mind when I wrote that fact.

THE COURT: Well, you included a bibliography in your report, and you have a bibliography in the one article that you've written on this subject. So from--from that material, where did you get this description?

THE WITNESS: From the numerous articles I reviewed for the--for this and for the article.

THE COURT: So you can point to nothing, except something you possibly read somewhere during your lifetime?

THE WITNESS: If you would like me to find the exact location I read it, I'd be happy to obtain that, which would take an extended period of time.

THE COURT: We'll move on.

BY MR. WICKENHEISER:

Q Mr.--or Dr. Goldstein, could you--right in the middle of that first paragraph there starting with "typically"--so I believe that says, "Typically, 2.54 centimeter braided hemp was used as a ligature with placement--with careful placement of the knot behind the mastoid process." Is the mastoid process the same thing as the C2 vertebrae?

A It is not. The mastoid process is the bone that extends behind your ear, which is approximately at the level of the second cervical vertebrae if you drew a line across.

Q So you--you would agree that the literature you cite references a different place where the ligature would be placed?

A It would be the same location. They're just using different anatomical locations.

Q Okay. Let's turn back to your report. I believe the next sentence after the C2 vertebra, it says, "The weight of the person needs to be taken into consideration to account for the force that would be generated. Usually twice the height of the person is sufficient from an immediate drop." Did I read that correctly?

A Yes.

Q And is this your--your Medscape article, "Hanging Injuries"--

A Yes.

Q --"Strangulation"? Okay.

MR. WICKENHEISER: Could you go to the section labeled "Pathophysiology." I think it's probably like two.

Q Do you see there under "Pathophysiology" where it says, "Adult"?

A Yes.

Q That first sentence says, "Judicial hangings are characterized by drops from heights that are greater than the victim's height." Did I read that right?

A Yes.

Q So judicial hanging just means a drop of height greater than the victim's height; is that correct?

A At the time I wrote this article, that is what I believe, yes.

Q So when your report says, "Usually twice the height of the person is sufficient," that means not all judicial hangings involve using twice the height of the victim, correct?

A I am unsure what every state or location uses for their calculations.

Q You said, "Usually twice the height is sufficient." So does that mean that a drop of twice the height of the victim is sometimes insufficient for the individuals to die instantaneously?

A Yes.
Q And in that instance the individual will be subject to strangulation?
A Yes.
Q Let's turn back to your report. On page 3 in that kind of first paragraph, the fourth full sentence, starts with "regardless." You see that?
A Do you want to highlight or put the cursor where you would like me to look?
That's it. Yes.
Q You wrote, "Regardless of the cause of unconsciousness, the patient usually becomes unconscious with--within 10 to 20 seconds." Is that right?
A Yes.
Q Do you cite any article for that proposition?
A Yes.
Q And--and those are at footnotes 6 and 7, correct?
A Yes.
Q So I could not find anywhere in footnotes 6 and 7, 10 to 20 seconds, and I'm happy to pull them up on the screen here if you want to review them, and I can't--you know, I wanted to ask you about that specifically. I couldn't find where that is. If we pulled it up, would you be able to find in those articles where it says 10 to 20 seconds?

A If you would like me to try to read it through right now, I'd be happy to. I am unsure if I'd be able to find it right now.

THE COURT: Can you pull them up?

MR. WICKENHEISER: Yeah.

THE COURT: We're gonna go off the record. I'm gonna take a 10-minute break while he's reading this material.

(Recess was taken.)

THE COURT: Okay. Let's pick up where we left off.

BY MR. WICKENHEISER:

Q Dr. Goldstein, were you able to find where in those articles it said "10 to 20 seconds"?

A No.

Q Okay.

THE COURT: I'm sorry. What was the answer to the question?

THE WITNESS: No.

Can I clarify a previous statement?

THE COURT: No. Well, first, why would you represent an opinion so critical and cite a citation as though you have authority for it when you, yourself, are not an authority and pawn that off on this Court?

THE WITNESS: There must have been a mistake in

where I read it and where I did my bibliography part, but I still believe my fact.

THE COURT: So you're saying now that that information is somewhere else in one of these bibliography things?

THE WITNESS: Yes.

THE COURT: I'll take another recess while you find where it is.

THE WITNESS: Okay.

(Recess was taken.)

THE COURT: Call court back to order. You may resume.

BY MR. WICKENHEISER:

Q Dr. Goldstein, were--were you able to find the citation for the 10 to 20 seconds?

A Yes. If you look on page 523 of the article you put up "Delayed Bilateral Internal Carotid Arteries," the bottom left paragraph that starts with, "The obvious clinical findings," the information was obtained by saying, "Particularly as loss of consciousness has been reported to occur as early as 15 seconds after suspension."

Q So--I'm sorry. So it says, "Particularly as loss of consciousness has been reported to occur as early as 15 seconds after suspension."

A Yes.

Q Let me reiterate what--what you wrote in your report. "Regardless, the cause of unconscious--of the cause of unconsciousness, the patient usually becomes unconscious within 10 to 20 seconds." So you said, "usually becomes unconscious," and the article there says, "loss of consciousness has been reported as early as 15 seconds." Is that right?

A Yes.

Q Okay. Moving on to your description of lethal injection.

THE WITNESS: Could I clarify a previous statement?

THE COURT: I'm sorry. There's--they didn't--they worked on this sound system during lunch, but I'm getting a lot of feedback up here. Are y'all getting feedback?

(Discussion regarding the sound sytem.)

THE COURT: What did he just say?

MR. WICKENHEISER: He said could he clarify a previous statement?

THE COURT: Sure.

THE WITNESS: I believe, your Honor, you asked where I got my information about hanging and height, and in my review looking for that, the time situation of 15 seconds, the article, No. 7, "Strangulation: A Review of

Ligature, Manual, and Postural Neck Compression Injuries" seems to have a lot of the information, which is most likely where I obtained it from.

BY MR. WICKENHEISER:

Q Dr. Goldstein, just to understand what you said. Are you saying you received most of your information about judicial hanging generally from that article or the 10- to 20-second claim?

A Sorry. No. This is previously talking about the height that is needed for judicial hangings, unrelated to the time--unrelated to the time it would take to be unconscious, separate.

THE COURT: No. Doctor, I want some clarification. You said, "in unconsciousness, which can occur about 10 to 20 seconds," in one phrase; and the next phrase, "becomes unconscious within 10 to 20 seconds"; and then at the end of your report you said, "will produce unconsciousness in about 30 seconds."

I'm just trying to figure out what your--

THE WITNESS: So in--

THE COURT: --what your--what your testimony really is and what you're basing it on, what your science is that you're basing this on, and the one thing that you cited is "it can occur as early as 16 seconds."

What I'm hearing is you don't really know.

THE WITNESS: So I--I believe the literature also doesn't know a hundred percent, and that's why I was using a spectrum of time.

THE COURT: I'm sorry. I'm getting this tremendous feedback up here.

MR. WICKENHEISER: I can--we can hear over here. I'm not sure--

THE COURT: Say that again, sir.

THE WITNESS: So I--I think also the literature is unsure, because everyone's anatomy and ability to maintain oxygenation is different, that's why there is a spectrum, and that's why I gave a--a value range and not an exact number.

THE COURT: But--okay. So where did you get the value range? I mean, we all want to know if you're just pulling this out of thin air.

THE WITNESS: I am--I am not. Like I said, the article that was up recently about the bilateral arterial thrombosis says "15 seconds for them." I also believe there's also a general understanding, especially when you deal with trauma, to understand it--there's--for me, at least, I believe it takes 10 to 30 seconds, and here's literature showing 15 seconds, which is in the middle.

THE COURT: The literature shows "as soon as 16 seconds." The literature doesn't give a range. It doesn't

say that it can't be five minutes. As soon as 16 seconds means the earliest onset. It doesn't give how long the--the outside limit is. But you're giving us that outside limit with no citation to any authority.

THE WITNESS: I believe as a physician, my understanding of the mechanism of oxygenation and how long the brain can manage without proper nutrition and blood flow is my expertise. I don't know if I can get you an exact bibliography on that.

THE COURT: You don't know if you can get to it, but you gave us a report that got to it.

THE WITNESS: Based on my education and experience, yes.

THE COURT: And we've already established you have no education and no experience for judicial hanging.

THE WITNESS: Correct. I have education and experience in--

THE COURT: Okay. We're gonna move on.

THE WITNESS: --the human body.

THE COURT: Move on.

BY MR. WICKENHEISER:

Q Thank you, Dr. Goldstein. Turning back to your report, in that first paragraph under "lethal injection," after footnotes 8 and 9 there, you begin the sentence with the quote, Once the medication is given intravenously, it

can take upwards of one minute to produce unresponsiveness. And this is, I think referring to pentobarbital.

Did I read that right?

A Yes.

Q Do I understand your previous testimony to be that you don't have any particular expertise in pentobarbital, though?

A I--no, I have not used pentobarbital.

Q So you've never administered a large amount of pentobarbital?

A No.

Q And do you have any experience observing how long it takes for pentobarbital to render someone unconscious?

A No.

Q Following up on that sentence, you go on to say, "With the current state of knowledge, there's uncertainty if the prisoner is unconscious during this time or just unresponsive and aware." Did I read that right?

A Yes.

Q I'm a little confused by that phrasing, "with the current state of knowledge." Is it your medical opinion that a large dose of pentobarbital would not render an individual unconscious?

A So that paper, obviously, No. 22, is where I got that information from stating that they're--they're unsure

if the person is unconscious and still aware of their surroundings or unconscious and unaware.

Q And just to repeat, though, you have--you have no experience with pentobarbital?

A No.

Q And that citation, is--is that to a DOJ report?

A Yes.

Q Are you aware that the DOJ has since rescinded and replaced that report?

A No.

Q Besides that report do you have any reason to believe that giving an individual 5 grams of pentobarbital would not render them unconscious?

A I have no personal experience with pentobarbital.

THE COURT: Just for clarification purposes, the sentence actually says, "Once the medication is given intravenously, it can take upwards of one minute to produce unresponsiveness."

Unresponsiveness is not necessarily the same thing as unconsciousness. Unresponsiveness is not necessary the same thing as the inability to feel pain, which is the critical question to the Eighth Amendment. And I'm not sure what "upwards" means. Does that mean that's the outer limit or may they be--become--I guess the question is the inability to feel pain. Can you get him to

clarify that?

BY MR. WICKENHEISER:

Q Dr. Goldstein, when you say "unconscious" versus "unresponsive," is it your opinion--is it your medical opinion that pentobarbital would not render someone insensate to pain?

A Does--I can't answer a yes or no without elaborating and speculating.

Q So--so you--you don't--you don't have a medical opinion on that fact?

A Without speculation, I can't, because there's variables.

THE COURT: So--so your reliance upon this upwards to one minute is not based upon your knowledge. It's a report from the DOJ, and in that report they use the word "unresponsive." They don't use the word, "insensate"? Is that correct?

THE WITNESS: Yes.

THE COURT: Okay. All right.

BY MR. WICKENHEISER:

Q Moving on to--still under that lethal injection heading, in paragraph two, sentence three, beginning with "peripheral IV access," you say, "Peripheral IV access can be difficult to obtain for a variety of reasons."

Did I read that right?

A Yes.
Q And I believe you testified a little bit about what can make that more difficult; is that right?
A Yes.
Q In your practice, are there some folks who are better at setting IV lines than--than others?
A Yes.
Q What--what makes them better?
A Their training, their expertise, their practice and experience.
Q How much experience would you say is--you would feel confident that someone has the expertise to set IV lines?
A Once again, I know this is not what the Court likes to hear, but it--it is variable based on the expectation and type of access one needs, location, and history of the patient.
Q Is there--is there someone in your practice that--I mean, is, you know, kind of the best at setting IV lines?
A So the people that have the most experience, usually nurses, that have been doing their job for an extended period of time are usually the ones that are the best at obtaining IV access.
Q And those nurses that are best at achieving IV

access, in your--in your experience, how--how long have they been doing it?

A Ten to 15 years.

Q So decades?

A Yes.

Q Okay. Let's go on to the next page, page 4, in the comparative analysis section. That first sentence says, "Hanging involves substantial variability and outcome, depending on the mechanics of the procedure. The variability is based on body habitus, weight, drop length, technique. Any variation of any of those can lead to strangulation instead of hanging."

Did I read that right?

A Yes.

Q So you agree that hanging can cause death by different means?

A Yes.

Q And is it your opinion that death by strangulation would be more painful than death through an immediate broken neck?

A Yes.

Q Page 5, that next page, when it says, "Specific to this case," the first sentence says, "Ms. Pike is known to have difficult IV access as has been noted in the medical records. They've used 23 gauge to access her veins

for blood work," and then you go on--you provide some citations there, and you said, "This gauge is quite small for an adult and leads me to believe that Ms. Pike has difficult IV access."

Did I read that right?

A Yes.

Q So are you basing your fact that Ms. Pike will have difficult IV access solely on the fact that she gets blood draws with a 23 gauge needle?

A Yes.

Q Have you reviewed Ms. Pike's medical records?

A Yes.

Q Were there any instances in which you found that they had difficulty performing a blood draw?

A No.

Q Did you ever see any notation that they needed to add multiple attempts to get a blood draw?

A No.

Q Did you ever see if there were any notations that they had trouble getting a blood draw with a larger needle?

A Not to my recollection.

Q Did you see any instance where medical staff could not establish an IV line?

A Not to my recollection.

Q In that same paragraph on--on the third sentence

you said it, quote, seems highly unlikely that the IV staff would be able to find two suitable veins. Is--is that correct?

A Yes.

Q Are you saying that it's unlikely for anyone to be able to set IVs in Ms. Pike?

A No.

Q Who would be able to set IV lines in Ms. Pike?

A Like we alluded to earlier, the people with extensive experience.

Q In that same--actually, scratch that question.

Let's go to your final medical opinion, your expert medical opinion from pages 5 and 6. I pulled a couple of quotes here, and I'd like to run them by you. Just let me know if you think I'm reading them incorrectly here.

The second paragraph, sentence one, "Both hanging and lethal injection are suitable options for capital punishment."

Did I read that right?

A Except--yes. The word--it's "option" not "options," but yes.

Q Thank you. Thank you for--for catching that.

The--the next sentence, "They both carry risks of unintended complications that may result in prolonged dying

and potential suffering if done incorrectly."

Did I read that right?

A Yes.

Q On that next page, the second paragraph, in the first sentence, "It's my independent professional opinion that hanging is a viable, possibly quicker, and less cruel method of execution."

Did I read that right?

A Yes.

Q I'd like to talk a little bit about this botched statistic that you include in--in your report. You say that the botched rate--and this is at the very bottom of that. All right. It's the second to last sentence--third last sentence of that same paragraph. "The overall botch rate for capital punishment is 3.25 percent, lethal injection is 7.2 percent, and hanging is 3.12 percent."

Can I ask you why the phrase "botched" is in quotes?

A I was unsure if that is a colloquial term or a term that is used in the industry as a normal statement of a problem with lethal injection.

Q Have you done any independent study on the botched rates of different methods of execution?

A No.

Q So when you--you provide that statistic of what

the botched rate is for certain methods of execution, is that just based off of the books and footnote 21?

A That is correct, yes.

Q So we--we weren't given access to the--those books weren't provided to us exactly, and so I wasn't able to look at what it was that that botched rate refers to. So could you explain what--what that book means when it says, "A botched rate of seven percent"? What--what exactly is it considering to be botched?

A If I remember correctly, and there may be some inconsistencies, but if I remember correctly, there is the botched rate of the failure to lead to death within the expectation of the mechanism of action; the example, the botched rate for firing squad is zero percent, if I'm not mistaken. I don't remember the numbers offhand.

So the inability to cause death within the expected timeframes.

Q So if the execution takes slightly longer, that's what it considers to be a botched execution?

A I am unsure of the specific.

Q So there--there might not even be additional pain or suffering in that botched rate. It would just--it's just based off the time?

A I believe so, yes.

Q Have you reviewed the specific executions that

the author uses when it's counting up what it considers to be botched to--to see what--what happened in those executions?

A I did not look at every one, no.

Q Did you look at any of them?

A No.

Q Turning to your testimony regarding the ALS/BLS, which is Tennessee's emergency--for lack of a better word, you know, what folks use that are trained in emergency medicine, do you know if any members of the IV staff are--are EMTs?

A Based on the review of the--based on injection protocol, they are listed with the other providers.

Q So I understand you've read the protocol and that's one of the names. I'm asking whether you have any knowledge of whether the actual members of the IV team are EMTs.

A No.

Q I believe you testified that one of the risks of IV access is extravasation. I hope I'm saying that right. Is that correct?

A Yes.

Q Is that also one of the risks of a central line?

A Extremely less likely.

Can I elaborate?

Q Yes, please feel free.

A Extravasation is usually due to smaller, weaker veins that don't have the integrity to hold the solution, whatever it is, in the venous system. With a central line, it's a larger vessel with a larger wall, and the chance of extravasation from central line--I--I don't know the number, but it has to be infinitesimally small as--in my recollection, in my personal experience, I've not seen extravasation from a central line that was properly placed.

Q You--you mentioned some of the equipment used to build gallows. Have you ever built a gallows?

A No.

Q Have you ever been consulted by a state agency seeking to--to begin a hanging method of execution on how to build a gallows?

A No.

Q What are you basing the information on how--what equipment is needed to build a gallows off of?

A Article--article review, which I did not reference, and basic knowledge.

MR. WICKENHEISER: Okay. I have no further questions.

Thank you, Dr. Goldstein.

MR. FERRELL: No--no questions, your Honor.

THE COURT: I have a couple of questions, Doctor,

about your botch rate. I understand that you treated somewhere between 20 and 30 cases involving hanging in your career.

THE WITNESS: Approximately, yes.

THE COURT: What was the botch rate for those?

THE WITNESS: I guess I would have to say a hundred percent if they made it to the emergency department with a pulse.

THE COURT: And what kind of injuries did your patients have in those that were botched?

THE WITNESS: They varied, and if I recollect correctly, anywhere from carotid artery injuries to tracheal fractures to hematomas, muscle injury, anoxic brain injury.

THE COURT: Did any of your patients in those 20 or 30 cases ultimately die from their injuries?

THE WITNESS: Probably, yes. After I evaluate them, if they're stable enough, they go to an intensive care unit where I do not follow them, but I am confident that a small number of them did go on to become deceased.

THE COURT: And in your report I think counsel asked you about your botch rate article. What was the name of that book that you got this botch rate from?

THE WITNESS: It was by Austin Sarat, "Gruesome Spectacles: Botched Executions and America's Death

Penalty."

THE COURT: Botched doesn't sound like a medical term. Is that a medical term?

THE WITNESS: It is--it is not. That is why I quoted it, because I was unsure of how it is used.

THE COURT: And do you know who Dr. Sarat is?

THE WITNESS: I do not.

THE COURT: Do you even know if he's a physician?

THE WITNESS: I do not.

THE COURT: A historian?

THE WITNESS: I am unsure of what--

THE COURT: A lawyer?

THE WITNESS: --their specialty is.

THE COURT: Do you--

THE WITNESS: I am un--

THE COURT: Do you know what his--I don't know the science word, but the number of people--the--the number of executions he looked at?

THE WITNESS: I do not know.

THE COURT: Do you know the timeframe over which he looked at these executions?

THE WITNESS: I do not remember offhand.

THE COURT: Do you know how many of them were different forms of punish--of punishment: Electric chair, hanging, lethal injection--what about--

THE WITNESS: Yes, I believe there was one more additional one of firing squad.

THE COURT: I can't remember, but do you know the breakdown?

THE WITNESS: I don't remember offhand.

THE COURT: Do you know when the last person who was executed by judicial hanging in the United States, when that occurred?

THE WITNESS: Decades ago. I do not know the exact date.

THE COURT: So you--whatever the--his study, the hanging--the judicial hangings, it could be from 300 years ago, as far as you know; is that correct?

THE WITNESS: Yes.

THE COURT: So you have no idea about what this author's credentials are or methodology in determining these statistics are; is that correct?

THE WITNESS: Yes.

THE COURT: They just support your conclusion and so you don't need to know?

THE WITNESS: I'm sorry? What was the question?

THE COURT: You know how many people have been executed by judicial hanging in the United States since Furman vs. Georgia or Gregg vs. Georgia? Sorry.

THE WITNESS: No.

THE COURT: Do you know that Tennessee did away with hanging in two thousand--I'm sorry--1913?

THE WITNESS: I know they did away with it. I did not know the year.

THE COURT: Do you know how many states in the United States authorize hanging as a form of capital punishment?

THE WITNESS: I believe it's close to zero.

THE COURT: Say it's--I couldn't hear you.

THE WITNESS: I believe it is in the single digits, if not zero. I am not sure.

THE COURT: So you're an expert in judicial hanging but you don't know when--how many hangings have occurred in the last 40 years?

THE WITNESS: I believe I am an expert when it comes to the medical aspect of how hanging affects the human body.

THE COURT: Are you an expert on the statistics that you provided the Court to consider?

THE WITNESS: No. I am not a statistical expert.

THE COURT: All right. I don't have any more questions. Are we done with him?

MR. FERRELL: Yes, your Honor.

THE COURT: Thank you, Doctor.

THE WITNESS: Thank you, your Honor.

THE COURT: Oh, I had one more question. I'm sorry. Can you come back.

Can we get him back? I had one more question for him.

Never mind. I don't need him.

(Witness was excused.)

THE COURT: Do you have your next witness, or do you need a break?

MR. FERRELL: We'll take a short break, but I believe we're finished with witnesses.

THE COURT: Is 10 minutes enough?

MR. FERRELL: Yes.

THE COURT: Ten-minute recess.

(Recess was taken.)

THE COURT: Ms. Pike, can you still hear?

(No audible response.)

THE COURT: Okay. Call your next witness.

MS. MORRIS: Your Honor, the state calls Dr. Karen Kelly.

THE COURT: Another Zoom?

MS. MORRIS: Yes, your Honor.

MR. AYERS: Just for the record, your Honor, is it true that that's the conclusion of the movant's proof?

MR. IHNEN: Yes.

MR. FERRELL: Yes.

THE COURT: Do you anticipate rebuttal?

MS. BALES: Your Honor, we reserve the right to present rebuttal if it becomes relevant.

DR. KELLY: I'm sorry. I'm having trouble getting my camera on.

(Getting witness camera on.)

THE COURT: Short recess while she logs back off.

(Recess.)

THE COURT: Back in session.

Can you hear us now, Dr. Kelly?

DR. KELLY: I can. Are you able to hear me?

THE COURT: Yes, we can--

DR. KELLY: Thank you.

THE COURT: I think they're ready to go.

Would you raise your right hand.

(Witness was sworn.)

THE COURT: You were waiting for the rest of it, weren't you?

THE WITNESS: I was.

KAREN L. KELLY, M.D., called as a witness, being duly sworn, was examined and testified via video as follows:

DIRECT EXAMINATION

BY MS. MORRIS:

Q Good afternoon, Dr. Kelly.

A Good afternoon.
Q Could you state your name for the record and spell the same.
A Certainly. It's Karen L. Kelly, K-E-L-L-Y.
Q We're gonna show you a document on the screen. Can you see the document?
A Yes, I can.
Q Do you recognize this document?
A Yes, I do.
Q And what is this document?
A This is basically what we call a "curriculum vitae," which in academic medicine just means a resume, and it's of myself.
Q And did you attach a copy of your CV as part of your declaration in this case?
A Yes, I did.
MS. MORRIS: Your Honor, I would like to admit the CV of Dr. Kelly as an exhibit.
THE COURT: I believe that's 27. Exhibit 27.
(Exhibit 27, received in evidence.)
Q Dr. Kelly, could you describe your educational background for the Court?
A Certainly. So I did my medical training at the University of Minnesota in Minneapolis. I got my degree in medicine in 1987. I then went into a general surgery

internship, which I did for one year, treating patients. I then transferred into pathology, which is the study of disease processes in the body. I did a residency in anatomic and clinical pathology there. I also did a fellowship training program in forensic pathology at the Hennepin County Medical Examiner's Office during my residency training. After that I did cardiovascular pathology which has nothing to do with this, but after my forensic training, I have been practicing forensic pathology for approximately 30 years.

Q And are you board certified?

A Yes, I am. I am board certified in anatomic, clinical, and forensic pathology.

Q Could you explain what--what anatomic, clinical, and forensic pathology encompasses.

A Certainly. So pathology, as I said just a minute ago, is basically the study of disease processes in the body. So there's two different types of general pathology. One is anatomic and the other is clinical.

Anatomic pathology is typically looking at histology or tissues under the microscope, as well as doing autopsies, to determine how a disease process is affecting the body. So there's two different types of anatomic pathology, and one is surgical pathology where pathologists get specimens from the operating room. They look at it

under the micro--excuse me--under the microscope to try and determine if it's benign or if it's a malignancy. Autopsy pathology is actually doing an autopsy on a decedent to determine multiple things such as what caused their death. Often they're done to determine if cancer treatments are being success or not.

Now, a subset--okay. Let me do clinical pathology. Clinical pathology is actually the pathologist run the labs. The toxicology lab, the clinical microbiology lab. All the--hematology lab. All the labs are directed by pathologists.

Now, a subspecialty of anatomic pathology is forensic pathology, and in forensic pathology, what we do is our job to determine cause and manner of death. Usually the autopsies that we perform as forensic pathologists are those of non natural deaths. Typically, let's say, car accidents, hangings, gunshot wounds, all those things. We're training to identify and recognize entrance wounds, exit wounds, all those different types of nonnatural deaths.

Now, we will do natural deaths on a person who has died suddenly and un-expectantly if they have no medical history and they're relatively young. We can often find a cause for their sudden death. So those are the two types of clinical--excuse me--of pathology, and then

forensics is a subspecialty of anatomic pathology.

Q And in your time as a forensic pathologist, how many autopsies could you estimate that you performed?

A It's difficult to keep track, and I would estimate it's between--I would say approximately 7,000 in 30 years.

Q And approximately how many of those autopsies involved death by hanging?

A Again, it's difficult to keep track. But we--we do frequently have hanging suicides. Sometimes several a month. So I would guess--I would estimate that I've done probably hundreds, in--in the mid to high hundreds.

Q And just to be clear, are you familiar with how deaths occur in death by hanging?

A Yes, I am.

Q And have you ever testified as an expert prior to this case?

A Frequently, yes. Especially as a medical examiner of the--prior to my retirement--I retired in January of 2025. I was a tenured associate professor at East Carolina University, and our office covered 28 counties in eastern North Carolina, and so I frequently testify in homicide cases and I've testified as the medical legal expert in other cases.

Q To your knowledge have you ever been excluded as

an expert before?

A I have not, to my knowledge.

MS. MORRIS: Your Honor, we would tender Dr. Kelly as an expert in the field of forensic pathology and mechanics of death by hanging.

THE COURT: Forensic pathology and mechanics--would you like to voir dire?

MR. FERRELL: Yes. Just one question.

VOIR DIRE EXAMINATION

BY MR. FERRELL:

Q Dr. Kelly, have you ever--in your experience as a forensic pathologist, have you ever conducted an autopsy on someone who has died by judicial hanging as opposed to either suicide or accidental?

A I have not.

MR. FERRELL: Thank you.

THE COURT: Any objection to her testifying?

MR. FERRELL: No, your Honor.

THE COURT: I'll allow her to testify as a forensic pathologist and was it mechanics by death by hanging.

I'll give the same qualification I gave with regard to the last expert. Kind of difficult to have an expert in this country on an archaic form of punishment that's been out of--

THE WITNESS: Uh-huh.

THE COURT: --existence for more than a hundred years. But both sides have offered these people to try to give me information that's helpful, and I'm gonna take that information and give it the weight that it's entitled to under the circumstances. While both experts are highly qualified in their individual fields, kind of hard to be an expert in this one, but you can proceed.

MS. MORRIS: Thank you, your Honor.

DIRECT EXAMINATION (CONT.)

BY MS. MORRIS:

Q Dr. Kelly, can you briefly describe the mechanism of hanging?

A If we're talking about a suicidal hanging, that typically is due to what we call "asphyxia," which is not actually oxygen exclusion, but what happens in these cases is that the--and in my report I list the amount of weight required to collapse structures, such as the judicial--I'm sorry--the jugular veins are on the out--outer side of the neck, and they collapse very quickly under about four pounds of weight.

So the blood from the arteries, which are the carotid arteries, continue to put blood into the brain, but the blood can no longer exit the brain because the veins which carry the blood back to the heart are now occluded.

So it is most likely that there is brain ischemia because the blood--the brain is no longer able to get oxygen into the brain because there is no way for the deoxygenated blood to leave the brain. So we do have brain asphyxia, and that is the basic mechanism of their death.

Q And when brain asphyxia occurs, how long do you think, based on your findings in autopsies, it would take for an individual to die by hanging?

A Okay. So there's death, and then there's unconsciousness, which are two different things. The mechanism that occurs--because it causes the brain to become ischemic, it occurs--unconsciousness occurs quite quickly. I would say under a minute. However, the heart can continue to beat for some period of time. Even though the brain is ischemic, the heart can continue to beat for minutes. So the person is not dead, but they may be unconscious.

Q What are the usual findings in an autopsy on someone who has died by hanging?

A Typically, in a suicidal hanging, there may be no findings internally. We do have external findings, which is what we call the "furrow" from the rope or whatever ligature that they use. We see often belts or dog leashes, all kinds of different things. We will see an outside mark from that. We will see that it's usually above what we

call the "thyroid cartilage" which is the Adams apple.

And internally when we get inside, typically, there may be a small amount of hemorrhage in the surrounding muscles, but usually there's nothing--no significant trauma to the neck structures, which is why we know the mechanism is not from fracture or from collapse of the trachea. It's basically, again, the cerebral ischemia.

Q Based on your review, what's the difference between the anatomic findings in a judicial hanging and a suicidal hanging?

A So the--as was already stated by the judge, that the judicial--excuse me--judicial hangings are difficult to--to be an expert on because it doesn't happen very often. There were two hangings in Washington State that were judicial hangings in 1993, I believe it was, and '94, and at--those two prisoners were actually autopsied. They did CT scans. They did magnetic residence imaging. They did angiography, which is studying the blood vessels in the neck. They did very thorough studies, and then they did full autopsies to try and confirm the damage that occurred to the prisoners from the judicial hanging.

What's interesting is they were handled basically the same, and the two prisoners had very different results. The first prisoner--let me just find my thing--the first prisoner--let me just--okay, the second prisoner--

Q Dr. Kelly--
A --let me go back to that.
Q --would it be helpful--
A Yes.
Q --to refer to your declaration that you submitted in this case?
A Yes, it would. Yes, it would.
MS. MORRIS: Your Honor, could I--I would like to admit her declaration as an exhibit.
MR. FERRELL: No objection.
THE COURT: We'll mark that the next numbered exhibit, 28.
(Exhibit 28, received in evidence.)
THE WITNESS: So it would be the--right before the summary.
THE COURT: What was handed to me has her CV attached to it. We previously marked--did we mark her CV already?
MS. MORRIS: We did, your Honor. It was a separate exhibit. That may have been a mistake on our part.
THE COURT: All right. So let's take that out and just mark her report--or, I'm sorry, her declaration as Exhibit 28.
THE WITNESS: So when we--may I continue? Is

that okay?

THE COURT: Madam Court Reporter, is she okay to continue?

(Court reporter responded in the affirmative.)

THE WITNESS: Thank you.

A So they did multiple medical studies as well as a complete autopsy on both of these prisoners, and again, they were hung under the same circumstances, but they had very different autopsy results.

The first prisoner had--he did not have transection of the spinal cord. He did have some misalignment of his cervical vertebrae, but the biggest thing that he had was what's called "vertebral artery lacerations." The vertebral arteries are the--they're arteries in the back of our spine that actually feed the back part of the brain, and these are known to cause immediate death if they're torn. We often see them when people undergo bar fights and someone gets hit underneath the chin and hyperextends their neck. Those people will immediately collapse and be unconscious and unresponsive immediately. So this--the first prisoner had vertebral lacerations which then causes blood to go onto the brain surface which is causing immediate death.

Now, the second judicial hanging in Washington State did actually have a complete transection of the

spinal cord between the second and third cervical vertebrae. He also did have, I believe, vertebral artery injuries, but they were not as severe as the first prisoner.

So the point being is that they had two similar hangings, but they had very different outcomes, other than both of them died very quickly.

Q And when you say that these two prisoners had similar hangings, are there different types of hanging?

A There are different types of hangings. There's what they call "short drop" which the prisoners are basically--they can be on their knees and have a rope like around them, the neck, and then they're pushed forward; or they can drop from a short distance, rather than a very--you know, a longer drop.

I'm looking for my things here.

So there's a standard--there's a short drop, there's a standard drop, there's a long drop, and each one will produce different outcomes.

So the short drop, again, is--been used in the middle east quite a bit where they actually--it's similar to a suicidal hanging where they basically strangle instead of--won't have any injuries to their neck.

The standard drop, they usually use the same amount of drop, which is four to six feet, which is very

different than when you use the long drop which uses a calculation of the body size, body weight, and all those other things.

Typically, the long drop is--is the one that will cause the most significant injuries to the neck and the spinal cord.

Q Do you know which type of hanging was used on the most--the two Washington prisoners that you referenced?

A They were both long drops, calc--they used the calculations that are in the literature and used the long drop.

Q And would you consider both of those hangings to be successful, as in not botched?

A Yes. Yes. With--with--basically, instantaneous death, yes.

Q And based on your review of the literature associated with judicial hanging, what are the--the risk of a botched hanging?

A Basically, from the literature that I read, it would be that if there was not successful damage to the spinal cord or the vertebral arteries, basically the--the prisoner would undergo strangulation, which is, in and of itself, a more--it would seem to be more painful to me, but again, unconsciousness occurs quickly. I--but some people document that people, you know, dance--quote, dance, on the

rope while they're hanging and they're strangling. So I think that that would be more of a significant painful and anxious way to die.

Q And based upon your review of the literature, what is required for a successful judicial hanging?

A I think the prior person was mentioning the--the things that are required. One of the requirements, again, is a gallows, which not many states have available. The one--from my reading, the one in Washington State was actually made out of some sort of metal, and it has to have a trap door or a drop door so that the person can fall through the drop.

You have to have the right kind of ligature or rope, and it has to be so that it's not stretchy, otherwise the person can bounce when they drop instead of them just go down; and you have to have an executioner who is trained and aware of how to do these hangings successfully.

They--some of the literature from the older times of executioners that were often hanging people, they trained one another, and they each had their own method of hanging, and so there were significant differences in how people were hung and different findings in the later examined autopsy material. So I think that, you know, having an executioner that's trained in this method is really crucial in order to be successful.

Q So would you agree that without proper gallows, ligature, and appropriately trained personnel, the likelihood of pain is high?

A I'm gonna say it's more likely than not, yeah.

Q And in your opinion and based on your experience in conducting the autopsies on those who have died by hanging, would--is it your opinion or would--let me rephrase that. Would you say that the risk of unsuccessful hanging is high?

A I guess I'm not sure what you're asking. Can you repeat that.

Q I guess it--it's similar to the last question I asked. If--if someone were to attempt a hanging, whether suicidal or judicial, that did not know what they were doing, would you--is it your opinion the risk would be--of pain would be high?

A Yes.

MS. MORRIS: No further questions, your Honor.

THE COURT: Cross-examine.

CROSS-EXAMINATION

By MR. FERRELL:

Q Dr. Kelly, good afternoon.

A Good afternoon.

Q Hanging, if done properly, can cause instantaneous death, can it not?

A A judicial hanging can, yes, if it's done correctly.

Q And from your findings and your analysis of the hangings in Washington State, did both of those judicial hangings--they caused instantaneous death? That was your testimony, correct?

A Yes, sir.

Q And you cited an article about suicidal hanging, and I'm going to say the name wrong probably, Sauvageau, and the--it's your number two reference--"Agonal Sequence"--

A Okay.

Q --"in a Filmed Suicidal Hanging."

A Oh. Uh-huh.

Q And what was the time it took for that person to become unconscious in their hanging, in their suicidal hanging, do you recall?

A Oh, let me look that up quickly.

Here it is.

It was very quick, I believe. I'm looking right now. Let's see. And this was taped, so it's--

Q It was actually--

A It's very--

Q --article--

A I'm sorry?

Q I said, to me it was a fascinating--

A Yes--

Q --article that someone taped their own hanging.

A It's correct, and it's agonal sequences were the following: Apparent loss of consciousness in 13 seconds, then he began to convulse, then he started to have what we call "decortication rigidity" and "decerebration rigidity" for approximately 21 and twenty--excuse me--21 and 46 seconds, and loss of final muscle tone at one thirty-eight--one minute, 38 seconds.

Q But the--the critical fact I was wanting to bring out is he lost consciousness in 13 seconds?

A That's correct.

Q And you say in your report that hanging has been around for centuries, that's correct?

A Yes, sir.

Q And when--what were the dates again of the Washington hangings, which seem to be the latest--the last judicial hangings in the United States?

A Well, the one in--the first one was in 1993, and I believe the second one was in 1994, and there was one subsequent hanging in Delaware in 1996.

Q And do you have any information about that hanging, whether it was instantaneous death or not?

A I do not.

Q And you described that the materials that would be necessary to construct an apparatus for hanging based on your knowledge of what happened in Washington State?

A Correct.

Q Is it--those materials would be readily available, is that correct, to--for purchase by state officials?

A I--I can't--I won't--I don't know that. I would assume they are, but I don't know their accessibility.

Q Are pharmaceuticals for lethal injection readily obtainable for--

MS. MORRIS: Objection, your Honor.

MR. FERRELL: If she knows.

THE COURT: Whether?

MR. FERRELL: States are able to purchase pharmaceuticals for lethal--judicial lethal injections.

THE COURT: I'm not sure what the relevance of that is.

MR. FERRELL: The question of readily available methods. I'm trying to establish that hanging might actually be more readily available than lethal injection.

THE COURT: I'll--

THE WITNESS: I can speak to that--

THE COURT: I'll let--

THE WITNESS: --if that's okay.

THE COURT: I'll let you answer.

BY MR. FERRELL:

Q Okay. Yes. Yes.

A It's my understanding some states are having difficulty getting pharmaceuticals for lethal injection, such as Alabama and Louisiana, and so they are not available to all states, I will say.

Q And is that because most manufacturers disallow sales to states for lethal injection--

MS. MORRIS: Objection, your Honor.

Q --do you know?

THE COURT: I'll sustain the objection.

MR. FERRELL: Okay.

THE WITNESS: It's my understanding, yes, that's correct.

THE COURT: Ma'am, you don't have to answer the question.

THE WITNESS: Oh, I'm sorry.

THE COURT: But we thank you anyway.

BY MR. FERRELL:

Q And hanging was the primary means of the death penalty in Britain until the 1960s. You wrote that in your report; is that correct?

A Yes, sir. When they made death penalty--no longer have the death penalty.

Q And you said, you testified that without properly trained personnel, there was a higher chance of botch. Is that correct--

A Well, there would be a higher--higher chance of strangulation rather than necessarily able to do the--they would be more likely to have a strangulation death than a quick instantaneous death by damage to the neck structures.

Q And on a strangulation, loss--loss of consciousness could occur, at least according to the article you cited, as early as 13 seconds; is that correct?

A Yes, that's correct.

Q And would you agree that without proper--properly trained personnel almost any method of execution could be botched?

A Yes, I would agree with that.

Q So with properly trained personnel on a hanging, would that--would--with properly trained personnel to conduct a judicial hanging, would you believe that a botch is likely?

A I would assume not if the person is--excuse me. If the person's appropriately trained and all the equipment is appropriate, I would assume that it would be successful.

Q And the records of how Washington State conducted its gallows and records about how the British conducted hangings up until the 1960s would you assume that those

records are available for any state to implement?

A I--I don't know the answer to that, but if they have a written protocol, they certainly might be.

MR. FERRELL: All right. Thank you, Dr. Kelly. I appreciate it.

THE WITNESS: Thank you.

THE COURT: I just have a couple of questions, Doctor. You wrote--

THE WITNESS: Sure.

THE COURT: You wrote in your report a history. Of course, I guess you had to get that from somewhere. Where did you get your history that you relayed in your report?

THE WITNESS: Again, most of the--most of the--I got the history from most of the articles that are listed in my references.

THE COURT: And you mentioned in your testimony that there were calculations in literature. Can you elaborate--

THE WITNESS: That's correct.

THE COURT: Can you elaborate on what that means?

THE WITNESS: So the--the executioners were able to calculate that they needed a certain amount of force, and I think it was 1,260 foot pounds, 'cause this was basically done during the British era before we used force

of Newton's, and so they were--they would actually calculate by the height of the person how high they needed to raise--or what distance they needed to drop the person from in order to get that amount of force against the neck. There are current--more current tables that were used for the Washington hangings that, I believe, are more based on height and weight and the body's habitus, and I believe, those I--they may be quoted in those articles from--from the Washington State hangings.

THE COURT: So I think our last expert said there were several numerous types of tables out there. How long are--have these tables been in existence?

THE WITNESS: I would say since--from what I read, the--again, it was the 1800s in Britain that they were developing--the executioners were actually trying to be--to cause less pain and suffering to the people that were hung, and so that's why I said to perfect judicial hanging they modified the length of the drop, the form and type of ligature, thickness of the rope, and the position of the knot and that was prior to 1964. So I--I believe it was in the 1800s that they were trying to actually make it more successful.

THE COURT: So these tables have been around for a long time in some form or another?

THE WITNESS: Yes, sir.

THE COURT: And do you have any way to calculate an error rate when using these tables?

THE WITNESS: I do not. I--that, I think, would have to be done by either an executioner who's experienced with it, or someone who would know more of a statistics analysis than myself.

THE COURT: So what happens if you use more force than is necessary?

THE WITNESS: Well, there are--and in my report I note that if you--if you use more force than necessary, you can decapitate the person, and that's been cited in the literature several times.

THE COURT: So it's--

THE WITNESS: That they were decapitated.

THE COURT: Is there an effort to avoid decapitation?

THE WITNESS: Oh, definitely, and that's why the--you know, when I was listening to Dr. Goldstein and you--the height makes that determination, but if--you know, if the drop is miscalculated, you can have that happen, and so that's why the experience of the executioners are crucial because they have to know what will be successful as far as neck injury but not decapitate the person.

THE COURT: Well, if you decapitated the person, would they lose consciousness sooner?

THE WITNESS: I think they'd be instantaneously dead. Sorry to laugh. But if you decapitate them, they would be instantaneously dead.

THE COURT: So I'm trying to--in your expertise, do you know why that the effort is made not to decapitate?

THE WITNESS: I think primarily for compassion (indiscernible), and families get very upset if their loved one is decapitated. That would be my--my feeling. It would be more for compassions means and families.

THE COURT: On the other side of the table, if you use too little force, what--

THE WITNESS: Uh-huh.

THE COURT: --what can the prisoner expect?

THE WITNESS: Well, then you expect strangulation, which is more of a--of what we see with suicides. Again, can lead to unconsciousness very quickly, but if a person's unconscious, I don't know what their pain perception is at that point. I don't think anyone knows. So if there's not significant force to damage the neck, they will basically strangulate.

THE COURT: Okay. That's all the questions that I have. If anybody has any others based upon what I--

MS. MORRIS: I have one followup question.

THE COURT: Okay. Sure.

Whenever I ask questions, I understand it might

jar either side to think of something that they forgot to answer--ask, you know. So go ahead.

REDIRECT EXAMINATION

BY MS. MORRIS:

Q Dr. Kelly, have you ever conducted an autopsy where the cause of death was drowning?

A Was drowning?

Q Yes.

A Yes. Yes, definitely.

Q How--what's the difference between death by drowning and death by strangulation, or are they similar?

A Well, death by drowning, basically, is you are inhaling water from a source, let's say you're in a pond or lake or whatever. It would be--you're--so with--with death by drowning, your lungs fill with water. So you are no longer able to oxygenate air because you don't have any air and you have water in your lungs. You, again, would get cerebral edema and cerebral ischemia or lack of oxygen to the brain, but it takes longer. Often there's a struggle. The person often struggles to either find the surface or to get out. I think, ultimately--I don't know if there have been any studies about unconsciousness in drowning. I did not look into that. So I don't know how quickly they would become unconscious.

MS. MORRIS: No further questions.

MR. FERRELL: No con--no, no questions.

THE COURT: All right. We're through with you, Doctor. Thank you.

THE WITNESS: Thank you so much.

(Witness excused.)

THE COURT: Need a break or--

MR. AYERS: I think the state's ready to call Dr. Joseph Antognini.

(Break was requested.)

THE COURT: Five-minute break.

MR. AYERS: Five-minute--yeah, that's fine.

THE COURT: Our court reporter's probably happy to hear that.

(Recess was taken.)

MR. AYERS: Dr. Antognini, good afternoon. Can you hear me?

DR. ANTOGNINI: I can, and I hope you can hear me okay.

MR. AYERS: Yes. You're coming through loud and clear. Could you please state your name and spell if for the Court.

THE COURT: Hold it one second. You didn't remind me.

MR. AYERS: My apologies.

THE COURT: That's all right.

IN THE SUPREME COURT OF TENNESSEE
AT NASHVILLE

STATE OF TENNESSEE	)	Criminal Court for Knox County
	)	No. 58183A
Respondent,	)	
	)	No. M2020-01156-SC-DPE-DD
VS.	)	
	)	Special Master W. Mark Ward
CHRISTA GAIL PIKE	)	
	)	
Movant.	)	

EXPEDITED TRANSCRIPT OF THE EVIDENCE

Volume 6

(Proceedings on August 12, 2026)

THE HONORABLE W. MARK WARD, PRESIDING JUDGE

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Doctor, will you raise your hand.

(Witness was sworn.)

THE COURT: Okay. Thank you.

JOSEPH ANTOGNINI, M.D., M.B.A., called as a witness, being duly sworn, was examined and testified via video as follows:

DIRECT EXAMINATION

BY MR. AYERS:

Q Thank you, Doctor. Could you please state your name and spell it out for the Court.

A Joseph Antognini, J-O-S-E-P-H A-N-T-O-G-N-I-N-I, and the G is silent. So it's Antognini.

Q Antognini. Silent G just like lasagna, right.

A Yes.

Q All right. So could you please describe your educational background for the Court.

A I went to Berkeley for my undergraduate degree, and I graduated in 1980; and then I went to medical school at the University of Southern California and finished there with my M.D. in 1984 and then trained in anesthesiology at UC Davis in Sacramento; and I graduated from UC Davis--that program as I--from residency in 1987. As far as other education is concerned, I also did get an MBA from Sac State in 2010. So that's the--my educational background.

Q And could you describe your clinical career for

the Court.

A Yes. So once I finished my anesthesiology residency, I went out into private practice in the Sacramento area. I basically did all my own cases. I did that for a little bit over four years, and then I returned to UC Davis to go onto the faculty there, and when I was there for the remainder of my career at UC Davis, I was a clinician doing clinical work. I did research related to anesthetic mechanisms. I then--I also did administrative work and teaching. I was--became a tenured professor in anesthesiology and pain medicine, and I also had a--was a professor of neurobiology, physiology, and behavior at UC Davis. I retired from UC Davis in 2016, and now I do clinical research. I also do basic science research. I work for (indiscernible) pharmaceutical company that's--were trying to develop new anesthetics.

Q Thank you. Just to make sure the Court heard it. What were your clinical specialties?

A Anesthesiology. So I took care of patients in the operating room or in--before surgery, during surgery, and after surgery, and I provided anesthetics to these patients, and I managed a lot of very ill patients because UC Davis is a level 1 trauma center and has a lot--it's a referral center for the northern California area. So there are a lot of very sick patients that come through there.

So I took care of a lot of very ill patients. My focus primarily was in what we call the neuro anesthesia, which is basically provide the anesthesia for people who are having neurosurgical procedures. So this includes people with brain tumors, aneurisms, vascular abnormalities in the brain, spinal surgery, things of that nature. I did a lot of clinical work in other--other--(indiscernible) surgery as well.

Q Now, in your clinical experience, did you have experience achieving vascular access?

A Yes, a lot. Thousands of patients in terms of IV access. Lot of central lines, things of that nature, and so you can't really be an anesthesiologist without having to do that kind of stuff.

Q And did you ever care for patients that had a condition called "thrombocytosis"?

A Occasionally, patients would have blood disorders, including elevated platelets, thrombocytosis. So, yes, that was--it has been already explained to the Court earlier. It's not a really very common disorder, but certainly, I would--would have--I saw patients like that at UC Davis for operations and surgeries.

Q Did you administer anesthesia to patients like that?

A Yes.

Q And do you have experience reviewing lab results?
A Yes. So, obviously, as an anesthesiologist, patients often will get laboratory tests done before surgery. During surgery we get a lot--we get a lot of lab tests, especially, if somebody was very critically ill, during surgery we're--we're getting blood tests all the time to look at different issues in terms of blood count and things like that. That carries through into the postoperative period as well where we're looking at labs for--for patients to see how things were going.
Q Okay.
A In my current role in clinical research, I also--patients--these are subjects coming in for some of these studies, and we have to get labs for them, usually a chemistry panel and then a blood count and included in that, of course, would be a platelet count. So I have to make clinical decisions about what's going on with their laboratory values to see if there's any problems going on with the study. So I--I review those on a weekly basis, not--if not more often.
Q Thank you. Now, you issued a declaration in this case; is that correct?
A Yes.
Q And did that declaration have a copy of your CV attached?

A Yes.

MR. AYERS: Can we put that up on the screen to show to Dr. Antognini.

Q And I'll also ask you, do you have a copy of that declaration and CV that you can refer to?

A Yes. I have it up on my computer.

MR. AYERS: May I approach, your Honor?

THE COURT: Sure.

MR. AYERS: Are we at 29 in terms of the exhibits, your Honor?

THE COURT: Exhibit 29.

MR. AYERS: I'd like to move Dr. Antognini's report and CV as Exhibit 29.

THE COURT: All right. We'll mark it 29.

(Exhibit 29, received in evidence.)

BY MR. AYERS:

Q Now, does your CV include a bibliography of your published writings?

A Yes.

Q Roughly, how many publications have you authored?

A All told, with, basically, my scientific publications, editorials, and abstracts, letters to the editor, et cetera, I think it's over 200 now.

Q And have you testified as a medical expert before this case?

A Yes. In previous cases, I have, yes.

Q Roughly, how many times have you testified as a medial expert?

A Well, actual testimony, maybe 20 times, I'm guessing. That's sort of a ballpark at this point. I've had depositions as well. That's not part of my testimony count. I probably had--had maybe 10 depositions and then also about 20 court appearances, is my guess.

Q Sure. And have you testified in other cases regarding lethal injection?

A Yes.

Q And to your knowledge have you ever been excluded as an expert before?

A I have not been excluded. There have been some issues--or not issues. There are topics that I was not allowed to testify on because I had not included my opinion, and I don't remember exactly what it was, but I didn't include it in the report, and basically, they--the Court said because I hadn't mentioned in the report, then I wasn't allowed to offer opinion on that. I--I don't remember exactly what that was. I think that happened once.

Q Okay. But has any Court ever found that your education, training, and experience was insufficient to qualify you as expert?

A No.

MR. AYERS: Your Honor, I'd like to tender Dr. Antognini as an expert in the fields of general medicine and anesthesiology.

MR. IHNEN: No objection, your Honor.

THE COURT: All right. Allow him to testify in those fields.

BY MR. AYERS:

Q So, Dr. Antognini, did you review your declaration before you testified today?

A Yes, I did review it.

Q Is everything in that declaration still true and correct today?

A Yes.

Q And are the opinions in your declaration issued to a high degree of medical certainty?

A Yes, they are.

Q And does your declaration list the materials you reviewed in preparing it?

A Yes, it does list the materials.

Q All right. I'd like to turn to your conclusions in this declaration. And I'd like to start with your conclusion about loss of consciousness due to the administration of pentobarbital. Now, did you listen to the testimony in this case yesterday?

A Yes, I did.

Q Did you hear the Court discussing what it viewed as a very important issue in this case?

A Yes, I did hear that--the issue around, essentially, when consciousness is lost was important.

Q Okay. So you're aware that this is--this is an important issue here. So I'm gonna ask you some questions about your conclusions relative to the loss of consciousness.

Now, can you talk generally about what happens when pentobarbital is administered into a person's body?

A Well, pentobarbital is a barbiturate, in the class of barbiturates, and it has the property to produce unconsciousness--sedation and then unconsciousness, and you can actually achieve, basically, what's called "surgical anesthesia" with it. You can actually do an operation with pentobarbital. Quite frankly, you could probably do that with any of the barbiturates, but you can certainly do it with thiopental, which is, think as the Court has heard earlier, is essentially equivalent to pentobarbital, essentially for the purpose that we're discussing.

So it's a--sometimes used as a sedative. It can be used as an anesthetic. It can be used for--as an anticonvulsant to stop seizures, but I would just say that we don't use pentobarbital as a surgical anesthetic because

it is just--you'd have to give it--so much of it to achieve that point, it would take someone a long time to wake up, and we just have much better drugs these days.

Q All right. So in--do you know how much pentobarbital is administered to a person under Tennessee's lethal injection protocol?

A Yes. It's 5 grams or 5,000 milligrams. Those are equivalent doses.

Q And understanding is you just said that pentobarbital is not used so much clinically these days. Is there a dose of pentobarbital that is considered a clinical dose?

A Yes. That is about 500 milligrams, or .5 grams, and that is the dose that could be used to induce anesthesia and to produce unconsciousness. Actually, probably in some people might be even less than that, maybe 300 milligrams, approximately, depend--depends on the particular patient and the patient's weight, but that's sort of the ballpark range of 300 to 500 milligrams or 3 to 5 milligrams per kilogram, if you want to use that as a way of determining the dose. But it's gonna be in that range to produce--or to induce anesthesia, basically, for--for some procedure.

Q And, again, thinking about this clinical context, would that dose of pentobarbital be administered

intravenously?

A Yes.

Q And so, again, stay in this clinical ballpark, what happens when a person receives a clinical dose of pentobarbital?

A They will become unconscious. It--once the dose that--say 500 milligrams, actually enters into the subject, or the patient, unconsciousness will occur probably or basically with 20 to 30 seconds. It's some variability there, but that's basically the range in which I would expect that to occur. Sometimes it can occur faster. Sometimes maybe not 30 seconds. But there are some other factors involved there in terms of how long it takes, but in the range of 20 to 30 seconds.

Q In your career have you personally observed pentobarbital administered to patients?

A I have. I've given it myself. I haven't given it as an induction drug, but I have given pentobarbital to patients during surgery.

Q And--and is your conclusion here that unconsciousness results within 20 to 30 seconds consistent with your clinical experience?

A Well, again, I'm gonna base my opinion on the use of thiopental, which again, is equivalent, because it's even--during my era of training and practice, we did not

use pentobarbital for induction, but we certainly--I used thiopental a lot, and again, they're equivalent in terms of their actions, and you--you give that clinical dose of thiopental, and yes, they become unconscious within 20 to 30 seconds very easily. It's pretty standard. Sometimes even faster than that, as I said earlier.

Q And in your experience did you ever see someone who would receive that kind of dose of thiopental exhibit any signs of pain?

A On--on a rare--I shouldn't say "rare," but some people do have a sensation of burning when thiopental is injected. It's probably on the order of maybe 10 percent. It's not severe pain, but they do feel burning. The drug that we--we use now, propofol, actually has a higher rate of that sensation than thiopental. There's ways to try to prevent that, but in general, yeah, it could be painful to inject a drug like thiopental, but usually not.

Q Okay. Now--

A And I just will say that the--once they become unconscious, then I don't believe that people are gonna have any pain. As I said earlier, you can use these barbiturates for surgical anesthesia.

Q Sure. Now, let's talk about this word, consciousness--unconsciousness. When you say "unconscious," what do you mean?

A I mean, essentially, the--the--you can look at it from--from basically the medical perspective of--of that, a person is no longer responsive to a different types of command or stimuli. There are actually sort of a scale that you can use or a method to determine that. You can say, "Open your eyes." You could call out their name. You can shake them. You can actually apply a noxious stimulus where you--you do what's called a "trapezius squeeze" where you squeeze, basically, right there on the shoulder blade when you're there. There are other things that you can do.

And these drugs, barbiturates, thiopental and pentobarbital, if given in sufficient doses can prevent response to all of those. Basically, you don't have any response to any of those. So unconsciousness, in my mind, occurs in that spectrum where you'll no longer be able to respond to a verbal stimulus, and they're not responding to shaking, and then they won't respond to a noxious stimulus. But it's primarily the inability to--to respond to --the spoken word or shaking or stuff like that. I would consider that to be someone who's unconscious.

Q Now, is it your opinion that a person who is unconscious can perceive pain?

A My opinion is that someone who is unconscious cannot have the experience of pain. You have to be conscious to have that experience. When we think about

pain, it's--it's basically the everyday experience of what pain is. We've all had pain in our life. We stub our toe. We step on something sharp. We put our hand on a hot skillet or whatever it is. We've--we've all had that experience, and that's something that requires consciousness to have that experience.

Now, I'm not saying that you can't have some type of physiological response to pain stimulus when you're unconscious. Absolutely, you can see people, even brain dead individuals, can have cardiovascular responses or heart rate increases, blood pressure increases in response to a noxious stimulus, but, clearly, they can't have the experience of pain in that example I gave because they're brain dead. Likewise, somebody who's deeply anesthetized, in my opinion, cannot have the experience of pain, and--and, quite frankly, even someone who's relatively lightly anesthetized, I don't believe can have the experience of pain.

Q Now, did you listen to the testimony of Dr. Zivot yesterday?

A Yes, I did.

Q Did you hear his comments on the definition of the term "unconsciousness"?

A I did. I...

Q And do you--do you agree with his assessment or

characterization of what consciousness is?

A Quite frankly, I may have to review what his answer was. So I have to say that I was a little bit lost, I suppose. I wasn't sure I could even follow him, in terms of how he was describing that. So--

Q Do you remember him--

A --it was a little--

Q Do you recall him using the term "an altered state"?

A Yes. I--thank you. Yes. I do remember him using that term.

Q Is that a widely accepted term within the field of anesthesiology to refer to the concept of unconsciousness?

A Not--I wouldn't say it's widely used. I--I think doctors, like any other person, sometimes we use very precise language and sometimes we don't. So there may be people out--physicians out there that use that type of language, but it's in a very--in my opinion, it would be a--sort of an inexact way. So I don't think it's really something that--that we would normally use when we are talking about consciousness.

Q Okay. Now, you've answered some questions about a clinical dose of pentobarbital, but as you testified, the lethal injection protocol calls for administration of five

grams, correct?

A Yes.

Q Now, as a person receives a dose of pentobarbital that exceeds the clinical dose and goes up to five grams, what is your opinion as to what happens in that person's body?

A So let me just start with the first half a gram, with a clinical dose, as I--as I say, as that pentobarbital is being injected, once the first half a gram or 500 milligrams of the pentobarbital in the execution setting goes in, actually enters into the--into the subject, or inmate, then, as I said, you're gonna have unconsciousness occurring within 20 to 30 seconds.

That is enough to also--in many people to affect their breathing. So they're--they may not breathe as well or they may not breathe at all after--on that just clinical dose. But you're continuing to give more and more and more of the pentobarbital. So what's happening now is that the pentobarbital level is really starting to build up in the body and in the brain to produce profound unconsciousness where even the--the electrical activity of the brain is profoundly depressed.

You also start to get effects on the cardiovascular system. So you start to see the blood pressure plummeting. You start to see the heart not

functioning as well. The breathing has stopped completely, aside from maybe some gasping here and there. That can happen. I'm sure some of us--many of you, perhaps, have had to take your animal in or your dog into a vet--your vet, and they get the injection for--basically, to put them down, and sometimes they can have those gasping breaths. So that's--that can happen from--from the pentobarbital overdose.

And if you give more and more of that pentobarbital in an execution setting, you're just getting this one-way path of cardiovascular collapse. So the blood pressure is virtually zero. The heart's not pumping very much at all, if at all. No breathing. So there's not any oxygen coming in. So the tissues are starting to not get enough oxygen from that. Then also, because there's not enough blood circulating, there's not enough oxygen getting to the tissues, especially the brain and the heart, and eventually what happens is that the heart will continue to have some electrical--electrical activity, but there's no blood pressure, there's no breathing, there's no cardiac blood flow, and eventually the heart will stop. The electrical activity will stop, and then the--the person's dead.

Q Now, if we can turn to page 5 of your report, please. If we could put that on the screen. Want to look

at paragraph 8 at--and your conclusion that pentobarbital administered to humans results in unconsciousness in 20 to 30 seconds on average. Can you please explain to the Court in as much detail as possible how you arrived at this conclusion.

A The 20- to 30-second range, that your question? I'm sorry.

Q Yes, that's right.

A Yes. So I cited a paper there, a Dundee. It's one of several I could have chosen, but same--pretty much the same thing, but--but this one's in--obviously, a early study when thiopental and some of the barbiturates have been out for a while, and in that study he showed that the onset of unconsciousness occurred in that range. In the higher doses, it actually occurred sooner. He has a nice figure in his paper showing that, that these individuals become unconscious pretty quickly.

So there's no doubt that the onset of consciousness--of unconsciousness, the onset, is dependent among few things: One is the speed of injection; that is, if the faster you give the drug, the faster you will get unconsciousness, up to a point; and then the dose. So if you give a high dose quickly, then you're gonna see unconsciousness occur more quickly, and the execution setting with pentobarbital is exactly that. It's a high

dose given relatively quickly. It's given over two to three minutes, but it's a high dose. So it's on a sort of a per second basis. So it's going in pretty fast.

Q Okay. Now, this paragraph 8 talks about pulmonary edema. We're gonna come back to that, but I'd like to go to the next page, page No. 6, and look at paragraph 9. And in this paragraph you cite a study here by an author named Aleman. Can you describe what this study says and what it's relationship is to your conclusion?

A Yes. So let me first sort of explain how--how--how I and, I think, many others in--in medicine and science try to develop a--come to conclusions about how--how things work, basically, or what happens. And we look at both the human studies and we look at animal studies, 'cause there's things you can do in animals that you really can't do in humans.

And so this study--these studies that I cited here, the Aleman study, for example, these are--are horses that are gonna be euthanized, and they were given a large dose of pentobarbital, and what the authors did is they looked at the--how long it took for the electroencephalogram to--to become silent, and the electroencephalogram, or the EEG, is basically just to monitor the brain waives of the electrical activity of the

brain and normally the brain has--I think, records electrical activity. There's a lot of up and down to it. With this large dose of pentobarbital, it becomes flat. There's no observable electrical activity from the EEG. So that would be similar to somebody who was in a deep coma.

So in this study they looked at the infusion of pentobarbital, and--for these horses, and the--the infusion time was relatively fast, 47 seconds, and the onset of the EEG silence in that study was 53 seconds after the initiation of the infusion. So just to make sure we understand when is the clock starting, start the clock essentially, at--when the pentobarbital goes in. On average it took 47 seconds. There is, obviously, variability there, but on average it was 47 seconds, and then on average, six seconds after that--or 47 plus six, 53--at 53 seconds after the initiation of the infusion, the EEG was silent. So it didn't really take that long for this drug to act. It was, you know, quite fast, and they became unconscious, the horses did, based on the--essentially, the horses collapsed and fell down, 'cause they could no longer support their weight, pretty quickly as well. So that study is consistent with what I would expect to happen in an execution setting.

MR. AYERS: Okay. Before I ask you another question, I want to pause for a second because Mr. Ihnen

has pointed out that there may be an issue with Ms. Pike's video feed. We just want to confirm that she can still hear and see.

MS. BERGMAN: No. I'm sorry. There's not an issue with the video. Ms. Pike has had a medical event, and so she is going to be seen by medical right now. So she has had to leave.

MR. AYERS: Okay.

MS. BERGMAN: And so I don't know what the Court's preference is, to continue or to wait until she asks to return.

THE COURT: Do we want to pause for her?

MR. AYERS: We're--we're content to proceed.

UNIDENTIFIED SPEAKER: Your Honor, we're fine to proceed.

THE COURT: Okay.

BY MR. AYERS:

Q Okay. Dr. Antognini, so, again, to ask you a few more questions about these studies, so the--in the Aleman study, can you just point out to the Court when loss of consciousness occurred in those horses that received the pentobarbital?

A If you could turn to maybe page 7 of my report. Okay. I--I don't recall--looks like I've moved on to the Buhl study. I'd have to look at the Aleman study to know

for sure whether they actually did note that. I may have--may be thinking about the Buhl study in terms of time to collapse. So I'd have to review the Aleman study again to make sure about that, but certainly, loss of consciousness is going to occur before the EEG silence occurs. So EEG is, on average, silent at 53 seconds after the initiation of the infusion. So unconsciousness is gonna occur seconds before that. By seconds, I mean, tens of seconds. So, again, in that 20- to 30-second range.

Q And just to make sure that we're on the same page here, so these--these are studies involving horses, you said, correct?

A Yes.

Q And is there any reason for you to believe, based on your training and experience, that pentobarbital would work differently in a human being than it would in a horse?

A There--there would be minimal, if any, important differences. I--this--these barbiturates are gonna affect mammals, essentially, pretty consistently. That's not true for all drugs, but for the anesthetic drugs, they have very similar effects in terms of do--not doses, but--necessarily, but in terms of the effects that we see.

Q Now, were some of the horses in these studies, the Aleman and the Buhl studies that you cited, were they given other drugs in addition to pentobarbital?

A Yes. In some of these studies, other drugs were given. So sometimes they were sedated before or they were given other anesthetics.

Q And does that affect your conclusions as to consciousness based on these studies?

A No, because the--basically, in some of these studies, yes there are different groups. Some of them received--some of the groups received drugs other than pentobarbital, but in a--two of the studies there were groups that received nothing but pentobarbital, and if you look at the data there in terms of, you know, the onset of unconsciousness and things of that nature, there's really not that much of a difference in terms of the--the timing there. In fact, some of the--in one of the studies, the horses that were sedated had longer times than the ones that received only pentobarbital.

So my analogy to that is that such in a large dose of pentobarbital is being used, it's almost immaterial that the sedatives are--other sedatives are being given, and it's like being hit by a large truck versus being hit by a bus or a train. It's a lot of energy you're being hit with. There's a lot more kinetic energy with the train than the truck, but either way, you're gonna die. So having that--that additional amount of sedation and all that, it doesn't really affect the--the numbers that much.

Q Now, if we can go back to page 7 of your report, you cite a study by Evans that also has to do with unconsciousness; is that right?

A Yes.

Q And in this study you say that unconsciousness occurred within about 14 seconds. Is that right?

A Yes.

Q And this was a study in dogs; is that right?

A Yes.

Q Is that consistent, in your mind, with the findings from the other two studies you cited?

A Yes, very consistent.

Q Now, I want to ask you about a term that you've used a couple times in discussing these studies, and that's "EEG silence" or--or a flat EEG. So can you explain first what an EEG is?

A Yes. So our brains have a lot of neurons and these neurons are cells, basically, in our--in our brains, and they all talk to each other, essentially. They're all connected to each other. They're not--not every neuron is connected to every other neuron, but there's a lot of interconnection there, and they communicate, essentially, by electrical signals. So when we are doing our everyday kind of work and thinking and all that, those neurons are firing. They're developing electrical signals, and you can

measure that in the--on the scalp or by putting electrodes in the brain, things like that. I've--I've done it in humans. I've done it in animals many, many times.

You can--you can measure those electrical stimulus, and under normal circumstances, when we are awake, there is a certain pattern to those--to that signal that you are measuring, and it's basically a--a wave. It looks like a wave, essentially, like a--a wave you might see on the ocean. The difference being--difference they're--they're similar in the sense that sometimes the waves that come in toward the shore are relatively slow. Sometimes they're fast, et cetera.

Same thing here with the signals, these waves that we're measuring. Some of them can be fast; some of them can be slow. But we can measure them, and we can quantify that; and then when you give a drug like pentobarbital or if you have deep coma from some type of injury, whatever the case may be, you lose those electrical signals. The brain is basically not working anymore, and eventually, it becomes silent. Call it "EEG silent." So there is no elec--activity measured or you're not measuring the activity. There's none to be measured. It's just a flat line, essentially, and that's all we say sometimes, "EEG silent."

So, basically, you don't hear--hear anything if

you had it hooked up to an audio. You--you can do that. You can actually, instead of just looking at the squiggly line on the--on the oscilloscope, you can actually put it to a loud speaker and you can actually hear it, and then, when it goes into electrical silence, it's basically silent.

Q Now, on that topic, if we could go to page 8 of your report, I'm looking at paragraph 14. You use a term "brain suppression." Is that the same thing as EEG silence? Is it different? Could you explain that?

A So brain suppression--EEG silence would be a subset, basically, of brain suppression. So by that, I mean that if you were to take somebody, give them--and you measure their electroencephalogram while they're awake, you can give them thiopental or pentobarbital, and as you give more and more of it, the brain will become depressed, the electrical activity of the EEG will--will change and show signs of depression, and then finally, you get to the point where you can actually get EEG silence.

So it's sort of a progression that we can--that we can see. It's not just for thiopental and pentobarbital. You can measure this in--with other anesthetics and see this brain suppression. So it's a pretty common thing to--to measure and to use as a tool to look at the brain when we are getting anesthetic drugs.

Q And in this paragraph 14, at the end you say that you--"EEG silence would be expected to occur within 60 seconds after initiation of pentobarbital infusion." Is it--did I read that right?

A Yes.

Q And just so we're clear, is--is it your opinion that unconsciousness would result before EEG silence?

A Yes.

Q Okay. And could you explain a little bit more detail your conclusion that EEG silence would result from a--the dose of pentobarbital and the lethal injection protocol within 60 seconds?

A So the study--two studies I cite in that paragraph, the Buhrer study and then Hung, they gave--essentially, what their study was about is that they gave thiopental to the point at which the EEG became silent. They actually use something called "burst suppression" where you have periods of silence on the EEG followed by burst of activity, and that's sort of a--the--the step before EEG, complete silence or flat line continuously, and they had to infuse it over some time simply because you have to be very careful giving a large dose to humans because you can see the cardiographs to depression, but also they needed to do it for the purposes of their study in terms of trying to determine the blood

concentrations needed as well.

So there's some issues there, why they went slowly, but in any case, that dose is much lower than the dose that was used, for example, in those animal studies I cited. So at the large doses used in the animal studies, the EEG silence occurred very quickly, and I would expect that--if a large dose like that was given to a human, I would expect it to occur very quickly as well, in that 60-second range.

Now, mind you that the--we have to make sure we are all on the same page as to when we are starting the clock. Is the time zero when the drug is actually being injected into the tubing or is it when the drug actually enters into the person? And I'm seeing that once a--a dose enters into the person, that clinical dose, and then you get beyond it, is when you can start to see the EEG silence occurring within that 60-second range.

So if I can just clarify that, I think unconsciousness is gonna occur within 20 to 30 seconds. You wait another 30 seconds or so, and I would expect the EEG to be silent, based on the dose that is contemplated in this protocol.

Q Thank you. If we could go to page 6, please, paragraph 9. Your declaration mentions the fact that a couple of these studies were cited in a Supreme Court case

called "Bucklew v. Precythe"; is that right?

A Yes. I'm not sure--might have been just one of them. I'm not sure it was one of the other ones or not, but I think it was this one.

Q And in that case did you offer an opinion about the time it would take for unconsciousness to result after pentobarbital enters the body?

A I did, yes.

Q And what was that opinion?

A That it would be in the range of 20 to 30 seconds, basically--

Q And--

A --as I said here. I--I've been pretty--as far as I can recall, I've been pretty consistent about my opinion on this.

Q And to your knowledge, did the Supreme Court cite to your opinion in that opinion of Bucklew?

A Yes, they did. They called me Dr. Michael Antognini, but, yeah, that was me.

Q We all know you're Joseph.

Okay. Now I'd like to move to your conclusion regarding pain, and that's gonna be in paragraph 36, which is on page 18; is that right?

Now, in light of what you just discussed, can you explain to the Court the basis for your--your conclusion

that the injection of massive doses of pentobarbital would not inflict significant pain or even mild, moderate, and severe pain.

A As I said earlier, there are maybe one out of 10 people could have some pain with the actual drug entering into the vein, and--but aside from that, they're not gonna feel any pain because the drug is gonna cause unconsciousness, as I said, very--very quickly, and so, basically, they're not gonna be able to have the experience of pain because of that unconsciousness.

As I said earlier, you have to be--in my opinion, you have to be conscious to be able to experience pain, and as you--as you go through that sort of spectrum of moving from consciousness to deep unconsciousness, you lose that ability, and--and this drug causes that unconsciousness very, very quickly. So I just--I do not believe that someone is gonna have pain as a result of that.

Q Now, you did testify earlier that there may be some discomfort with an injection of a barbiturate like pentobarbital, right?

A Yes.

Q So it is--it's not your conclusion that there is absolutely no pain with an injection of pentobarbital, right?

A Well, I would say that in probably 90 percent of

people, they're not gonna feel pain with--even with the injection. That's--it's 10 percent of people. So most people will not feel any pain. Some people might, but it's not gonna be excruciating pain.

Q Okay.

A So, you know, it's--never say "never," but in general, that--that's the way I would look at it.

Q Sure.

A So to clarify that, I'm not saying that a hundred percent of people are going to have mild pain with injection. I'm saying that 10 percent of people given these drugs would have some mild pain, and the rest would not. That's based on my clinical experience.

Q Right. Could we go back to page 5 of your report. Sorry I'm jumping around a lot here. Paragraph 8, and, actually, this--this is actually on the next page. Same paragraph, paragraph 8, but it's on page 6. Second to last sentence you state, "Before becoming unconscious, the individual would not feel the sensations of pain, suffocation, or air hunger." Can you explain the basis for that conclusion?

A Well, basically, again, on my clinical experience, as well as the study that I've cited, the individual is gonna become unconscious very quickly. I know that there have been discussion around the sensation

of--related to, perhaps, pulmonary edema, things--something like that, but it is my opinion that that doesn't--pulmonary edema is not gonna occur during that period of time when they're becoming unconscious, and when they are unconscious, with--example with a--a sort of smaller clinical dose that would first go in, and then, of course, followed by that much larger dose.

So that sensation of suffocation or air hunger, from whatever cause, is not gonna be felt because they're unconscious. But, again, I--as I said, in a small percentage of people they can have some pain on injection. For example, I said earlier about propofol. That's the drug that we use clinically. We also use a drug called "etomidate" that is used for induction of anesthesia, and that's--also it's painful on injection. So it's pretty common with--or it can occur with some of these drugs.

Q Thank you. Next, like to ask you about pulmonary edema, and this is in--it's in your third conclusion in--on page 18 in paragraph 36 of your report where you state, "Pulmonary edema, if it occurs antemortem, would not be perceived by the inmate because of the profound brain suppression caused by pentobarbital."

So to break that down, why does your conclusion say, "pulmonary edema, if it occurs antemortem"?

A Could you repeat the question? I think you broke

up just a little bit.

Q Sure. Is it your opinion that pentobarbital causes pulmonary edema before death?

A So based on what I--my--my--or what I concluded there, there is evidence that pulmonary edema and lung congestion can occur after death because of just the movement of--of fluid into the lungs. Now, I'm not disputing at all the possibility that pulmonary edema could occur before death. There's a lot of reasons why, obviously, people have pulmonary edema all the time from a variety of different causes. So we know that it can--it can occur during life, and I'm not disputing the fact that pulmonary edema can occur before death. I even, I think, cite at least one study they're talking about the--the development of pulmonary edema in the sort of agonal part of--of death.

But what I--my--the strong opinion is that pentobarbital and the barbiturates would not cause pulmonary edema before the person is unconscious, and the reason for that is simply the vast clinical experience that we have with these drugs. So we've--we, collectively, the medical profession (indiscernible), have used barbiturates for decades, since the 1930s, and large doses of these drugs have been given to patients. I've given large doses of thiopental to patients, and, as I said, it makes them

unconscious, but those patients wake up after surgery and they don't have pulmonary edema. I mean, clinically, they do--they do fine.

If--if a clinical dose of pentobarbital or thiopental cause pulmonary edema, we would have abandoned the drug decades ago because all those patients would be waking up with pulmonary edema or they'd have problems in the operating room. As I said, larger doses have been used without any sequela. So I just don't believe that the clinical dose range of pentobarbital causes pulmonary edema.

Now, what does that mean in the execution setting? Well, as I said, when you start to give that large dose, you have to give the first 500. You know that old saying about the--the journey of a thousand miles begins with the first step. Well, the journey on giving 5 grams of pentobarbital starts with having to give that first 500 milligrams. Well, that causes unconsciousness, and then you give more and more of it, and they're now deeply unconscious and the heart starts to fail. Yes, is it possible that pulmonary edema might occur at that point? It's certainly possible. But I also point out literatures to indicate that pulmonary edema and its congestion could be occurring after death as well.

So it's a little bit unclear when this is

happening, but it's no doubt in my mind that it is happening after the person is unconscious, and they can't feel it at that point, in my opinion.

Q And on page 9 of your report you cite some studies regarding pulmonary edema, correct?

A Yes.

Q Now, is--is pulmonary edema after death a common finding or an uncommon finding?

A Well, I think it depends on the mechanism of death, but it is a common finding at autopsy. I--I know that from a variety of different causes of death. So it is relatively common. When it occurred, again, is sort of up in the air, I suppose, but it certainly is a common finding from a variety of different causes, including different causes of--death due to drug overdose.

Q Do you recall Dr. Zivot's testimony yesterday about autopsies of inmates who died by lethal injection?

A Yes.

Q And do you recall him testifying that in his opinion pulmonary edema had been detected in many of those autopsies?

A Yes, I recall that.

Q In your view, if pulmonary edema is detected in an autopsy of someone who dies by lethal injection, does that mean that the pulmonary edema happened before that?

A In my opinion, no, it doesn't mean it happen--necessarily, it happened before death.

Q You're saying it's possible, but is it--is it guaranteed?

A I'm sorry. Guarantee of what?

Q Is it correct it's your opinion that it's possible that the edema occurs before death, but there's no conclusive evidence of that?

A In--in this setting, that is correct. In the execution setting, I don't think there's--you don't know for sure. I do cite some animal studies that suggest why it occurs after death, but in these executions autopsies, you know, we just don't know.

Q In your opinion, does pulmonary edema require a beating heart?

A In my opinion, no. No, again, based on the--the work that I cited. There's no doubt that--that in a clinical setting people with heart failure can get pulmonary edema and that you can get pulmonary edema in the--perhaps in the last--you know, very close to death. But, you know, basically, it's--you know, you don't--if--if it happens after death, then, obviously, you don't need a beating heart for that then to occur, to get the edema and the congestion that had been found at the--in those autopsies.

Q And--and do these studies that you cite in your report show that pulmonary edema can, in fact, happen after death?

A In--in the human studies that I cited there, they--they found that there was fluid accumulation over time in--in some of these patients, and then there were animal studies that are very, I think, instructive in terms of pulmonary edema occurring or--lung congestion occurring after death, especially related to pentobarbital.

Q Sure. So in light of those studies, does pulmonary edema require respiration; that is, breathing?

A No.

Q Now, on page 12 of your report you discuss a procedure called "whole lung lavage." Can you explain why you mention that procedure?

A Well, first off, as I say there, I have experience in that. When I was at UC Davis, I--I took care of patients who were having that procedure, and it's basically accumulation of protein buildup, essentially, or something similar to that, in the lungs, and people just get progressively shorter and shorter of breath, and what you do, essentially, is that you--you rinse out the lungs. Right.

We've all taken a dirty glass of water or a dirty glass and we put water into it and we shake it around and

dump--dump the water out. Get some of that dirt out, and you do it again and again. It's, essentially, what we're doing in this procedure.

Obviously, you have to have special tubes in place so that what we do is we put water or--or saline into one lung while we're using the other lung for breathing for the patient, and then we switch it. When we're done with one lung, we actually switch it, and we pour the saline into the other--the second lung, and that--you keep on doing that, and eventually, you're able to get--you drain the--the saline out. You're able to get all that protein out.

So that's literally pouring liquid into a lung, and these people, these patients, are anesthetized, and, you know, they--they have no--you know, there's no--they don't wake up. It's not like they're--it's so stimulating that--that they wake up. They tolerate it, but just with any typical general anesthetic. You can use almost any type of anesthetic you want. It's not so important which anesthetic you use.

It's more important about having those tubes placed properly, because, as you might expect, if you don't have that tube placed properly and you're pouring fluid into one lung, you have leakage, and now it goes into the other one, now you got problems 'cause you--you can't

ventilate the patient. So you have--that's the most important part of--of all this. The anesthetic is really not that important. Again, you can use almost anything you want.

But the point is that these patients get a typical anesthetic. They don't wake up from it. You know, they have all that fluid in their lungs. So this idea that pulmonary edema is so stimulating that it's excruciating and et cetera, et cetera, well, if you're under an anesthetic, it's not; and as I said, the pentobarbital here is such a massive overdose that they're not gonna have any problems in terms of experiencing the pulmonary edema.

So that's a very long answer to your question about why I think this type of study or this--this work or this procedure is important.

Q Sure. Thank you. Now, in the next paragraph, 25, which is on page 13, you discuss how deep is anesthesia with 5 grams of pentobarbital. Why do you discuss this depth of anesthesia? Why is this relevant here?

A Well, it--it sort of gets to what I just discussed about the lavage procedure. During general anesthesia, we actually--we--we often measure the EEG, and when there's a--a derived value, I'll just call it that, a measure called the BIS, B-I-S, and it basically gives you a number between zero and a hundred. So somebody who has a

BIS in the mid to high 90s is an awake person. Somebody who has a BIS of zero is either comatose or brain dead or something like that.

During surgery, just your typical everyday types of surgery under general anesthesia, we target the range of 40 to 60. That's the typical range. So people are having--and mind you, we don't want that value to go below 40 if we can avoid it because there's actually an association of higher risk patients if we go too deep. So we try to keep it in that range.

So people are having surgery, major surgery, with BIS values of 40 to 60. Well, as I said, the pentobarbital causes electrical silence, and that--there's a BIS of zero. So the pentobarbital is causing such profound depression that the BIS would be zero if you measured it, and so that's very deep anesthesia. So if patients can tolerate surgery with a BIS of 40 to 60, then I believe that a overdose of pentobarbital is sufficient to prevent somebody from having any experience, painful or otherwise, from pulmonary edema if it occurs before death.

Q And--and earlier you've used the phrase, "profound unconsciousness," a couple of times. Is that what you're referring to when you say, "profound unconsciousness"?

A That is correct, yes. BIS is zero. If I were to

use the BIS as a--as a marker, a BIS of zero, a BIS of 10, a BIS of 20, as you get into those progressive lower--much lower values, that would be profound, much deeper than we would want to have, clinically, at least.

Q Now, on page 15 of your report you discuss something called "medical aid in dying," or "MAID." Do some people call this "assisted suicide"?

A Yes.

Q What happens in MAID or--or assisted suicide?

A It used to be called "physician assisted suicide." It's still called that with some people, but now they--they called it "medical aid in dying," and, quite frankly, I think the main reason why they changed it is that they wanted to remove the--the word "suicide" from it because people--you know, there are a lot of negative connotations around suicide. So now you call it "medical aid in dying."

Q So what does medical aid in dying have to do with the subject before the Court today?

A So in Canada and other European countries, you can choose MAID and you can actually get these--get drugs, a drug overdose intravenously. In the United States, to my knowledge, there are--there is the capability of--the availability of MAID in--in some of the states in the United States, but it's all, I think, oral, and

administered by the patient themselves. So we don't do the IV stuff here in the United States.

But it is--it does happen in Canada, and so, basically, they get--these patients will get a massive overdose of an anesthetic, and other drugs sometimes, to--basically, to--to die, and that is very much--that's very similar to what's, essentially, occurring in the execution setting. These patients are getting a massive overdose of a anesthetic. In this case propofol, but barbiturates have been used in the past for this, and my point about this is simply that drug overdoses in general cause pulmonary edema or pulmonary edema's found and pulmonary congestion is found at autopsy with drug overdoses, and specifically, it's been found with propofol overdoses, which is used in this MAID procedure.

So the idea, the contention, or the opinion that these--that the inmate is gonna suffer and they're gonna develop pulmonary edema and suffer, that doesn't really reconcile--can't be reconciled with what's happening in the MAID procedure. If these clinicians--we're talking about hundreds of clinicians, and some of them are anesthesiologists doing this. They're physicians that are actually injecting these drugs in these patients in Canada and elsewhere, and if all those patients--if they thought that these patients were suffering, you know, with

pulmonary edema, et cetera, et cetera before they die, I can't imagine that they--they would be using this, but they're still using it.

So I use this as sort of evidence that--that there are other people in the medical profession, clearly, who don't think--if there's a pulmonary edema problem here, it's not a problem for these patients at least, and I think they're--they're thinking it's not a problem. It's--it just doesn't occur that fast or at a point at which the--the individual is still conscious.

Q Now, you reviewed the declaration of Dr. Zivot in your report; is that correct?

A Yes.

Q Do you happen to have his declaration with you? If not, we can pull it up on the screen.

A I think I can get to it.

Q Why don't we get it on the screen.

MR. AYERS: If we could pull up Dr. Zivot's April 8th addendum. I don't recall what exhibit number that is.

THE COURT: I'm not sure we made that an exhibit.

MR. AYERS: We may not have. But for reference, this is Dr. Zivot's April 8th, 2026, addendum.

THE WITNESS: I have it up here now.

MR. AYERS: Great. And if we can go to second page of that, looking especially at paragraph 7.

BY MR. AYERS:

Q Dr. Zivot states, "Pulmonary edema will begin rapidly and be present even with some level awareness--of awareness on part of the prisoner." Do you agree with Dr. Zivot's opinion?

A I do nt.

Q Why not?

A I'm sorry. Did you ask, "Why"?

Q Yes. Why not?

A Well, as I said earlier, the onset of the pulmonary edema is not gonna be during the period when the person is conscious. The drug is gonna cause unconsciousness very quickly. At doses that we have used in the past millions of times, they're gonna be unconscious. They're not gonna have pulmonary edema form at that point.

And then they get more and more of it. They become more deeply unconscious, and if pulmonary edema starts to occur, then they're just going to be profoundly unconscious, and they're not gonna be--this drug is gonna--basically, once the heart starts to failure--to fail, the drug is essentially gonna stay in the brain. It takes blood flow for the drug to leave the brain. So if you have low blood pressure, low blood flow, the drug stays there. The person could be unconscious from the sole

reason that the blood is not flowing around. Right. And we don't--we cannot maintain consciousness when blood pressure is really low and we don't have much blood flow.

So I just disagree with that about--that it was gonna begin rapidly and be present with some level of awareness, as he puts it.

Q Thank you. Next I'd like to move to some questions about thrombocytosis. Now, your report, if we can go back to that, page--think it's gonna be page 17. Page--

A Okay. Hold on.

Q Yeah. Page 16 of your report.

A Okay.

Q Now, in prepare--

A I'm there.

Q --in preparing this report, did you review Ms. Pike's medical records?

A Yes.

Q And did you observe any platelet counts in those medical records?

A I observed many. Yes, I did.

Q Have you reviewed lab results like that before in your career?

A Yes.

Q And--

A And I still do.
Q And are you able, from looking at a blood count, to tell if someone has elevated platelets?
A Yes, I am.
Q And in your review of Ms. Pike's medical records, did you see any indications that her platelet counts were problematic in any way?
A I'm sorry. What--they were what?
Q Did you see any indication that Ms. Pike's platelet counts were problematic in any way?
A Well, the diagnosis is--has been already established as essential thrombocytosis. So--and she's on--on aspirin therapy for that. So I did not see any evidence in the record about any complications associated with the thrombocytosis in terms of strokes and infarcts, et cetera, as was discussed earlier with the--Dr. Mansour. So I didn't see any evidence of that in the record.
Q And in an anesthesia setting as a clinician, would you be concerned about administering anesthesia to someone with Ms. Pike's level of platelet counts?
A No.
Q Why not?
A Not at all. There--as far as anesthetic management is concerned, I wouldn't be concerned. Obviously, there's gonna be some increased risk in the

post-op--post-operative period for someone like--with--like blood disorders. It's still very low, but it's more of an issue around post-operatively and not something with the anesthetic management. I wouldn't treat this--someone like this any differently than anyone else in terms of the drugs that I use and--and what I use in terms of technique, with--with the exception of the fact that she's on aspirin, and because of this, we probably would not want to do what we call "regional anesthesia," which is like a spinal anesthetic or epidural and so forth.

As far as the general anesthetics are concerned, yeah, there'd be no problem at all.

Q And would you be concerned about starting an IV in a patient with Ms. Pike's lab levels?

A No.

Q Why is that?

A Well, it's--basically, it's--we have to have an IV for our procedures for the surgeries, and I wouldn't change my management in terms of starting an IV on someone like this. I guess it wouldn't--it wouldn't be something that I'd be concerned about.

Q I'd like to go back, if we could, to that same addendum to Dr. Zivot's report dated April 8th.

Actually, I'm sorry, this is the one dated January 6th from Dr. Zivot, and this is gonna be paragraph

10. Do you see that in front of you?

A I see that there, yes.

Q Now, Dr. Zivot--just want to make sure I characterize this correctly.

He states, "In the case of Ms. Pike, her predisposition to possible abnormal clotting would very likely produce an even more severe pattern of bloody froth in the lungs."

Do you agree with that conclusion?

A No, I do not.

Q Why not?

A Well, I--I don't think that the--the fact that the--her risk of thrombosis and a bleeding is--is relatively low because of the--of her disease is well-treated. I just don't--I don't see that as being an issue that--that somehow she's gonna develop pulmonary edema and that it's gonna be made worse by the thrombocytosis, by the platelets.

So I just don't--I don't see that as being an issue here, and even if it was, as I said, the pentobarbital's gonna cause her to be unconscious very quickly. But, nonetheless, I just don't see that as being an issue that--that somehow her thrombocytosis is gonna cause her to have exaggerated bleeding, basically, in her lungs as a result of all this.

MR. AYERS: Those are all my questions for now. Thank you, Dr. Antognini.

THE WITNESS: You bet. Thank you.

CROSS-EXAMINATION

BY MR. IHNEN:

Q Good afternoon, Dr. Anini (phonetic). How are you--Antognini. I'm sorry.

A Good.

Q I guess it's probably--

A Good.

Q It's afternoon where you are, isn't it?

A Yes, it is. It's about 2:30--2:22, yeah.

Q Dr. Antognini, you don't currently practice medicine; is that correct?

A I do practice medicine. I--I do clinical research, and I have to be a licensed physician to do that. So I do absolutely practice medicine. I'm not doing anesthesia anymore, but I do practice medicine.

Q When was the last time you treated a patient?

A Well, basically, I do it on a weekly basis. Now, I--in a clinical research setting, I--I'm not permitted, really, to--to treat patients, per se. But I diagnose and I--and I tell patients in the clinical research setting, "Hey, you got a problem with this. You need to go see your--your--your primary care doctor about that." But

there are pretty strict rules around actually providing diagnoses and treatments in the clinical research study. But I--you have to be a licensed physician to do clinical research, and you have to take care of patients, and you have to be able to refer the--subject, I should say. You have to be able to refer them to medical care if they have a problem. So I consider that to be practicing medicine.

Q And it looks like, and you've disclosed this in your declaration, but in the last four years, you've testified or provided expert opinions in cases in Oklahoma; is that correct?

A Yes.

Q Tennessee?

A I'm sorry. What?

Q Tennessee. That one's obvious.

A Yeah.

Q Georgia?

A Yes.

Q Alabama?

A Yes.

Q And Louisiana?

A Yes.

Q Is it true you've also testified or provided opinions in cases in South Carolina?

A I don't think I testified in South Carolina. I

was deposed, as I recall. I was consulted, and I did submit a report to them, but I was never deposed there. I don't think I testified in that case. So I'm not sure if that, you know, counts in terms of what you want. These are just cases where I was either deposed or I--I testified.

Q Sure. What about South Dakota?

A I did do that. I--I apologize to the people of North Dakota and South Dakota. I think it was South Dakota. It might have been North Dakota. But I--I don't think I testified there. I did submit a report, as I recall, on there.

Q What about Arkansas?

A Yes.

Q Ohio?

A Yes.

Q Missouri?

A Yes.

Q Florida?

A Florida?

Q Yes, sir.

A Yes. I have been engaged with attorneys in Florida and had submitted a report, but I have not testified or been deposed yet in those cases.

Q And all of those cases involved different methods

of execution; is that correct?

A Yes.

THE COURT: Well, wait a second. That's a large number of cases, and we don't have that many methods of execution.

MR. IHNEN: I'm getting to that, your Honor.

THE COURT: Okay.

Q So you've testified in cases involving pentobarbital, correct?

A Yes.

Q Nitrogen hypoxia?

A Yes.

Q Three-drug midazolam protocols?

A Yes.

Q And then Florida's protocol, which is a--also a three-drug protocol; is that correct?

A Yes.

Q Okay. You've--you cited over 200 hundred articles, I think, in your CV. Does that sound right?

A All combined in terms of book chapters and abstracts and, you know, peer-reviewed publications, yeah. Right.

Q Have you written any publications about pentobarbital specifically?

A Not pentobarbital. Thiopental I studied, but not

pentobarbital.

Q In each of those cases that we discussed, you testified on behalf of a state department of corrections; is that correct?

A Yes. And some of those, it might have been the state entity, I'm not sure. But, yeah, it was for the State, either for the department of corrections or for the State.

Q That's fair. Have you ever declined to take a case because of a state's chosen method of execution?

A I was consulted with Nevada, and I ended up not working with them, not so much because I didn't--the method. I just--it was a point in my--my life, I guess. I was, I guess, taking a break. I don't remember the exact reason, but I--I declined to--to--to--to engage with them. I mean, I did talk to them and--and so forth. I don't remember exactly if I even did a report for them, but not--pretty sure it was Nevada. I'm trying to think if there's another state that I might have declined. I don't recall off the top of my head.

Q Have you ever opined or testified that a state's method of execution should not be implemented for some medical reason?

A Not on behalf of a state. As you probably know, sometimes alternatives are the firing squad, and I have

provided opinions about what I think happens with a firing squad. But I don't think I've ever had a--yeah, I--I--yeah, I--I think that's basically as closest I ever came.

Q Are you familiar the Federal Bureau of Prisons--did you also testify in the Federal Bureau of Prions in a federal challenge to the pentobarbital protocol?

A Yes.

Q And are you aware of the U.S. DOJ review of federal execution protocol regarding pentobarbital?

A Well, the one that was issued in January 2025, I am familiar with that. That's the one that was withdrawn after the change of administration. But I am familiar with that. My name is mentioned there, along with the name of other people. But, yes, I am familiar with it.

Q Including Dr. Zivot; is that correct?

A Yes, I think so.

Q And doctor--

A I--I don't remember if he's mentioned, but I think he is, yes.

Q And Dr. Van Norman?

A Yeah.

Q And would it be fair to say that that report characterized the testimony of Dr. Zivot and Dr. Van Norman as more favorable than yours?

A I think that would be fair.
Q And Dr. Lubarsky was also mentioned in that report; is that correct?
A I--I--I don't remember if his name came up, but it's quite possible.
Q Are you familiar with Dr. Lubarsky?
THE COURT: Excuse--excuse me, sir. Would you spell that for my court reporter.
MR. IHNEN: Lubarsky is L-U-B-A-R-S-K-Y.
THE COURT: Thank you.
BY MR. IHNEN:
Q And--
A Yes, I am familiar with Dr. Lubarsky. As you might--may or may not know, for a while, he was the--I guess would be an executive vice chancellor at UC Davis for Health--sure his exact title, but, basically, yeah, he was at UC Davis for a little bit.
Q And you both testified in the Ohio lethal injection case; is that correct?
A Yes.
Q And would it be a fair characterization to say that the judge in that case said that your opinion was shown to be an outlier in the field of anesthesiology?
A I do recall the judge making that type of statement in his decision, yes. Judge Merz, yes.

Q And do you recall last year, a federal judge in the Louisiana litigation said that your opinions were untested scientific hypotheses?

A I recall that as well, yes.

Q The articles in your CV that talk about thiopental, there was about seven, does that sound right?

A I--I'm sorry. I don't really recall the number. I have no reason to dispute what you say.

Q My understanding about those articles was that they talk about, primarily, immobilization of the spinal court; does that sound correct?

A Yes. Well, the--the thrust of my research over the years was basically that the spinal cord is a site of anesthetic action.

Q Did any of those articles talk about consciousness?

A No.

Q Does your--do your opinions on pentobarbital come largely from your clinical practice?

A Yes. But also the review of the literature that I've cited in my report.

Q And I believe the judge here has called those "book reports." Does that sound right?

A Well, I--with all due respect to--to the Court, I do agree, I think, with some of other fellow expert

witnesses that, you know, we--we arrive at our opinions based on a review of the literature that--that--that we are able to interpret and apply to the conclusions that we draw, and so I don't--I would not consider what I've written here as a book report.

I mean, these are drugs or classes of drugs and clinical scenarios that--that I am familiar with, very, very much familiar with, and I use references to support my opinions. So I think that's--that's--that's very important. I think in order to--to provide some level of quality, I guess, to--to my opinions and to my reports, I--I--I've always referenced my opinions for--for a variety of things. I--I--maybe not all opinions, but certainly in my--my academic writing. You have to--to reference things. You just can't say, you know, such and such, and then just leave it at that. So, yeah, I do use references of papers that I didn't participate in. That's expected. So I don't--I don't see that as being an issue.

Q Would you say that--would you testify that literature views are fairly common practice in the field of medicine?

A Yes.

Q I believe you testified earlier that you could perform surgical anesthesia with pentobarbital alone; is that correct?

A Yes, you could. I base that on, primarily, the use of thiopental back in the old--way before I was born. I'm not sure it's been used with pentobarbital, but, again, they're (indiscernible), but you--you can do that, yes. And certainly animals. You can do it--people, in animal research who anesthetize animals. You can do surgery on animals just using pentobarbital.

Q Do you know when the last time you administered pentobarbital to a patient was?

A Probably over 25 years ago is my guess. It's not commonly used anymore.

Q And we talked about literature reviews a second ago. Would you agree with me that a--that medical science is constantly advancing?

A Yes. Sometimes we've taken a step back, but in general, we're moving forward, yes.

Q Would you also agree with me that a study from 10 years ago might be outdated compared to a study from one year ago?

A It's possible, but not necessarily so. But certainly possible. There--there are a lot of studies that are--that are classic studies that will stand the test of time. So it kind of depends.

Q Okay. Can we pull up your declaration? I think you have one in front of you, but we're going to put it up

on the screen here also--

A Sure.

Q --Doctor. And I'm looking at page 5, and there's a footnote here, footnote 2. Do you see that?

A Yes.

Q And that says, "Unconsciousness depends on the speed with which the drug is administered and when the clock starts." Is that a fair reading?

A Yes.

Q Okay. Does that clock that you're mentioning, does that factor in things like extravasation?

A No. So I want to be very clear, like I think the other experts have been, in order for these drugs to work in the intended way that they need to work, they have to be injected or administered through a functioning IV. These issues around extravasation and so forth, absolutely, I--in fact, with Dr. Goldstein, who had talked about, you know, it's gonna be slower onset, extravasation, et cetera. You may not get the intended--but I absolutely agree with that. If you have an IV come out and you have an extravasation of a drug, it is not gonna work in the way that it's intended to work. So there's no question about that.

Q Would that include clotting at the IV site?

A It could.

Q I believe you testified, and I'm--I'm looking at

paragraph 8 here, and correct me if I'm wrong, you testified that these individuals become unconscious pretty quickly, when you were talking about paragraph 8. Does that sound like your testimony?

A Yes, that is correct. I'm not sure that--yes, it is. Yeah, paragraph 8. Yes, that's where I do talk about--at least one place where I talk about the onset. Yes.

Q And then you've cited this Dundee's article, right?

A Yes.

Q And what were the subjects in that article?

A Those were surgical patients. So, obviously, I don't study. But surgical patients that were going to be getting surgery, and they were given, basically, induction drug here, including pentobarbital.

Q Sorry, Doctor.

Do you know what doses you've used when you prescribe pentobarbital?

A For the induction of anesthesia, it would be basically the same as thiopental, which is gonna be in the range of 300--300 to 500 milligrams, or around 3 to 5 milligrams per kilogram. That's--they're sort of equivalent in terms of--of that. Dr. Van Norman and I agree on that, in terms of pentobarbital and thiopental.

They're basically very similar.

Q Can you--we talked a little bit yesterday, and I know you--you heard that testimony, with Dr. Van Norman and Dr. Zivot about the process of anesthesia. There's induction, maintenance, and then a post-operative period. Is that correct?

A Yes. Induction, maintenance, and then emergence.

Q Emergence. Okay.

Do you often just give one drug in the anesthesia process?

A No. We give a lot of different drugs.

Q Have you ever given a patient one drug for anesthesia?

A Yes.

Q Would that be thiopental?

A No. Well--well, hold on just a moment. So it is possible--you're sort of testing my memory. There are some very short procedures where we--I could have given just thiopental--something like a--what's called a "cardio version." So when we have very, very short painful procedures, you know we can give one drug. There are other situations where we would give one drug, potentially, but in general, you know, that might be one where I could have given thiopental. But that's quite a long time ago. We give it for ECT. We give barbiturates in--back in the day

for an ECT, electro-convulsant therapy.

So there are procedures where sometimes we might give one drug, but for your typical surgical procedure that's gonna go on for hour, two hours, or even 30 minutes, or whatever, yeah, we would normally not use just one drug.

Q Can we go to the last page of your declaration real quick since we have that pulled up, and I--this is the conclusion section, and I was a little confused with the wording here. So you said, this is No. 1, "The inmate would become unconscious within 20 to 30 seconds after a clinical dose of pentobarbital, about .5 grams," and I believe you--oh. I'm sorry.

(Defense conferring over document presentation.)

Q Sorry, Doctor. Do you see that now?

A I do, yes.

Q Okay. Point five grams, and I believe you testified earlier that that would be a clinical dose. Correct?

A Yes.

Q "First enters the inmate, which would be followed by respiratory arrest, cardiovascular collapse and death due to the injection of the remaining 4.5 grams of pentobarbital." Is that correct?

A Yes.

Q Is that how the Tennessee lethal injection

protocol operates?

A You mean with a clinical dose of .5 grams followed by 4.5 grams?

Q Yes.

A Okay. Well, I have to apologize. I've tried to explain this concept before, and I'm honestly--you're not the first one to be confused by that language, and so I put that failure on me. But I said earlier about the--the journey of a thousand miles begins with the first step. Well, when you give, in the protocol, the 5 grams, it's--you know, you start to inject it, and after--and let's say you're injecting it at--I'll make the math easy--50 grams--I'm sorry--50 milligrams per second.

So after the first second you've given 50 milligrams. After the second second you've given a total of a hundred, so forth. You get to the point, after about 10 seconds, you've now given 500 milligrams. At that point, you have administered--or the--the guard, whoever's doing this, has--has injected or administered a clinical dose--what I would call a clinical dose. Okay. If this was a patient, we'd stop. But it's not. It's an execution. They continue to go on.

My point is that first .5 grams, they don't stop there. They continue. But my point is that that first .5 grams has now entered the inmate and it's going to produce

the unconsciousness that I talked about earlier. That's what I'm trying to say there.

Q So what's the clinical dose in the Tennessee lethal injection protocol? I think I'm more confused now.

A Well, yeah, I'm sorry. Again, maybe what I shouldn't be saying is the clinical dose. There isn't a clinical--it's not being administered for a clinical reason. So I'm just using that colloquially, basically, to say, if this was a patient and you gave 500 milligrams, or .5 grams, that would be the clinical dose. But in this setting you're gonna--you're gonna continue on.

I would just say there's no question that I have some work to do to try to get this concept through, because, you're not the first one to be a little bit confused about my language there. So I've written many things over my life and I even consider myself to be a pretty good writer, but I have obviously failed to get my idea across on that one.

Q Okay. Paragraph 9 of your declaration, and this is page--page 6, and we talked about this Aleman study--Aleman; is that correct?

A I think so, yes.

Q I pronounced Dr. Mansour's name wrong all morning. So I'm gonna try to do better.

And I--this is an animal study, correct?

A Yes.
Q Okay. And I believe you already testified that--
(Defense conferring over document presentation.)
MR. IHNEN: And that's A-L-E-M-A-N. Sorry.
Q And my understanding of the study, that there's two groups of horses; is that correct?
A I'd have to review that. Thought there's more than two groups in that particular study. I thought there was four groups--
Q That's actually the Buhl--
A --or three--
Q We'll get to that one.
A Okay. Well, in the Aleman study, I think there was a group that had IV sedation beforehand and a group that had IV anesthesia and so forth--well, we can take a look at it.
Q So my understanding, that one group got a drug called xylazine; is that--did I pronounce that right?
A Yes, that's correct.
Q X-Y-L-A-Z-I-N-E. Is that a sedative?
A Yes. It's used in veterinary medicine for that purpose.
Q Okay. And the group that got the sedative also got ketamine. Does that sound right?
A There was a separate group, I think--I think one

group got xylazine, another group got xylazine plus ketamine.

Q And what is ketamine used for in anesthesia? Did--what is ketamine used for in anesthesia?

A Oh, I'm sorry. I didn't hear the question. It is used for different reasons. It can be used as an induction drug, basically. So you can produce anesthesia with it. It's got a lot of analgesic properties to it. So it's very good at relieving pain. It's now being used for--treat depression at a very low dose. But it's used for that purpose as well.

Q And then my understanding of the study is that another group, and this might be the group you were referring to, got an inhaled anesthetic plus xylazine and ketamine. Does that sound right?

A Yes, that's correct.

Q Okay. And then both groups, and I believe you testified that both groups got pentobarbital--one group got nothing but pentobarbital. Is that what you testified to?

A Not in this study. It was in the Buhl study, I think, that that happened, and also the dog study, the Evans study, where there was a group--two groups in the Buhl study and then one group in the Evans study that got pentobarbital by itself.

Q Okay.

A Alone.
Q So both groups got a combination of pentobarbital and phenytoin; is that correct? I'm sure I pronounced that wrong.
A And what study are you referring to?
Q This is Aleman.
A I don't recall--I'm sorry. Did you say that they also received phenytoin?
Q Pentobarbital and phenytoin, is my understanding.
A I don't recall that, but that's certainly possible.
Q Okay. And that's P-H-E-N-Y-T-O-I-N.
(Defense conferring over document presentation.)
Q And I'm looking at the paragraph that starts with "In conclusion." Do you see that there?
A I do.
Q Okay. Can you read what that next sentence says, starting with, "Rapid administration."
A Yes. "Rapid administration of an intravenous overdose of pentobarbital sodium solution might decrease the time to asystole after infusion."
Q And I think you knew what I was gonna ask because you emphasized "might." Is that correct?
A Yes.
Q Okay. And asystole is just--that's basically

flat-lining, right?

A That means the heart has lost its electrical activity and flat-line--that is correct.

Q Okay. And so the conclusion from this study was that this intravenous overdose of pentobarbital might have caused that flat-lining, correct?

A It would--they're saying the rapid administration would decrease the time to asystole, make it less time--it would happen faster.

Q Might decrease the time?

A That's correct. Decrease the time to--to asystole.

Q Well, it says, "might decrease the time," right?

A "Might," yes.

Q Okay. And then a couple of sentences down, starting with, "This might," can you read what that says?

A Yes. "This might support lack of conscious perception while brain death is happening."

Q Okay. And if we go back to paragraph 9 of your declaration, you say, "These actions of pentobarbital are consistent with the Aleman study." And by, "these actions," I take to mean your opinion in the preceding paragraph. Is that correct?

A Yes.

Q And that's where you say that "pentobarbital

causes unconsciousness in 20 to 30 seconds, on average." Is that an accurate reading--

A Yes.

Q --opinion?

A Yes.

Q Where does it say that in the Aleman study?

A I'm sorry. Did you say, "Where does it say that?"

Q Yes. Or how does the Aleman study support that opinion?

A I'm sorry. Can you refer me to the opinion that I wrote here, and your question is, "How does the Aleman study support that?" Which one are you talking about?

Q Sure. I'm looking at paragraph 9, the first sentence. Okay.

A Yes.

Q "These actions of pentobarbital are consistent with data published by Aleman et al." Okay. And then if you go up--go up one more page, and "by these actions of pentobarbital," I take that to mean this section in paragraph 8. Is that a fair reading?

A Yes. The--the animal data that I cite including the Aleman study are consistent with what occurs with pentobarbital given to humans.

Q And the Aleman study said that it might

cause--let me read that--let me read that right--"might decrease the time to asystole and might support lack of consciousness." Is that what the Aleman study says?

A That is a--my opinion, a rather offhanded loose conclusion in their paper that I don't agree with. So that's just sort of speculation on their part. I don't see that supported by the data that they--they publish, but that's what they wrote.

Q And you cited it in your declaration, correct?

A Yes, I did.

Q Okay. The--

MR. IHNEN: Can you pull up the Buhl study.

Q The next study, the Buhl study, which I think we've talked about a little bit, and this is an even older study, correct?

A Twelve years ago or 13 years ago is when it was published.

Q And this study, to my understanding, is that there's four groups of horses: Two that were given sedation and then pentobarbital, and two that were just given pentobarbital. Does that sound right?

A That's about right, I think. Yes, that's correct.

Q And you cited this study in paragraph 10 of your declaration.

MR. IHNEN: Can we go back to the declaration.

Q Okay. And I think that you cited this study to support your opinion that the onset of unconsciousness was about 27 seconds. Is that why you cited that study?

A Yes.

Q Okay. And you say here that collapse was considered to be the onset of unconsciousness; is that correct?

A Yes.

Q Okay. Can you please point me in the Buhl study where they equate collapse with unconsciousness?

A I would have to look at the study. If I may pull it up on my computer and I search for that word.

Q That'd be great.

A Okay. All right...

THE COURT: You want me to take a recess while you look for it?

THE WITNESS: I--I'm done.

A So the author in the study looked at collapse, time to collapse. Then he did not specifically say that that was part of their (indiscernible) unconsciousness, but they do talk about, I believe, another study, again, I may be confusing one to the other, that is considered to be sort of the onset of the clinical signs of death in this setting. So I take that as being, basically, the onset of

a--similar to the onset of unconsciousness and--as they do, at least--I may be, again, in the Buhl study. So that--that's the basis for my opinion.

Q So when you say the horse--"when the horses went from standing to falling to the ground, in which is considered to be the onset of unconsciousness," that's your opinion based on the study?

A That is, I think, in the Buhl study, as I said, or maybe again, where they equate the collapse to--to unconsciousness, yes.

Q But in your--

A I'm sorry. I don't find--

Q I'm sorry. Go ahead and finish--

A Go ahead. No, I--at this point I'm not finding it, but I believe that that--that was in the basis of my opinion.

Q Okay.

(Defense conferring over document presentation.)

Q Okay. And then I'm looking at the last paragraph on the right column of this article starting with, "It is impossible." Can you see that?

A Yes.

Q And can you read what that says?

A "It is impossible to know whether the horses were able to register pain or distress from the commencement of

the pentobarbital injection until cardiac death occurred up to 15 minutes later."

MR. IHNEN: Okay. And then can you flip to the conclusion section.

(Defense conferring over document presentation.)

Q And then do you see in the conclusion where it says, "High dose pentobarbital combined with sedation resulted in faster cardiac death and is, therefore, preferable when euthanizing horses." Is that correct?

A Yes.

Q Okay. And then this is the second to last sentence, "However, as horses should be deeply anesthestized during the procedure, it is unlikely that they do experience pain." Did I read that correctly?

A Yes. You did, yes.

Q Okay. And the Tennessee lethal injection protocol does not use sedation prior to a high dose of pentobarbital; is that correct?

A That is correct.

Q Okay. Looking back at your declaration, the Evans study--and this is a study from 1993; is that correct?

A Yes.

Q And this one deals with dogs? Does that sound right?

A That is correct, yes.

Q Okay. And just quickly, Doctor, would you agree with me that none of these studies was conducted with the intent to ever be used on humans?

A That is--yes, that is correct. These were--yes, that's correct.

Q And, in fact, the goals of these studies were conducted with the goal of humane euthanasia; is that correct?

A I don't know what term that they use, but in the veterinary setting, yes, they wanted (indiscernible) as humanely as possible, or whatever that term means.

Q And so my understanding of this study is that there's groups of dogs, some were given pentobarbital only; is that correct?

A Yes.

Q And then others were given pentobarbital plus a lidocaine solution of either one, two, or three percent. Does that sound right?

A That is correct.

Q Okay. And you say here in your declaration, paragraph 11, "I guess the good news is all of the dogs died." Correct?

A Yes.

Q Okay.

(Defense conferring over document presentation.)

Q Okay. I'm looking at the second full paragraph there starting with "One of." Do you see that, Doctor?

A Yes, I do.

Q Okay. Can you read what that sentence says?

A "One of the undesirable results of euthanasia with pentobarbital alone is the occurrence of terminal gasps several seconds to minutes after the onset of apnea."

Q And so would you agree with me, Doctor, that we--that we have--it's been known since 1993 that a lethal dose of pentobarbital alone would lead to gasps lasting several seconds to minutes?

A We've known that since 1993. I suspect it's been known before that because, again, you know, euthanasia of dogs and other animals, we see it--you know, that's seen. So that's not probably new news.

Q Okay.

MR. IHNEN: And, Patty, can we go back to the declaration, please, page 6.

Q Okay. In your last--second to last sentence in paragraph 9 says, "Before becoming unconscious, the individual would not feel the sensations of pain, suffocation, or air hunger." Is that what your declaration says?

A Yes.

Q Okay. Are terminal gasps several seconds to minutes after the onset of apnea not suffocation or air hunger?

A They are absolutely not, no. They are--what happens with pentobarbital and--and so forth is that you get this profound depression of the brain and respiratory centers and so forth, but you do get occasional firing of those--those respiratory centers to produce that gasping. That is in no way an indication of any type of suffering or any pain or anything like that or air hunger or anything of that nature.

So that doesn't--that doesn't--you know, that's not something that I'm concerned about in terms of--in this setting, at least. It may not be pleasant for people to look at. It's not pleasant for--for animal owners to see and so forth, but that's just--that happens. It happens with a lot of other causes of death. So it just--I don't think that's an issue, in my opinion, as far as suffering of the inmate is concerned.

Q Okay. There's--can you go back to that study. This is the Evans study. There's one other sentence in here that I thought was interesting, and this is in the last full paragraph starting with, "The lack of signs of pain," and there's a sentence in here--this is the second full sentence in that paragraph, "Signs of pain associated

with IV and accidental subcutaneous injection of euthanasia solutions have been reported." Is that what that says?

A Yeah. Yes.

Q Okay. So the Aleman study concludes that pentobarbital might support lack of consciousness; is that correct?

A It's not "might." It does. It produces unconsciousness, but okay, I guess you can--you can say, "might."

Q Well, does the Aleman study say that it might? We can go back to it.

A You said, "might support unconsciousness." It produces unconsciousness.

Q Can we go back to the--

A Pentobarbital.

THE COURT: You might want to rephrase.

MR. AYERS: Your Honor, this has been asked and answered.

MR. IHNEN: Your Honor--

MR. AYERS: The study says what it says.

THE COURT: I'm gonna allow them to continue. It's cross-examination.

MR. IHNEN: Okay.

THE COURT: But you might want to rephrase the question. I'm not sure you--

MR. IHNEN: Okay.

THE COURT: --phrased it so that he understood.

I think you said "It might support unconsciousness."

MR. IHNEN: Yeah. I'll rephrase it, your Honor.

THE COURT: Yeah.

BY MR. IHNEN:

Q Dr. Antognini, does the Aleman study say, "This might support lack of conscious perception while brain death is happening"?

A I'm trying to understand what they--let me read that--'cause it says, "this." I want to make sure I understand what they--what they mean by "this."

Yeah. So, basically, they refer to the cerebral cortical activity. They're saying, "Cerebral cortical activity," or as I said, "EEG silence," similar thing, "becomes undetectable before the end or shortly after the end of an infusion. This might support lack of conscious perception while brain death is happening."

So, basically, they're saying, you got flat line, basically no activity, undetectable, that's gonna support the conscious perception--I'm sorry--gonna support or produce the lack of conscious perception.

Q So there's brain activity for less than a minute, correct? Brain activity ceases after less than a minute.

Is that a fair reading?

A That--that's what they say, yes.

Q Okay. And then the next sentence says, "This might support lack of conscious perception while brain death is happening." And then the Buhl study you read the--the sentence that says, "It is impossible to know whether the horses were able to register pain or distress from the commencement of the pentobarbital injection." Do you remember that sentence?

A I do.

Q Okay. And we just talked about the data study. So then we come to paragraph 12--or the Evans study. I'm sorry. Then we come to paragraph 12 of your declaration.

MR. IHNEN: Can you go back to that. Sorry.

Q Okay. "These studies cited above collectively lead to the conclusion that intravenous pentobarbital administered at 5 grams would cause a rapid onset of unconsciousness, followed by coma, respiratory arrest, circulatory collapse, and death." Is that what your declaration says?

A Yes.

Q And then you cite Aleman, Buhl, and Evans, and you say, "These studies cited above." Is that correct?

A Yes.

Q Okay. Can you explain how you formed that

opinion based on these studies?

A Well, the onset of the various end points, the EEG silence, the collapse, they--they didn't measure all the same things. The--when the EEG--when asystole occurs, and so forth, they're all occurring in a--in a vary similar sort of time frame. It's not like in one study the animals basically became unconscious and died in a few minutes and the other study they--they basically were awake for two hours and then died. It's all very consistent. Again, different methodologies. Two different species. Different drug doses. Different, sometimes, drugs given in some of those groups.

But the data, in my opinion, much more consistent than they are not consistent in terms of how pentobarbital acts.

Q Okay. Next paragraph of your declaration. This is paragraph 13. "Thiopental and pentobarbital are equipotent--or equipotent." Is that what your declaration says?

A Yes.

Q Okay. And then you've cited this Barron and Dundee article. Does that look right?

A Yes.

MR. IHNEN: Okay. Can we pull that article up?

Q And this looks like an article from 1961; is that

correct?

A Yes.

Q Okay. Can you read the title of this article?

A "The Recently Introduced Rapidly Acting Barbiturates. A review and critical appraisal in relation to thiopentone."

Q And so is this--I take this to mean, this is around the time that pentobarbital was introduced. Is that correct?

A No. I think pentobarbital actually was introduced decades before that. So I--the use of the word "recently," I think refers to some other rapidly-acting barbiturates, not--I think pentobarbital and thiopental, which were, I think around for probably maybe three decades or so. So I guess it depends on your--your definition of rapidly--I'm sorry--of recently.

Q Okay. And you cite this article for the proposition that thiopental and pentobarbital are equal potent. Where does it say that in this article?

A If you go down to the table that they have, which is gonna be maybe on the next page--no. Next page.

There we go. So Table 1, group 1, the first drug there is pentobarbitone, which is the English name for pentobarbital. And then to the far right it says, "Approximate induction potency compared with

thiopentone--thiopentone," which is thiopental, "has a potency of one--1.0." What that means, essentially, is that they're equipotent.

So, for example, the next one down, amylobarbitone, has a potency of .5, which means it's half as potent compared to thiopentone, and so forth. That's where that comes from.

MR. IHNEN: Can you go to the page right before this. Can you blow that up one...

Q Okay. I'm looking at the--the first column on the right. There's a number 2 right next to it.

A Yes.

Q There's a--that says, "in the case." Do you see that?

(Defense conferring over document presentation.)

Q It looks like it's the third sentence, "In the case of pentobarbitone."

A I'm sorry. Which column are you on?

Q Sorry. I'm--I'm looking at column--

A Oh, yes. I see it. Thank you. Yes.

Q "In the case of pentobarbitone and thiopentone, the onset of anaesthesia with the latter drug is more rapid and equilibration with brain tissue occurs more quickly."

Is that what that article says?

A Yeah.

Q Does that mean that their equipotent?

A That doesn't really refer to potency to the onset. That has to do with other characteristics of the drugs, not necessarily their--their potency. I know it's maybe a little bit of a subtle concept, but thiopentone does act more quickly than pentobarbital. But we know that pentobarbital acts within 15, 20, 30 seconds in another study that I cited. So, yeah, there are some differences between thiopental and pentobarbital, but the--the rapid--rapidity there is not--it's not like we're talking about minutes. We're talking about a few seconds, probably.

(Defense conferring over document presentation.)

THE WITNESS: And, by the way, you know that Dr. Van Norman, your own expert, has said, essentially, not here, but elsewhere that--

Q Doctor--Doctor, I'll ask the questions. Okay.

A Okay. All right. I just--

MR. IHNEN: Page 84, please. It's two pages down.

Q Okay. And I'm looking at the last sentence of that first paragraph starting with "Since all workers." Do you see that?

A Yes.

Q Okay. Does it say, "Since all workers are not

unanimous in their opinions on this subject, most of the values quoted are based on the authors' own experiences with the drugs." Is that what that says?

A Yeah. That's what it says.

Q Okay.

MR. IHNEN: Can we go back to his declaration.

Q Okay. Paragraph 14, this is your declaration, is it a fair characterization to say that your opinion here is that because pentobarbital is infused faster and at a greater dose, the effects of the drugs would be greater than thiopental over a 10- to 15-minute infusion?

Is that what you're trying to say here?

A I'm sorry. Could you repeat your question?

Q Because pentobarbital is infused faster and at a greater dose, the effects of the drugs would be greater than thiopental injected over a 10- to 15-minute infusion.

Is that what the--this (inaudible) says?

A That is my opinion, yes.

Q And that's an inference you're making, correct?

A Well, there are--I can't recall if I cited studies, but I think--again, I know--I know the rapidity of injection plays a role, but I don't remember if I cited any of those studies--up--up to a point.

Q And then the second part of this paragraph on page--paragraph 14, is it a fair characterization to say

that based on Ms. Pike's weight, your estimating that brain activity would cease within 60 seconds?

A Yes. EEG silence would occur within 60 seconds after the initiation of the infusion, if it's given at the rate that I understand that it's normally given at.

Q And then you cite the Aleman study again, correct?

A That is correct. I--I do say that, yes.

Q Okay. And we've already talked about that study, how it qualifies its findings. And none of the horses in that study got a dose of just pentobarbital; is that correct?

A No--yes, that is correct. They did not get--none of the animals got just pentobarbital.

MR. IHNEN: Okay. Can you go to the next page of his declaration.

Q Okay. Paragraph 15 here. "Intravenous administration of 5 grams of pentobarbital would cause profound brain depression and unconsciousness well before any lung congestion and pulmonary edema forms."

Is that what your declaration says?

A Yes.

Q Okay. And you don't have any citation here for this. Is this just your opinion?

A As I said earlier, we've used these drugs for

decades or in the past and nobody had pulmonary edema with the clinical dose. So, yeah, it produces unconsciousness before the chance that any pulmonary edema could occur. I mean, this would be a very difficult study to do to know for sure, but, yeah, that is my opinion.

Q Okay. Next paragraph. No citation here. This is, again, just your opinion?

A I don't cite anything there, no.

Q Okay.

A So that's my opinion based on my review of the--of everything, and so--no, no citations.

Q And so in order for your opinion in paragraph 16 to be correct, your theory about the onset of unconsciousness must also be true. Is that correct?

A Yes, I would say that's true.

Q Paragraph 17, I believe you did testify that you do cite to some human studies, and this is one--

(Defense conferring over document presentation.)

Q And this is a study from Japan; is that correct?

A Yes.

Q And do you recall why they were using postmortem computed tomography in Japan for the study?

A They were interested in looking at the development of postmortem changes in a variety of different organs. In this one in particular it was lungs, but there

is a glowing interest in doing basically imaging studies in lieu of autopsies. So this is just one of the studies that--it sort of started this field going.

Q So they were--they were conducting the study because there's a growing interest of using PMC technology in lieu of autopsies; is that correct?

A I think that's the basis of it, yes.

(Defense conferring over document presentation.)

Q Doctor, can you read the--the first--the second sentence in this--in the introduction here starting with "However."

A I--I'm looking--

Q I'm sorry, Doctor. I'm sorry, Doctor. Hold on.

(Defense conferring over document presentation.)

Q Starting right there.

A Yes. "However"--you want me to read that?

Q Yes, please.

A "However, as the medical examiner system is not widely available within Japan, approximately 80 percent of major hospitals with emergency medicine facilities perform postmortem computed tomography soon after the confirmation of death is made by a medical doctor to detect the death cause for patients brought into the--in the hospital in a state of cardiopulmonary arrest on arrival."

Q So the point of this study was because they don't

have medical examiners in Japan. Is that--is that a fair reading?

A Well, that's just one reason why they're trying to develop this--this technology or this--this approach, yeah. I mean, it would potentially replace--I shouldn't say "replace," but allow medical examiners maybe in different parts of Japan or elsewhere to be able to look at some of these scans and then be able to make a diagnosis.

Q Okay. And this study is--it's four individuals; is that correct?

A I believe that's correct--maybe only three, I think.

Q And they--they dropped one because they couldn't get the CT studies. Is that your understanding?

A Yes.

Q Okay. And it says that each of these individuals died non-traumatically. Is that what it says?

A Yes.

Q And then I believe it goes on to say that they all died from cardiopulmonary arrest on arrival. Is that your understanding?

A Yes.

Q Okay. And so the study that you've cited here is about three individuals?

A Yes.

Q Okay. And was CPR performed on each of these people?

A I recall, yes, I think that they--when they came in, they had cardiopulmonary arrest. So they did get CPR.

Q Isn't it true, Doctor, that pulmonary edema can develop during CPR as part of post-resuscitation lung injury?

A Yes, it can.

Q So all three of these individuals had a cardiopulmonary event. They performed CPR on them, and then they looked at the--their lungs after death and there was pulmonary edema. Is that the gist of this article?

A Yes, but they also looked at the lung changes after death in terms of time factor. So that's the important finding they looked at.

Q Okay. We talked a lot about pulmonary edema. Is there a difference between flash pulmonary edema and regular pulmonary edema?

A Flash pulmonary edema is a term that describes a rapid onset of pulmonary edema, usually in the course of minutes, as opposed to just your garden variety pulmonary edema, which may take hours or days to develop or even long. They're gradually. So flash is something that's more quick, a quick--a more rapid onset.

Q And this study is your regular garden variety

pulmonary edema, correct?

A Yes.

Q And are you aware that the allegations regarding pentobarbital and lethal injection is that it causes flash pulmonary edema?

A I am aware of that, yes.

Q Okay.

MR. IHNEN: Can we go to paragraph 19 of his declaration?

Q Okay. Paragraph 19 of your declaration--why don't we scroll to the next page, since there's just once sentence there.

And here we've got another animal study; is that correct?

A Yes.

Q This is from 1950?

A Yes.

Q And I believe this one involves rabbits; is that correct?

A Yes.

Q And my understanding is that the rabbits were killed in various ways, including pentobarbital, right?

A Yes.

Q Okay. And looked like the pento--

(Defense conferring over document presentation.)

Q Okay. And so these were all the various ways that they killed the rabbits in this study: Air embolism, Nembutal--that's pentobarbital, correct?

A Yes.

Q Okay. Ether, electrocution--

A Yeah. Yes.

Q Exsanguination?

A Yes.

Q Can you describe what that is?

A Exsanguination essentially means that the blood is removed from the animal to cause death.

Q Okay. Something called a "rabbit punch." What is that?

A Basically, you hit them in the back of the head.

Q The rabbit was suspended by the hind legs and a sharp blow was administered to the back of the head with the ulnar surface of the hand. What's the ulnar surface of the hand?

A That's gonna be this part of the hand right here. It's like a chop like that.

Q Okay. And then magnesium sulfate. Is that correct?

A Yes.

Q Okay. And it looks like the pentobarbital, which this article refers to as Nembutal, was injected as rapidly

as possible through a 21 gauge needle and death occurred promptly. Is that what it says?

A Yes.

Q Okay. And it looks like to do that they tied the rabbits on their back and injected the drug right into their chest, right?

A No, they don't actually say where the injections were done. Actually doesn't say whether it was in the chest or not. If it's there, I don't see that.

Q Can you look under "procedures"?

A Yes.

Q Okay.

A Okay.

Q Does it say that they were tied down and injected in their chest in that paragraph?

A Yes, I see that.

Q Okay. Can you inject pentobarbital through a 21 gauge needle rapidly?

A Well, at the dose for a rabbit, yeah, 21 gauge is something that you can certainly use, I think, for--especially for the dose that they used here. I mean, these are small animals. So I think that's very possible.

Q Can you use a 21 gauge needle on a human?

A For the injection of pentobarbital?

MR. AYERS: This is getting way beyond what the

study is offered for. The study isn't offered for how the rabbits were killed. It's offered for the--the edema findings.

MR. IHNEN: I'll withdraw that question. We can move on.

Can you go to the next page.

Q Okay. Now, under "results"--so my understanding of the study is they killed these rabbits in these various ways; is that correct?

A Yes.

Q And then some they performed an autopsy immediately after death, and then some they performed an autopsy several hours after death. Is that correct?

A Yes, they did it over time, different groups.

Q Okay. So under "results," it says, "Immediate examination gross findings." Would this be the group that was examined immediately after death?

A Yes.

Q Okay. In the middle of the paragraph here it says, "In the group sacrificed with Nembutal." Do you see that?

A Yes.

Q "Magnesium sulfate or the rabbit punch, congestion of the lungs was more marked than in those sacrificed with air." Is that what that says?

A Yes.
Q What would congestion of the lungs be?
A That would be basically where there's blood or fluid that's in the lungs.
Q Would that be edema?
A It could be, yes.
Q Okay. Next sentence, "The lung weight to body weight ratios did not differ greatly in any of the groups examined immediately after death."
Then the next sentence, "The lowest ratios were obtained in ether and exsanguination groups."
Can you read that last sentence there?
"Several groups sacrificed."
A "Several--several groups sacrificed with Nembutal had ratios greater than 4.0."
Q Okay. And when they talk about ratios greater than 4.0, what are they talking about there?
A They're talking about the ratio of the lungs in those group compared to the--I'm sorry--the--the lung weight to the body weight, essentially. So if the lung--you know, you weigh the animal and the lungs are heavy, they're gonna be a larger percentage of--essentially, of the total body weight 'cause they have--they're swollen.
Q So the rabbits killed with pentobarbital had

bigger lungs, is that correct, immediately after death?

A That's--you know, there are different methods that they're using here. That table that I reproduced, I think is the most clear-cut evidence of what I'm talking about. So you--you're kind of--talking about different groups here, and I'm really focused only on the Nembutal group--or groups, I should say.

Q Okay. You did include a table in your study, but there's another table on the next page.

(Defense conferring over document presentation.)

Q And Dr. Antognini, this table 1 from this study, is that correct?

A Yes.

Q We've just pulled this table out just for the purposes of demonstration. Your table in your declaration--

(Defense conferring over document presentation.)

Q So you've included table 2 in your declaration, right?

A Yes.

Q And you say, "Note that lung weight increased when comparing lung weight at immediate autopsy to lung weight at one, two, three, four, and six hours after death, indicating that lungs can develop edema after death."

Is that what your declaration says?

A Yes.

Q Okay. Can we go back to table 1?

And so the group of rabbits that you cite in your study had the lung weight of 3.83 grams--that's the--that's the group from table 2. If you look at table 1, the Nembutal 100 milligram IV, there's only five rabbits with 3.83 lung weight. Do you see that there? The last group before all the dots with pentobarbital?

A Yes.

Q So table 2 is really just a subgroup of the rabbits killed with pentobarbital; is that correct?

A No. Table 2 are groups that--are separate groups from table 1. They may have included--I have to look at both tables side by side. Table--the--the animals that had Nembutal IV and had the lung weight at immediate autopsy of 3.83 were used, I believe, as the control--the immediate autopsy control for the animals in table 2. But the animals--the rest of the animals in table 2 are not in this particular table 1. So, I think--if you can go to table--table 2, it's 3.83, plus or minus .27--yeah. So, basically, what they did is they used the immediate--so let me explain how this study was conducted.

Q Please.

A In--in order to know how--whether edema is occurring over time in the setting, you have to have groups

where you basically--you do immediate autopsy, and then another group, you wait an hour and so forth, and that's because you can only do an autopsy once. You do it at one hour, you can't do it at five hours. You can only do it one time. So you have to have groups. And that's what they did here is they had a group, the immediate autopsy group, 3.83, plus or minus 2.7. That's also included in table 1. But they had these other groups where they waited one hour and two hours, and you can see that the weight of the lungs progressively increases as you delay the autopsy--or the necropsy is what it's termed here. So that's the basis of that table.

Q Can we go back to table 1.

Doctor, would you agree with me that the rabbits killed with pentobarbital through intravenous had higher lung weights on average than the rest of the groups?

MR. AYERS: Asked and answered.

MR. IHNEN: I don't think that that was asked.

THE COURT: Overrule.

THE WITNESS: And here we're talking about table 1?

Q Table 1. So at the top it says, "Immediately"--immediate autopsy, correct?

A Yes.

Q Okay. So they looked at these animals

immediately after they were killed, correct?

A Yes.

Q Now, table 2 talks about several hours after, right?

A Correct.

Q But table 1 captures the lung weights right when they were killed; is that correct?

A Well, they also captures--to the--to the right of that it says, "Autopsy after three hours." So it also captures animals that were autopsied after three hours.

Q Okay.

A So let me--let me point something out to you. You see on the--the column that says "immediate autopsy," there's some groups that have just dots across, and that's because, to my point, you can only do one autopsy. If I do an autopsy at hour one, I can't do it at hour two. You get one chance.

So you have to have separate groups. A group where you have somebody--you know, five animals that you study at one hour. Another group with five animals studied at two hours, and so forth. So what you see here where there's dots, dot, dot, those are animals that they waited three hours, and you can see with the Nembutal that they had elevated lung weights.

So, and in fact, if you look at the Nembutal 100

milligram per kilogram where it's 3.83, plus or minus .27, in a separate group that waited three hours, it was 9.47, showing that the lungs became adenitis (indiscernible) because they received Nembutal.

So that--that's how that's--table should be interpreted.

Q Okay. And the group right above them, is that "Nembutal 60 milligrams IV rapid"? Is that what it says?

A Yes.

Q What's the lung weight of that group?

A At immediate autopsy it's 4.27.

Q Okay. Is that the heaviest weight of the immediate autopsy group? Second heaviest weight?

A It is.

Q Okay.

A I'm not sure it's statistically significant compared to the other groups, but it is the heaviest one numerically, except for--I'm sorry--the bottom group, right ventricle Nembutal, where it's 4.57.

Q And you cited this study in your declaration, right?

A I did.

MR. IHNEN: I don't have anything else.

THE COURT: Redirect?

REDIRECT EXAMINATION

BY MR. AYERS:

Q Just have a couple of questions, Dr. Antognini, about that animal study you were asked so many questions about earlier. We're gonna put it back up on the screen.

If you go to the last page of that study.

You were asked a lot of questions about this final paragraph in the study, were you not?

A I was, yes.

Q And you were asked a lot of questions about the second sentence of this paragraph, were you not?

A Yes, a lot of questions, discussion around that, yes.

Q What was not read was the first sentence of that paragraph, was it?

A I don't think we did discuss that, no.

Q What does that first sentence of that last paragraph say?

A "In conclusion, an intervenous overdose of pentobarbital sodium solution is an effective, fast, and humane method of euthanasia."

MR. AYERS: That's all I have. Thank you.

MR. IHNEN: I don't have anything else.

THE COURT: I normally would have a bunch, but you took them all from me.

MR. IHNEN: Great minds think alike, your Honor.

THE COURT: Thank you. Okay, Doctor. We're through with you. Thank you for your testimony.

Lawyers, where--

THE WITNESS: Thank you so much.

(Witness was excused.)

THE COURT: Where are we?

MR. AYERS: We have one more witness to call. It's not gonna be a long direct. We can try call her tonight. I think she's available. It's Nurse Campbell.

So we can try to get her on and finish up tonight if the Court would like.

THE COURT: Whatever y'all want to do.

MR. IHNEN: I think we're fine doing Nurse Campbell tonight, and then we would just request that maybe we do our arguments in the morning and just have the night to prepare for that.

THE COURT: That's--that's fine.

MR. IHNEN: We're fine pushing through tonight.

THE COURT: That's fine.

MR. IHNEN: Could we have a--maybe a five-minute recess--

MR. AYERS: The state would prefer to finish up tonight altogether. We're prepared to make a brief 15-minute max summary, as the Court requested, after Nurse Campbell's testimony so that we don't have to reconvene the

staff, the court reporter, everybody tomorrow. Don't think that would be a good use of the Court's time.

So that's--that's the state's position.

MR. IHNEN: We just need some time to prepare.

We could do it later tonight. Maybe after Nurse Campbell, take about an hour recess or so and then reconvene later this evening.

We've obviously been--

THE COURT: I appreciate you wanting to get this over with, but it's 6:30-something tonight now.

We're gonna come back tomorrow and do your arguments. Do you want--with that in mind, do you want to do Ms. Campbell tomorrow or you want to go ahead--

MR. AYERS: We--we might as well.

THE COURT: I mean, it's up--they're willing to stay. I'm willing to stay and get her done, but if you're coming back anyway--

MR. AYERS: Yeah. There's--there's really no benefit. So we'll just--

THE COURT: Yeah.

MR. AYERS: --do Nurse Campbell tomorrow.

THE COURT: And there--I assume there are no surprises to either side about what she's gonna say.

So this gives you the evening to get your statements together.

Okay. Then we will be in recess and adjourn till nine o'clock tomorrow morning.

(Court adjourned.)

* * *

(END OF REQUESTED TRANSCRIPT OF THE EVIDENCE)

C E R T I F I C A T E

STATE OF TENNESSEE:

COUNTY OF KNOX:

I, Mary K. Muffler, Court Reporter in the Sixth Judicial District of the State of Tennessee, Criminal Court, do hereby certify that I transcribed the above proceedings from audio recording and that the foregoing pages constitute a true and accurate record of the proceedings had and evidence introduced in the captioned cause in the Criminal Court for Knox County, Tennessee, Division III, on the 12th day of August, 2026.

I further certify that I am not an attorney or counsel for any of the parties, nor a relative or employee of any attorney or counsel connected with the action, nor financially interested in the action.

This the 19th day of August, 2026.

_____
Mary K. Muffler

IN THE SUPREME COURT OF TENNESSEE
AT NASHVILLE

STATE OF TENNESSEE,	)	Criminal Court for Knox County
	)	No.58183A
Respondent,	)	
	)	No.M2020-01156-SC-DPE-DD
vs.	)	
	)	
CHRISTA GAIL PIKE,	)	Special Master W. Mark Ward
	)	
Movant.	)	

EXPEDITED TRANSCRIPT OF THE EVIDENCE

Volume 1 of 1

(Proceedings on August 13, 2026)

THE HONORABLE W. MARK WARD, PRESIDING JUDGE

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IN THE SUPREME COURT OF TENNESSEE

AT NASHVILLE

STATE OF TENNESSEE,)

Respondent.)

v.)

CHRISTA GAIL PIKE,)

Movant.)

(Whereupon, this cause came on for hearing and hearing was held on the 11th through 13th days of August, 2026, before the Special Master W. Mark Ward, presiding over the proceedings held in Knox County Criminal Court, Knoxville, Tennessee, when the following proceedings were held on the 13th day of August, 2026:)

THE COURT: Good morning, everyone. I hope everyone had a good night's sleep. The State has one more witness?

MR. AYERS: Yes, Your Honor. The State calls Nurse Elizabeth Campbell.

THE COURT: Ms. Campbell, can you hear us?

THE WITNESS: Yes, I can hear you. It appears that my camera is not showing you. I can try to log on quickly through my phone. I

apologize. I can't see everyone.

MR. AYERS: If you log out and log back in, that might fix it.

THE COURT: Are you on a laptop, ma'am?

THE WITNESS: I am on a laptop.

THE COURT: Does the laptop have the camera?

THE WITNESS: Yes.

THE COURT: And --

THE WITNESS: Yes, and I can --

THE COURT: -- is there a cover over the hole that has the camera in it?

THE WITNESS: No, sir. And I've been working on it -- no. I do apologize. Let me log out and come back in.

THE COURT: The State provides me with a docking station and the camera is over it and I have a fear of -- it's never open, but the first time I got on it and tried to -- I couldn't figure out why this camera was not working.

While we're pausing, I'll -- knowing that you're working up your closing pitches and you'll be working up your arguments, I wanted to make a comment about my book report thing. I don't want anybody to misunderstand. This Court is well

aware that experts can rely upon literature reviews so long as the literature is the type material that that expert would use in their profession and reasonably rely upon those and they're reliable.

Of course, in this case, we've had an unusual situation trying to find an expert on hanging. This is an archaic form of punishment in -- can anything like that, in assessing the weight of an expert's testimony, you look at what they relied upon in their references and we look at their knowledge of those records. I very much enjoyed yesterday's discussion of that -- the attorneys had with the doctor about the references he had in his report. And a really intelligent discussion and cross examination was very helpful. But when you have an expert that -- is something like hanging that his references don't contain any references to any judicial hanging. And then when you -- he provides us statistics or maybe he doesn't know where he got that statistic from, knows nothing about the source with nothing -- unlike yesterday's cross examination with (inaudible) where the doctor was very familiar with the underlying materials that he cited. When

an expert can say, well, I read it but I don't know where it is, I don't know what the study involved, I don't know the time frame of the study, I don't know what the definition of botched is, I don't know -- I don't even know who the author is. I say all this to say sometimes experts give book reports and sometimes they give evidence based on information that they reasonably can rely upon in their field. I don't know how you can reasonably rely upon some information that you don't even know anything about, except the result that backs up your opinion. So, I don't want there to be any mistake for the Supreme Court to believe that this Court misunderstands the ability of experts to make literature searches but the Court, in weighing those, has to look at those closely. So, sometimes it's a book report and sometimes it's not. And oftentimes it's somewhere in between. So we'll just see.

Are we ready on this witness?

MR. AYERS: Nurse Campbell, can you hear us?

THE WITNESS: I can hear you.

THE COURT: Nurse Campbell, would you raise your right hand?

THE WITNESS: (Complies with request).

(Whereupon, the witness was duly sworn and testified as follows:)

ELIZABETH CAMPBELL, MSN RN CRNI VA-BC,

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

DIRECT EXAMINATION

BY MR. AYERS:

Q. Nurse Campbell, could you please state your name and spell it for the Court?

A. Elizabeth Campbell, E-l-i-z-a-b-e-t-h C-a-m-p-b-e-l-l.

Q. And could you please describe your educational background?

A. I have an Associate's Degree in Nursing, which I received in 1991, I have a Bachelor's in Science and Nursing and a Master's in Science and Nursing.

Q. And do you currently work as a nurse?

A. I do.

Q. How long have you been a nurse?

A. Close to 35 years.

Q. Do you hold any certifications?

A. I do. I have a Vascular Access Board Certification and I have Certified Registered Nurse of Infusion certification.

Q. How long have you held those certifications?

A. The Vascular Access Board Certified is a newer one that I sat for last month. The Certified Registered Nurse of Infusion, I sat for in 2001.

Q. And with the certification that you got in 2001, do you have to recertify?

A. Every three years.

Q. And what's involved in that process?

A. You can either recertify by sitting for the exam again, which I opt not to. You can also attend conferences, national conferences on education and continuing education solely in Infusion and Vascular Access.

Q. Are you currently employed as a nurse?

A. I am.

Q. And can you describe what you do?

A. I -- probably about 50 to 60 percent of my time is spent at the bedside with patients, assessing their vascular access and consulting with physicians, nurses, and other providers to recommend the correct access for the patient. And the other portion is actually education of nurses and physicians and physicians assistants on assessing patients for vascular access, coming up with what their correct vascular access needs would be for whatever the therapy is that they're going to be receiving.

Q. Do you place IVs as part of your job?

A. I do, every day.

Q. And do you place IVs in patients with difficult-to-access veins as part of your job?

A. Yes, I do.

Q. How often do you do that?

A. Also every day.

Q. When was the last time you placed an IV?

A. Yesterday.

Q. And are you a member of any professional associations?

A. I am. I belong to the Association for Vascular Access, and that is the governing body that produces the VA-BC certification. And I belong to the Infusion Nurses Society, both as a member and I do review of their journals and their standards of practice.

Q. Have you given presentations on the topic of vascular access?

A. I have. I've given them nationally and locally. I have gone across the country to do some courses and I go to national conferences, as well.

Q. And did you draft a declaration for this case?

A. I did.

Q. And is a copy of your CV attached to

that declaration?

A. Yes.

MR. AYERS: I'm now going to move Nurse Campbell's report and CV into evidence.

THE COURT: Any objection?

MS. BALES: No, Your Honor.

THE COURT: All right.

MR. AYERS: May I approach, Your Honor?

THE COURT: Sure. Are we going to have them combined in one exhibit?

MR. AYERS: Yes, Your Honor, if that's all right.

THE COURT: Marked as Exhibit 30, I believe.

COURT REPORTER: Yes, sir.

(Whereupon, Exhibit No. 30 was marked and received into evidence.)

Q. Nurse Campbell, do you have a copy of this report handy that you can refer to?

A. Yes.

Q. And does your CV reflect the work history you just discussed?

A. Yes.

Q. Have you ever placed an IV in someone

with thrombocytosis?

A. I don't specifically -- although, actually I shouldn't say that. I don't specifically remember somebody with thrombocytosis, although yesterday I did actually sit with a patient that has a very similar type of blood disorder that causes this -- the potential same type of outcomes with clotting quickly.

Q. And have you testified as an expert in other cases?

A. I have.

Q. Have you ever been excluded as an expert before?

A. No, I have not.

MR. AYERS: At this time, the State would offer Nurse Campbell as an expert in general nursing and vascular access.

MR. AYERS: Any objection?

MS. BALES: We don't object to her being offered as an expert in nursing and vascular access. If she starts testifying extensively about thrombocytosis, we would want to voir dire her about that.

THE COURT: Do you anticipate that?

MR. AYERS: No, Your Honor.

THE COURT: Okay. I will allow her to

testify in those fields.

Q. Now, based on your expertise, Nurse Campbell, can you explain to the Court how IV access is generally obtained -- let me clarify that -- how peripheral IV access is generally obtained?

A. So, you would approach the patient, excluding all the before work with orders and such. And where I've worked, we have what we call an IV start kit, which is pretty standard, where you have a little kit that has the tourniquet that's needed to stem the vessels in the peripheral areas. I would put the tourniquet on whichever arm -- typically we choose the dominant arm, the dominant side because those vessels tend to be the better vessels for patients because of, you know, our use of our dominant side. I would then palp (sic) for vessels to see what would be the most appropriate, in the most appropriate area, for whatever therapy we're doing. And then we have -- in my kits we have something called a swab -- a chlorohexidine swab that actually can help the vessels plump a little bit as well. And once I've determined where I'm going to place the IV and where I'm going to be absolutely sure with my site, I will then prepare my catheter, speaking with the patient the entire time and then hold traction on the vessel and -- edge of the vessel with my -- over the -- over-the-needle catheter. We'll --

Q. Now in preparing --

A. Sorry.

Q. In preparing your report, did you review documents from this case including an order from the Tennessee Supreme Court?

A. I did.

Q. And did you see term “small Veins” in those documents?

A. I did.

Q. Referring to paragraph eleven of your report on page four, you state. “Patients often self-identify as having small veins.” Can you explain to the Court what that term “small veins” means to you as a nurse?

A. To me as a nurse, as a practitioner in this field, it means that the impression potentially that they have small veins. And that could come from many ways. It could come as they’ve been told over time if they’ve had -- if they’ve had practitioners that weren’t necessarily as skilled and able to access their vessels, or if they’ve had difficulty getting their vessels accessed for either labs or IV catheters in the past. But it’s hard -- with different body habitus, it’s hard to actually quantify who has an actual small vessel because the actual vessels can be larger than we -- we can -- that can, once we put the tourniquet

on, they're much easier to palpate.

Q. So, to your knowledge, is small veins a medical diagnosis?

A. No.

Q. Do you ever encounter patients as a nurse who self-identifies having small veins?

A. Yes.

Q. How often does that happen?

A. Daily.

Q. And have you secured IV access in patients like that?

A. Yes.

Q. How do you go about doing that?

A. I do it with the procedure that I just described. If I can't actually locate something immediately, I will oftentimes either institute gravity -- you know, have the peripheral -- the arm hang down off of whatever area we're using to help gravity get some of the vessels to plump up. Warmth can also happen. And there are also vein visualization devices that are available at many facilities. I don't normally use those because I don't usually have much of a difficulty, but they're available if needed.

Q. Have you ever heard of something called a DIVA scale or a DIVA score?

A. I have.

Q. Can you explain what that is?

A. Sure. It was a term that's come out and it's been used now actually internationally and my institution incorporated it into our nursing notes to help --

MS. BALES: Objection. I --

THE COURT: One second, ma'am. I think she's making an objection.

THE WITNESS: Oh, sure.

MS. BALES: Discussion of a DIVA scale is not in her report. So I just would like clarification to lay a foundation for this to be appropriate.

MR. AYERS: Yes. She was asked is she familiar. She is. And she's now going to explain how it relates to her field of expertise.

MS. BALES: Okay. She's -- is that -- is she going to testify about Ms. Pike's veins in relation to that?

MR. AYERS: Right now, she's going to testify about what she knows about a DIVA scale.

MS. BALES: Okay. We just want to make sure that what she testifies to has been disclosed.

THE COURT: If you hear something that's

out of place, just hop right back up and we'll address it.

MS. BALES: Thank you, Your Honor.

MR. AYERS: I'll ask the question again, Nurse Campbell.

Q. Can you explain what a DIVA scale is?

A. Yes. It's a scale that's used internationally. There are four levels on the DIVA scale to tell -- that can help future practitioners if you encounter a person that has what we call Difficult IV Access, which is what DIVA stands for, you can help to prepare other practitioners or let providers know that you've identified this patient as having difficult access and what type of interventions you recommend for either that particular encounter or for future encounters.

Q. And are there any factors that go into this consideration of a DIVA scale or score?

A. Yes. It can have to do with the availability of -- we often run into patients that may only have one arm available for vascular access due to comorbidities, breast cancer with lymphoma removal, things like that. It can also help us to indicate patients who have had multiple IVs over a period of time. They may be in the hospital for a long period of time and their vessels have become exhausted based on all the therapies that they're

receiving. And it can also tell us if the patient has scar tissue in vessels or help us identify patients who may be -- have used substances in the past via their vessels that can also make these vessels no longer available. And we document these in our nursing notes every day.

Q. So have you personally documented a DIVA score in a patient's medical records before?

MS. BALES: Your Honor, I'm going to object.

THE WITNESS: Yes.

MS. BALES: One, what she has done at her facility under the guidelines at that hospital does not speak to what the medical providers at the prison do. And second, this is not in her report.

MR. AYERS: This is well within the field of her expertise. It's been an issue that's been raised in this case by the Plaintiff's experts. She has personal familiarity with what it is. What I will not be asking her to do is to attempt to assign any sort of score to Ms. Pike. Because as the testimony will show, Nurse Campbell has not examined Ms. Pike. So I'm not asking her to go outside of her own personal knowledge to testify as to anything related to this score.

MS. BALES: Your Honor, it's not in her report, any discussion of this, the DIVA scale. It's not been disclosed, it's not in her report. We would ask that she not be allowed to testify --

THE COURT: I thought there was a mention of a DIVA scale earlier in this hearing.

MS. BALES: Pardon?

THE COURT: Didn't one of the other experts talk about the DIVA scale?

MS. BALES: She did talk about risk factors for access to veins, but she didn't talk about the DIVA scale. That's a separate instrument that has not been --

MR. AYERS: I cross examined Dr. Van Norman about the DIVA scale and it was in her report.

THE COURT: Well, anyway, you may be correct and so what's my remedy. I mean, the exclusion of something like this as an extreme remedy is relevant and so I'm going to allow it. Even though it might be outside her report, I'll allow it.

MS. BALES: We would ask the opportunity to rebut that if we think that is warranted.

THE COURT: Sure. Absolutely. And you

still have the opportunity to put on any rebuttal proof you want to put on.

MS. BALES: We do, Your Honor.

THE COURT: I'm not foreclosing anything.

Q. So, the question, I'll repeat, have you ever personally entered a DIVA score into a patient's medical records?

A. Yes, daily.

Q. And if you, as a nurse, encounter such a score in a patient's medical records, does that tell you anything?

A. It tells me that I need to really potentially bring extra tools with me to assess a patient.

Q. And if a patient does not have a DIVA score in their medical records, does that tell you anything?

A. Yes, it tells me that they likely do not have difficult access at all.

MS. BALES: Your Honor, I object to that. That's completely irrelevant to what we know about -- there's no foundation for that being the case for the way the records are documented in Ms. Pike's case.

THE COURT: I'll note your objection, but I'm going to overrule.

Q. Have you reviewed Ms. Pike's medical records?

A. (No response.)

Q. Nurse Campbell, I'm not sure if you heard. Have you reviewed Ms. Pike's medical records?

A. Yes, I have.

Q. Did you review those records for any information that might be relevant to IV access?

A. Yes, I did.

Q. In your record review, did you see any records that indicated that Ms. Pike's veins would be difficult to access?

A. Not based on what I read in the records.

Q. Did you see any records concerning phlebotomy?

A. I did.

Q. Did you draw any conclusions from those records?

A. The records that I saw from -- I did draw conclusions.

Q. Can you explain those?

A. Yes. Based on what I saw, there were a number of documented phlebotomy visits. And with the exception of one of them, all of the phlebotomy procedures were successful on the first attempt. And on one of the

attempts it took two attempts to secure access with the phlebotomy.

Q. And what, if anything, did that tell you about venous access?

A. That tells me that that's pretty standard to do one to two attempts. So that tells me that this is a standard not-difficult-to-access patient.

Q. Did you notice in those phlebotomy records where the blood was drawn from?

A. Yes. There were three different areas. The hand, what's called the forearm, and what's called the antecube which is the area of the bend of the elbow.

Q. In any of those records, did the location of the blood draw lead you to draw any conclusions about venous access for Ms. Pike?

A. No.

Q. Did those phlebotomy records indicate the size of the needle that was used to draw blood from Ms. Pike?

A. Yes.

Q. Do you recall what size needle was used?

A. Yes. They were the standard 23-gauge phlebotomy needle, butterflies.

Q. You just referred to that as a standard 23-gauge needle. Can you explain why?

A. That's very frequently used for phlebotomy, especially in the hospital setting. But that is very frequently used for people -- it's less painful.

Q. Did you draw any conclusions from the fact that a 23-gauge needle was used to draw blood from Ms. Pike?

A. No. That's the standard needle.

Q. Now, you stated at the beginning of our time together that just yesterday you had seen a patient with a clotting disorder of some kind; is that correct?

A. Correct.

Q. Have you ever started IVs in patients with platelet disorders?

A. Yes, both too many platelets and too little platelets, yes.

Q. Let's talk about patients with too many platelets. Are you aware of Ms. Pike's platelet counts?

A. Counts, I'm not, no.

Q. Are you aware that she alleges that she has a condition that results of elevated platelet counts?

A. Yes.

Q. And you have started IVs in patients with elevated platelet counts, have you?

A. I have not with a particular quote/unquote diagnosis, but yes I have.

Q. If it comes to your attention as a nurse that a patient has an elevated platelet count, do you take that into consideration when placing an IV?

A. That doesn't -- well, in placing the IV, likely, I would -- which I always prefer to go in a forearm because those are the most stable areas to place an IV, but it would be more having to do with the aftercare and the infusion and what exactly our goal is in starting this IV.

Q. So, in terms of achieving the IV access, would you do anything different --

A. Uh-huh.

Q. -- for a patient with an elevated platelet count?

A. No.

MR. AYERS: Those are all my questions. Thank you, Nurse Campbell.

THE WITNESS: Thank you.

THE COURT: Cross examine.

CROSS EXAMINATION

BY MS. BALES:

Q. Good morning, Nurse Campbell. My name is --

A. Good morning.

Q. -- Susanne Bales. I represent Ms. Pike. I'd like to talk a little bit about your more recent

experience. What is the most recent presentation that you've given?

A. It was last September, I believe, in -- at the Association for Vascular Access in Orlando, I believe.

Q. So that was in 2025?

A. Correct.

Q. How many presentations did you give in 2025?

A. Probably one.

Q. Okay. And how many presentations did you give in 2024?

A. I'm not sure if I did. I'm sorry. I don't have my CV in front of me.

Q. You're not sure if you did give presentations in 2024?

A. I don't remember off the top of my head. I can pull up my CV. I apologize. I didn't ...

Q. Okay. Could you pull it up? I'm just confused because the CV shows your last presentation was in 2015. But --

A. Oh. Oh.

Q. -- when you discussed your CV or when you were discussing how many presentations you did you said you had done several recently. So I'm trying to

understand --

A. Yes.

Q. -- what you did recently.

A. Oh, hmm. Let me -- hold on one second.

(PAUSE)

A. I have it. Let's see. It says my last presentation was 2015?

Q. Yes, ma'am.

A. Is that -- so, what I have on my presentations, the last one on the list I have is Update Your Infusion Therapy Toolbox. Is that what you're referring to?

Q. Yes.

A. Yes. And above that, there is Mentoring Graduate Note, that's 2013. I have Urban Legend of the 10 ml Syringes presented to the Infusion Nurses Society in 2019. And then 2021, I have Myths Associated with Vascular Access and Infusion Therapy in August of 2021.

Q. I don't see that on your CV.

A. No -- that's weird. Okay. That's -- I apologize -- I don't know. That's what I have that I sent to the agency. I apologize. I don't know. That's ...

Q. So you have one in 2021 that is not on the CV that you provided to the --

A. Yes. And last summer as well, yes.

THE COURT: Do you want me to take a recess --

THE WITNESS: I can --

THE COURT: -- and see if she can pull up her current CV?

MS. BALES: No, Your Honor.

THE COURT: I mean, I know sometimes we store them and get more than one CV and --

THE WITNESS: Yes.

THE COURT: I'm wondering if she sent in the wrong one.

MS. BALES: Which would mean that the incorrect one was disclosed to us.

THE COURT: Right.

MS. BALES: Okay.

THE COURT: Do you want me to see -- I mean, whatever you want me to do.

MS. BALES: I believe she testified that she reviewed it and it was accurate --

THE COURT: Okay.

MS. BALES: -- the CV that was presented to the Court.

THE COURT: If you want me to leave her on, I will. I just didn't know if you wanted access.

MS. BALES: I just would like to know how many omissions there are from the CV, is what I'm getting at.

Q. How many presentations did you do in 2022, ma'am?

A. 2022?

Q. Yes.

A. None.

Q. Okay. And 2023?

A. None.

Q. And 2024?

A. None.

Q. Okay. And you're sure about that?

A. Yes.

Q. Okay. So when you testified earlier that you've done several presentations recently, that would just be one in 2025?

A. I don't know that I said --

MR. AYERS: Objection, misstating testimony.

THE COURT: I'm sorry. We've had an objection. When we have -- when the lawyers start talking over you that means someone is probably making an objection. And just pause a second.

THE WITNESS: Uh-huh.

MR. AYERS: The objection was a misstatement of testimony.

THE COURT: Okay. It's cross examination, I'll let her ask, continue to ask.

Q. Okay. So one presentation in 2025; is that correct?

A. That's correct.

Q. And then we jump to 2023?

A. None in 2023, I believe.

Q. Okay. I believe you just testified that you did have some in 2023 -- or at least one in 2023.

A. I said 2021, 2019, 2013, but I don't believe I said 2023.

Q. Okay. Well, the record will reflect.

A. Uh-huh.

Q. Let's talk about professional achievements. The last professional achievement I see on your CV is from 2020, but I believe you testified differently than that.

MR. AYERS: Is there a question there, Your Honor?

Q. Okay. Would you -- ma'am, you testified that the CV that you reviewed was accurate. Do you agree that that CV is accurate?

THE COURT: Do you want to show it to

her again and give her some time to look over it? Ma'am, do you have your CV in front of you? Or can you --

THE WITNESS: I have one -- I have one in front of me, but it sounds like it's not the one that the agency sent over, so ...

MS. BALES: Okay.

THE COURT: We're going to show you the one that was sent in that was disclosed to the parties. And Counsel is going to act you whether or not this is your most recent CV and she's going to ask you whether it's accurate.

THE WITNESS: Understood.

THE COURT: Do we need to scroll down --

Q. Just professional achievements. Is that accurate? Just yes or no.

A. I'm just looking at it. So where it goes to American Nurses Association that, so far, is accurate.

Q. Okay. Scroll down.

THE COURT: Ma'am, she's also asking you if there are omissions.

A. From there, no. The only omissions would be, it looks like my presentations are not updated. This here does have the 2020 -- you said my last presentation was 2015. This does have the 2020. But this is not -- I do have

one after -- two after the 2020 that appear not to be in this version.

Q. Okay. So this is not actually accurate.

A. The most updated, correct.

Q. Ma'am, I -- one thing that I bet is accurate on this CV is that you state you're especially passionate about educating folks on best practices for gaining venous access. Is that a fair statement?

A. Yes.

Q. Okay. And you're familiar with -- I believe you mentioned this earlier. You're familiar with the Infusion Therapy Standards of Practice; is that correct?

A. That's correct.

Q. And, in fact, you're on the Peer Review Panel for that?

A. Correct.

Q. And you reviewed these standards in preparing your statement -- your report?

A. Correct. Correct.

Q. And it's an evidence-based document; is that correct?

A. That's correct.

Q. Okay. And the Standards of Practice state that vascular access requires clinical experts; is that correct?

A. Correct.

Q. And the reason for that is that gaining peripheral access is invasive; is that correct?

A. Yes.

Q. And it is a high-risk endeavor; is that correct?

A. That's correct.

Q. Okay. So gaining venous access is a high-risk endeavor, that's correct?

A. Yes.

Q. Okay. So the standard that says education alone is insufficient; is that correct?

A. Yes.

Q. A practice for gaining venous access that just relied on education is insufficient; is that correct?

A. If by education we mean just not hands-on, then yes.

Q. Okay. So you guessed my next point. The Standards of Practice require observed clinical competency; is that correct?

A. That is correct.

Q. And it requires ongoing training; is that correct?

A. Yes.

Q. And the Standards of Practice state that the competency of a person who is going to gain venous access should be routinely assessed?

MR. AYERS: I'm going to object to this line of questioning insofar as it's a back door to try to get to the qualifications of the physician.

MS. BALES: Your Honor, we had testimony about the training. And Commissioner Thomas testified that she confirmed their licensure and that they had 20 years of experience. This is about the people who will gain IV access and the fact she's -- the fact that she's an expert in an area, that this is like her core expertise, and she recommends that a 20 --

THE COURT: I can't rule in your favor until you stop talking.

MS. BALES: Okay. Thank you, Your Honor.

THE COURT: All right. I'm going to overrule.

Q. So the competency of a person who is going to insert an IV should be routinely assessed; is that correct?

A. That's correct.

Q. For example, if a clinician makes two attempts at gaining venous access --

MR. AYERS: Objection. This is getting into physician again, Your Honor.

MS. BALES: Your Honor, I think he doth protest too much. This is clearly about the IV access team. I'm asking her --

THE COURT: Well, ask about the IV access team --

MS. BALES: Okay. I'll be sure to --

THE COURT: I thought you used the word physician.

MS. BALES: I think I said clinician.

THE COURT: Oh, maybe I misheard that.

MS. BALES: I'll use -- I'll preface -- I'll --

THE COURT: I'll let you move on with clinician, as long as it -- I didn't hear physician.

MS. BALES: I understand.

Q. A person who -- an IV person who is attempting to gain IV access, after two attempts, the Standards of Practice say they should ask someone else to do it; is that correct?

A. That's correct.

Q. And the reason for that is there is a risk of complications after two attempts; is that correct?

A. Partially correct, yes.

Q. Okay. Well, what the Standards of Practice says. We could pull it up if we need to.

A. Uh-huh.

THE COURT: And that's a standard of practice?

MS. BALES: Yes, Your Honor. That's the Infusion Therapy Standards of Practice document that she relied on in preparing her report.

THE COURT: So that's a standard of practice for well care people?

MS. BALES: Well, it's --

THE COURT: Is it the standard of practice for executing people?

MS. BALES: No, it's not. It's the standard of practice for gaining venous access, which is what her expertise is in.

THE COURT: Okay. But there's a distinction, isn't there? Is there a standard of care for peripheral IV access if the intent is to cause the death of someone?

MS. BALES: Your Honor, there is. If there are not -- if there are no standards or if they are unreliable standards for gaining -- for the IV team to gain IV access, that increases

Ms. Pike's risk of added --

THE COURT: No, no, I didn't mean that. I said is there like an organization that has standards for the quality and level of training for people to gain peripheral access -- peripheral IV access when the intent is to cause the death of an individual? I mean, because any complications that might arise, you know, down the road from -- wouldn't be applicable in a situation where the person is going to be dead.

MS. BALES: Your Honor, the complication of extravasation would be applicable in --

THE COURT: So there's some that would, but some --

MS. BALES: Yeah.

THE COURT: -- might not -- okay. But you're talking about the standards that you would use in a hospital setting or when the patient -- the goal is to preserve the health of the patient?

MS. BALES: I believe she testified, based on her experience, she made a recommendation for how to administer the lethal injection chemicals. That's what I'm getting at. She relied on this document to give this recommendation --

THE COURT: Well, I'm going to let you

go forward. I was just seeking clarification about the standards.

MS. BALES: Okay.

Q. The Standards of Practice emphasizes that peripheral IV access should be gained by people who have clinical knowledge and skills; is that correct?

A. Correct.

Q. Okay. The Standards of Practice state that a patient self-report is the most valid and reliable indicator of pain; is that correct?

A. Would you repeat the last word, please?

Q. The Standards of Practice states that a patient self-report is the most valid and reliable indicator of pain; is that correct?

MR. AYERS: Objection. I'm going to ask that she be given a chance to look at these Standards of Care to answer these questions about what they contain specifically.

MS. BALES: Happy to do that, Your Honor.

THE COURT: I assumed she had it in front of her.

MS. BALES: Well, we can -- do you have a copy of the -- ma'am, do you have your copy with you of the Standards of Practice?

THE WITNESS: I can pull it up.

MS. BALES: Okay.

THE WITNESS: I can pull it up.

MS. BALES: Okay. Well, we'll use that. I think that will be quicker. I'm almost done with the Standards of Practice, by the way.

THE WITNESS: Okay. I have my Standards document. Could you let me know what page we're on or where we are?

THE COURT: Ma'am, they've posted a copy on the link here. Is that you have or do you have a different copy from --

THE WITNESS: I have -- the one that's on this screen right now, that's what I have. That's the latest version, the 2024 standards.

THE COURT: She's going to call your attention to specific pages, I believe.

THE WITNESS: Right. Okay.

MS. BALES: Okay. Can you go to PDF page 107?

Q. Ma'am, we're going to PDF page 107 out of 291. It might be quicker ...

MR. AYERS: How does that corresponds to these pages?

MS. BALES: I can call that out also.

Q. Okay. That is page S45.

A. S45?

Q. Yes. I'm calling that the -- I guess the paper document pages out for Counsel, but we can also look at the PDF number.

A. Okay. Sorry, I'm just pulling it -- I'm trying to get to that page S45.

MR. AYERS: This is S101.

MS. BALES: Pardon?

MR. AYERS: This is S101.

MS. BALES: Is that --

MR. AYERS: On the bottom right on this one.

MS. BALES: I know. They're different. It's confusing.

THE WITNESS: Let's see, S60 --

MR. AYERS: That's a different page.

THE WITNESS: Okay. I believe we're here.

MS. BALES: Okay. Hang on. I -- would you go to S107, please.

THE WITNESS: I'm sorry, you said S45; is that correct?

MS. BALES: I apologize. I got a little sideways working with the different numbers.

THE WITNESS: Uh-huh. Okay.

MS. BALES: I'm at S107.

THE WITNESS: Okay.

Q. S107 on the right side, paragraph C.

A. Okay.

Q. The Standards of Practice says that you should use pain relieving measures to reduce insertion-related pain; is that correct?

A. I'm just going to pull it up. Sorry. Let me see. Yes, it does say that.

Q. Okay. If we could go to S101. Paragraph D, subpart 5, so you'll need to scroll -- scroll beyond some so we can paragraph 5.

A. Okay.

Q. The Standards of Practice provides that a patient self-report is the most valid and reliable indicator of pain; is that correct?

A. Correct.

Q. Ma'am, I'm going to switch to your report now.

A. Okay.

Q. In your report you state that you reviewed Ms. Pike's record -- medical record; is that correct?

A. Yes, regarding her -- the phlebotomy

access.

Q. And how many pages of records were you provided?

A. I don't know how many -- the number of pages. I was -- looked at the phlebotomy records.

Q. And how many pages of phlebotomy records did you review?

A. I don't know the number, how many there were, the number of pages.

Q. Do you know how far back -- or the period of time for the records you reviewed?

A. I don't off the top of my head, no.

Q. Okay. So -- but your -- your report says there's no documentation that Ms. Pike had difficult access. That's in your report.

A. From what I read, there was no indication of difficult access.

Q. Okay. I'd like to talk about the 23-gauge needle.

A. Yes.

Q. Is it your testimony that a 23-gauge needle is commonly used in minor run (phonetic) blood draw? Or you said it's very commonly available. Is that your testimony?

A. Yes, it's commonly used in phlebotomy

daily.

Q. But that would be in a hospital setting; is that correct?

A. Not just hospital. Clinic, home care ...

Q. Okay. But it's -- I believe you said it's most commonly in a hospital setting.

A. That I said that?

Q. I -- you mentioned it's very common in a hospital setting.

A. I don't know that I said in a hospital setting. But it's a very commonly used needle for phlebotomy.

Q. And is it your testimony that it's used when it's not necessary?

MR. AYERS: Objection. Vague.

THE COURT: I'll let you rephrase the question. The question --

Q. Okay. You said that the 23-gauge needle is used commonly?

A. Yes.

Q. Did you testify that it's used to make access more comfortable?

A. It can be used to make access more comfortable. I can explain further if you'd like.

Q. Okay. Is it used every single time for a

patient when it's not necessary? Have you encountered that situation?

MR. AYERS: Objection. Foundation as to what's necessary.

THE COURT: Talk to her about necessary. I mean --

Q. When is it necessary to use a small-gauge needle?

A. So that particular needle, the butterfly needle, is actually very commonly requested by patients for their phlebotomy --

Q. And that's your testimony --

A. -- procedures.

Q. And that's your testimony under oath is that patients commonly request that?

A. Request a butterfly? Absolutely.

Q. That's your testimony under oath?

MR. AYERS: Objection. She's answered this question twice now.

THE COURT: Yes.

Q. Is it the practice that whatever the patient asks for the phlebotomist does?

A. Very frequently, yes. And the nurse does, as well.

Q. Okay. They let the patient dictate

their --

A. If it's within reason, absolutely.

Q. Okay. So we know that a 23-gauge needle is going to be slower; is that correct?

MR. AYERS: Objection. Foundation.

THE COURT: I'm sorry -- I'm going to overrule.

Q. Ma'am, a 23-gauge needle, the fluid moves through a 23-gauge needle at a slower rate; is that correct?

A. At a slower rate than a 21, but a faster rate than a 23. Yes.

Q. Okay. A 23-gauge --

A. I mean a slower rate than a -- 21, 23, and -- yes, it moves slower than a 21-gauge. Sorry.

Q. Okay. So, it moves slower than other commonly available needle sizes?

A. For phlebotomy purposes, yes. And for infusion purposes, yes.

Q. A 22-gauge is commonly available?

A. A 22-gauge is an IV catheter.

Q. Okay.

A. That's not a phlebotomy needle.

Q. How about a 20-gauge?

A. A 20-gauge is also an IV catheter. Those

aren't used for phlebotomy.

Q. A 21-gauge?

A. A 21-gauge is a phlebotomy needle. That's a butterfly. I'm not an expert on the -- there are two types of needles that are used for phlebotomy. There are the butterflies, which are very commonly requested. And this -- not just at my facility. I just know this in speaking with other practitioners. But there are also what they call the straight needles that some phlebotomists use in phlebotomy clinics that I don't off the top of my head know exactly what the gauges are. They're likely the same because they're odd numbers versus the even numbers for IV catheters.

Q. You would agree with me that the smaller the needle the slower the blood draw will happen?

MR. AYERS: Objection to the relevance of further questions about phlebotomy. This is outside her area of IV access expertise. The reason phlebotomy was an issue is the medical records, not what is the standard of care, what happens in phlebotomy generally.

MS. BALES: Your Honor, she's drawing an inference that there's absolutely no reason to use a 23-gauge needle as reflected in Ms. Pike's records. And I'm trying to understand how she got

to that conclusion.

THE COURT: I'll give you some leeway, but you're probably getting close to ending this, so -- I'm going to give you some leeway here.

MS. BALES: Okay. I'll ask my last question then.

Q. Would you agree -- related to that topic, would you agree that the smaller the needle the slower the fluid travels through it?

A. Yes.

Q. Thank you.

THE COURT: I don't want to beat a dead horse, but haven't we had about four experts that have said that already?

MS. BALES: Well, we have. I'm trying to understand the basis for her opinions, Your Honor.

THE COURT: Okay.

Q. On page six, we've got your -- you've got your conclusion.

A. Okay.

Q. And your conclusion is that placing a peripheral venous catheter utilizing a 22-gauge or larger would allow the infusion to be given in the most humane way possible?

A. Yes.

Q. And that's based on your years of experience and based on using the standards of practice that we discussed; is that correct?

A. That the 22-gauge or larger because I was asked originally to discuss the 23-gauge butterfly versus --

Q. Ma'am --

A. I'm sorry?

Q. -- you're recommending a 22-gauge or larger; is that correct?

A. Yes.

Q. And your opinion, your declaration is that that would allow a humane infusion; is that correct?

A. Correct.

Q. Ma'am, your declaration states that you reviewed the protocol; is that correct?

A. Yes.

Q. Okay. And the protocol has a section on the IV team; is that --

A. Yes.

Q. Does the section on the IV team have any requirement for -- does it have any requirements for education?

MR. AYERS: I'd ask the witness be shown the protocol to refer to if she's going to be

asked questions --

THE WITNESS: Yeah, please.

THE COURT: Okay. Can you put up the protocol for her?

MS. BALES: Your Honor, we need just a minute.

(PAUSE)

MS. BALES: We're getting it up on the screen, ma'am.

Q. Okay. That number one, on the top section, did you review that?

A. Yes.

Q. And do you see the sentence that says all team members are currently certified, licensed, and/or qualified?

A. Yes.

Q. Okay. So we have no way of knowing if that includes education, do we?

A. Well, if they're certified and licensed, to me that would say there was education.

Q. Okay. Fair enough. We don't know what their clinical --

A. Correct.

Q. -- education is? Would you agree we don't know if they've demonstrated competency?

A. By that paragraph, I do not know.

Q. Okay. We do not know if they've practiced IV insertions, do we?

A. Well, it says they're currently certified, licensed, and/or qualified to place IV lines.

Q. But that doesn't mean that they have been -- we don't know what they're using to determine qualified, do we?

A. Specifically by this paragraph, no.

Q. In your recommendation for how to administer the lethal injection chemical, you recommend a 22-gauge; is that correct?

A. I believe I recommended a 22-gauge or larger. And to compare -- I was comparing the 23-gauge steel needle.

Q. Okay.

A. But yes, a 22 or larger, yes.

Q. Would there be any reason or how -- would there be a reason for there to be 24-gauge in the execution chamber?

MR. AYERS: Objection. This is outside the scope of her expertise. She's not a correctional expert.

MS. BALES: Well, there was testimony that there is a 24-gauge needle in the execution

chamber and presumably there's a possibility of intention to use it. So I'd like to elicit testimony from her --

THE COURT: I'll let you ask the question.

Q. Do you recommend a 24-gauge?

A. I -- so I always have everything available -- all different sizes available to me based on the patient. A 24-gauge is a very small catheter and it's typically used in children and babies. I don't off the top of my head know the infusion rate of a 24, but it would be fairly similar to the 23-gauge butterfly as far as the infusion rate. It would be safer and have a less -- less of a chance of extravasating or puncturing through the vein because it's not -- we're not leaving a steel needle in site, but it's a very tiny catheter.

Q. How much pressure would it take to use that 24-gauge?

A. I'm sorry?

Q. How much pressure would have to be applied to use that extremely small 24-gauge needle?

MR. AYERS: Objection. Foundation as to what would be delivered through it and how much fluid.

MS. BALES: Okay.

THE COURT: Well, I was going to -- before he objected I was going to say the question doesn't make any sense. Can you rephrase the question?

MS. BALES: Okay. Thank you, Your Honor. That's helpful information.

Q. In the execution chamber, there is a 24-gauge needle offered as one of the options. And you just testified that it would go slow, but might be -- what was your testimony about the 24-gauge?

A. It's a very small needle. It's typically used for pediatrics or neonates. I would have to look up what the infusion rate is, but it would be safer than the 23-gauge steel needle as far as being more stable and not causing issues with the vessel, but it would not be as -- the infusion would not be as quick as with the 22 or larger.

Q. Are you aware of how much pressure is applied to push the fluid through a 24-gauge?

THE COURT: I have the same problem. The question doesn't make sense because -- pressure -- pressure to get a certain amount of fluid. Do you want to get just a tiny bit of fluid very slowly, then you probably could have less pressure. If you want to get a certain amount of fluid in in a certain amount of time, you could have greater

pressure. So when you ask a question about how much pressure, that doesn't really get to what you're really wanting to ask.

MS. BALES: Okay.

THE COURT: And it's vague because it, by itself, doesn't make any sense. Am I making sense?

MS. BALES: Okay. I understand, Your Honor.

THE COURT: Okay.

Q. Ma'am, in your conclusion you testified that using a 22-gauge or larger would allow the infusion to be given in the most humane way possible. And I -- you've reviewed the protocol; is that correct?

A. Yes.

Q. We're going to pull up the page in the protocol that talks about the amount or the quantity or the volume of the injection.

MR. AYERS: At this point, I would object to the relevance of this line of questions. She has not testified that she believes a 24-gauge needle is appropriate. If she had, perhaps this might be relevant to determine what the pressure would be. But this is not an issue that is ...

THE COURT: Is this going to take a lot

longer?

MS. BALES: Your Honor, I'm trying to understand -- she has made a very serious recommendation. And I'd like to get to the bottom of that.

THE COURT: All right. I'll give you some leeway.

MS. BALES: It's very important to Ms. Pike's issue.

Q. Okay. That's what the infusion -- what you're calling an infusion, that's what's going to be injected?

A. Right.

Q. And do you recommend a 24-gauge needle for that?

A. Do I recommend a 24-gauge needle for that?

Q. Yes, in your experience.

A. I don't know that I would use a 24 for that. I would use a 22 or larger.

Q. And why is that?

A. Because of the amount of time it would take.

Q. It would take a longer period of time?

A. Yes. I believe -- I had a chart, I

believe, of different -- from my 22s up to 18s. So a 23 would be fairly similar to the 24. I don't have the 24 -- I did not do -- I did not include the 24 because again it's more of a -- it's a smaller catheter, it's a smaller needle. So I was looking more to compare the original proposal of the 23-gauge phlebotomy needle with what would be standard catheters.

Q. Okay. So to be clear, you do not recommend a 24-gauge for this process?

A. All things being equal, I would not. But I'm not with the patient. But I -- to do it in the quickest way -- say quickest way possible, I would not necessarily use a 24.

Q. Okay. Thank you. One more question. What is extravasation?

A. Extravasation is the inadvertent infusion of a vesicant medication into the tissue versus in the vessel.

MS. BALES: Can we go to page S257. And I apologize, I don't have the PDF number for that.

Q. Okay. Ma'am, we're pulling up the extravasation staging --

A. Yes.

Q. -- chart about that.

A. I'll have to pull up the standards

again. I closed them to move to the --

Q. We're getting it up. I -- we're just taking a little ...

MS. BALES: And if you could scroll down so the top half is visible. Are you able to enlarge it?

Q. Okay. So in stage four, the last factor that you look at, can you read that?

THE COURT: Do you want her to read it aloud?

THE WITNESS: Yes, I can see it.

Q. Okay. So that --

A. Oh --

Q. For the record, one of the factors for stage four extravasation staging is skin breakdown including blistering or necrosis; is that correct?

A. Correct.

Q. Okay. Are you familiar with pentobarbital?

A. I have not used it. I know that it's a vesicant.

Q. You know that it's -- pardon? You know that it's a what?

A. It's a vesicant which can cause extravasation.

Q. Okay. Thank you. And the larger the quantity, the larger the possible blistering or necrosis; is that correct?

A. That would be correct. But the extravasations happen in stages. We don't normally jump from a no extravasation to a four, if that makes sense.

Q. Okay. But you do agree that pentobarbital can cause burning?

A. It could. If it leaked into the tissue, it could.

Q. And a needle that's too big could tear the vein; is that correct?

A. I'm sorry?

Q. If the IV team in Ms. Pike's call --

A. Uh-huh.

Q. -- uses a needle that is too big, it could tear the vein; is that correct?

A. Could tear the vein?

Q. Or damage it?

A. It could potentially damage it. It depends on the size and the size of the vessel.

Q. Okay. So, but that is something you agree is possible if a needle that's too big is used?

A. If the catheter that is too big is used, it could take up too much space in the vessel, thus not

allowing for enough hemodilution that could cause some issues with the vessel, yes.

Q. And if some issues with the vessel happen, the pentobarbital could leak out of the vein; is that correct?

A. It's possible, yes.

MS. BALES: May I have just a moment, Your Honor?

THE COURT: (No audible response).

(PAUSE)

MS. BALES: Your Honor, no further questions.

THE COURT: All right.

MR. AYERS: No redirect, Your Honor.

THE COURT: All right. Do you have anymore witnesses?

MR. AYERS: No, Your Honor. That concludes the State's proof.

THE COURT: All right. Any rebuttal?

MS. BALES: Your Honor, may we have just a moment to discuss?

THE COURT: Okay. Why don't I take a short recess and then you can discuss that. And then if you decide you're not going to have rebuttal, why don't you get ready for our

presentations?

MS. BALES: Thank you, Your Honor.

THE COURT: If you decide, then we'll come back and take that up. Is ten minutes enough?

MS. BALES: Yes, Your Honor.

THE COURT: All right. Court is in recess.

(Whereupon, a brief recess was held, after which the proceedings continued as follows:)

THE COURT: Agree to make some kind of presentation here at the end. So I'm doing this primarily to help each side understand the thoughts of the other side so that you might address these in your findings of fact and conclusions of law that you're going to submit next week. So, relax, this is not an oral argument. This is --

MR. AYERS: Your Honor, I don't believe the cameras --

THE COURT: This is not an oral argument at all. I just want to give everyone an opportunity to briefly articulate where they think we are on each individual question that we have. Anything that you lawyers believe that you can agree on, I would appreciate knowing about that.

And then next week, you'll be submitting your findings of fact -- proposed findings of fact and conclusions of law. And then we'll be anticipating receiving the transcripts hopefully -- I believe we're going to get the transcript by the middle of next week. Does that mean you will not have it to help you with your findings of fact and conclusions of law? Okay. So, anyway, that being said, let's have our presentations however you want to present them. We'll start with the Movant.

MR. FERRELL: Thank you, Your Honor. And I was just prepared to go through all four of them one by one and talk about what we think has been shown.

THE COURT: Perfect.

MR. FERRELL: Okay. And the first issue is given the diagnosis of thrombocytosis, attempts to achieve peripheral IV access under the current protocol are sure or very likely to cause serious illness and needless suffering.

All of the experts in this case agree that Christa Pike suffers from essential thrombocytosis. They agree that thrombocytosis is a condition that produces excess platelets in the blood and that excess platelets can lead to

clotting. This increases her chances of suffering during an execution under the current protocol.

Dr. Mansour testified that any risk is not implicated until the platelets reach into the one millions. Dr. Van Norman explained that the longer a person has thrombocytosis the greater the risk of microvascular complications and clotting. Repeated blood draws during the management of thrombocytosis can make the veins more fragile and more prone to rupture. Dr. Van Norman also testified that thrombocytosis increases the risk of clot in an IV line.

Dr. Zivot, who is a board -- who is Board certified in critical care and anesthesiology and has treated patients with thrombocytosis and has experienced managing the care of critically ill patients with coagulation issues testified that Christa is at increased risk of clotting and paradoxically excess bleeding during the execution because excess platelets can consume a critical blood clotting protein.

Dr. Zivot explained -- based -- explained that based on his review of inmate autopsies that lethal injection by pentobarbital causes pulmonary edema, which is blood and other

fluids in the lungs. He confirmed that the autopsies of two Tennessee inmates executed under the current protocol both had pulmonary edema. He explained that it's an extremely painful condition characterized by a sense of drowning and burning and also explained that pulmonary edema, which can only happen if the patient is breathing and blood is circulating, happens while the patient is alive. And it's unclear whether the patient is unconscious, insensate, or conscious and sensate. And we just don't know the answer to that question. Dr. Zivot explained that Ms. Pike's thrombocytosis increases the risk of clotting in the IV sites and along the IV lines.

Dr. Mansour testified that he would not rule out this risk, but that her elevated platelet levels were not concerning to him. However, I think it's important to remember that Dr. Mansour had reviewed a limited number of the medical records provided by the State concerning Christa's thrombocytosis and platelet counts, that there were a number that either he did not review because he did not receive them or he overlooked them in his review process.

Dr. Mansour testified that two percent

of the population have platelet levels exceeding 450 up to approximately 525. However, the records that were provided to him show that Christa -- Ms. Pike's levels have exceeded that figure. And he did testify that that wouldn't change his opinion. But I think that that's important that those excess numbers are there.

As to the second issue that has been referred to this Court. Number two, that --

THE COURT: Let me interrupt you for just a second.

MR. FERRELL: Oh, I'm sorry.

THE COURT: Just a second. I'm not telling you how to -- are you going to come back to the first issue and tell me what the conclusion of law should be from these facts? Or are you just giving me your view of the facts?

MR. FERRELL: I was just planning on giving the view of the facts.

THE COURT: So you're not going to get into --

MR. FERRELL: I could, yeah. I think we got the instructions and I'm not sure I, you know --

THE COURT: Well, the Court has to send

in finding of facts and conclusions of law on each -- just on the narrow questions.

MR. FERRELL: Right.

THE COURT: So, I'm not telling you -- if you want to limit it to facts, that's fine.

MR. FERRELL: And I think that there are some -- I won't say that my entire presentation is limited to facts.

THE COURT: Okay. Just --

MR. FERRELL: But --

THE COURT: I'm going to keep my mouth shut. You go where you want to go with this. This is to benefit Counsel as much as it is to benefit me, so ...

MR. FERRELL: Okay. Thank you, Your Honor. And I do --

THE COURT: And --

MR. FERRELL: -- believe that the conclusion of law is that increased likelihood of serious illness and needless suffering does increase the possibility that given the Defendant's -- or the inmate's presentation with thrombocytosis, there is a marked increase in the possibility that insertion of IV's and injection of pentobarbital will be more likely to either be

difficult to achieve because of the compromised veins here or more likely to result in a blowout as some of the experts testified to and that that does increase the likelihood that an Eighth Amendment violation of cruel and unusual punishment will happen during the process of a lethal injection under the current protocol, given her diagnosis of thrombocytosis and the long history of blood draws she's had. And I know that gets more into the small and compromised veins. But the thrombocytosis itself will affect how the pentobarbital achieves or should achieve her execution.

All right. Number -- the second issue is given Ms. Pike's cited history of sexual assault and asserted diagnosis of post-traumatic stress disorder, PTSD, whether the movement of Ms. Pike to Riverbend Maximum Security Prison before the execution where she would be observed by male prison officials for two weeks prior to the execution would make it sure or very likely that the challenged protocol will cause Ms. Pike serious illness and needless suffering.

Now, obviously at the beginning of this hearing, we kind of established that there were

some misunderstandings in how the issue may have been presented or understood, but that Ms. Pike will not spend two weeks at Riverbend. Under the protocol, she will be under close observation at DJRC and according to the State she will not be transferred to Riverbend Maximum Security Prison any less than 24 hours -- any more than 24 hours before the scheduled execution. So that, the factual premise is a little different than in the question presented to Your Honor. But both parties agree that that is the case.

THE COURT: I guess I have to answer the question, but I guess what I'll probably do is answer their question and then answer a redrafted similar question. And I guess that question should ask whether the observation for two weeks prior to the execution and movement to Riverbend Maximum Security Institution 24 hours before --

MR. FERRELL: And it would be my contention -- and we haven't conferred on all of this, but that we would inform the Court and probably both sides would do the same, but it's our understanding and our agreement, like you just asked, what things do we agree on. This -- we can agree that the protocol sets out one process, but

the State has made agreements that I think are better for our client and therefore we're certainly not going to object to those changes. And I believe we've come to an agreement that she would be transferred not more than 24 hours, and that is when she would be at Debra -- or at Riverbend.

THE COURT: Well, we'll address that question for them, but assuming they need the answer to that question, I think that's a legitimate -- that's (inaudible).

MR. FERRELL: Yeah. I think the testimony of Dr. Bethany Brand, whose testimony was unrebutted about Christa Pike's psychological diagnoses and history of sexual trauma is the most important among this issue. Dr. Brand, a clinical psychologist and a specialist on the impact of trauma, testified concerning Christa Pike's history of sexual assault that began when she was a preschooler and lasted throughout her childhood.

Dr. Brand testified that Christa's sexual abuse began when she was just a preschooler and unfortunately continued throughout her childhood. She was raped again -- after the childhood incidents, raped again at age 11 and

raped once again at age 17. In addition, some of her mother's boyfriends committed -- at least one committed sexual assault on her by touching her in a sexual way and she was exposed inappropriately to a vast amount of sexual material. And that last rape at age 17 occurred almost exactly one year before the crime in this case.

Ms. Pike was also physically abused in childhood, which along with the sexual abuse leads to that diagnosis of post-traumatic stress disorder. And Dr. Mansour -- Dr. Brand graphically chronicled how PTSD is likely to affect Ms. Pike at the time of her execution under Tennessee's current lethal injection protocol. And I begin with the close observations that in our understanding of the facts will happen at the Debra K. Johnson Rehabilitation Center. And according to Dr. Pike (sic) this will be triggering to have her observed in all of her activities every ten, fifteen minutes. It will -- that observation -- that close observation will be triggering to this survivor of serial rape because of the loss of bodily autonomy in the last few days.

Now, the warden testified here that the

goal was to staff all observers with only female staff. The State doesn't guarantee this, but they do say that they will strive to have only female staff observing her. However, according to Dr. Brand, while men observing her would be much worse, women observing her in all of these close and personal and intimate activities is still going to be triggering for someone with this history of sexual assault. But if they're able to achieve only women observing her, I think that Dr. Brand admitted that the impact of that triggering would be lessened during the observation period.

But regardless, she will be moved. Christa Pike has spent the last 30 years in one unit of one prison, except for very short trips out either for medical reasons or for a court hearing. But it's important, I think, to understand that her world is that very small one-unit place in a women's prison. She will be transferred in the last 24 hours of her life to a men's prison that she's never been to before into a setting that's completely different and with guards and observers that are unknown to her. And that's certainly going to -- and that's certainly

going to -- and that would happen regardless, but given her history, that's going to be traumatic.

The part of the process that cannot be ameliorated is the most traumatizing for her. The lethal injection protocol requires that Christa be placed on a gurney and strapped down before the IV team works to achieve venous access or if they're unable to, to possibly set a central line because of her small and compromised veins. This process may last longer than it does for other inmates. Dr. Brand testified that it is very likely to cause Christa Pike to relive her past sexual trauma of being raped, experiencing those rapes all over again as the State inserts lines into her to bring about her death.

Because of this traumatic injury -- because of her traumatic history as a serial victim of sexual abuse, Christa will involuntarily experience this super added terror and psychological pain as the State executes her. Your Honor, that super added pain and that terror and torture violates the Eighth Amendment. And it's what Christa Pike presents with against her own will. It's not like she manufactured these events and it's not like she's consented to them. These

things happened to her and will cause her to be tortured at the time of her execution, however long it takes to get a line established and to get the drugs flowing while she's strapped to this gurney surrounded by staff and unable to move.

The third issue, given Ms. Pike's allegedly small and compromised veins, whether achieving peripheral access pursuant to the current lethal injection protocol would make it sure or very likely that the challenge protocol will cause Ms. Pike serious illness and needless suffering.

Dr. Van Norman is an anesthesiologist with over 30 years of clinical experience. She has placed thousands of peripheral IVs and thousands of central lines. She reviewed Ms. Pike's medical records and found multiple risk factors for difficult peripheral IV access, including her obesity, her scarred veins from repeated blood draws, her thrombocytosis and her apparent small veins indicated by the use of a 23-gauge needle for blood draws. She also noted that most of the blood draws are from Ms. Pike's hand, which is a painful place to draw blood. And therefore the hand is only used, typically, when larger veins

are unavailable. And we have, as indicated with the last witness, no information on the education and experience of the execution personnel. The witnesses that -- I think one of the disconnects in some of these proceedings is that all of our medical experts practice in clinical settings where, as you said and in your questioning with the nurse, the goals are completely different. And the practices and the availability of expertise is probably very different.

The facts that some of the experts, such as Dr. Mansour or the nurse at the end, talk about don't present problems are because they are in a clinical setting where they do this work all the time. And we have no knowledge, although what we have are the qualifications listed in the protocol, that do not include people like Ms. Campbell who are experienced, vascular nurses that do this work all the time. Therefore the fact of Christa Pike's small and compromised veins is a little different in the execution chamber. And that will cause the venous access to be more difficult, potentially prolonging the time needed to achieve that and prolonging the time which she may be in the terror of her sexual abuse.

Dr. Van Norman also explained that if too large a needle is used it can cause the vein to tear. If too small a needle is used, there is a significant risk the vein will rupture because the fluid will exit the needle at an exponentially higher rate. This can lead to extravasation, which has been testified to by many of our witnesses. And the extravasation of pentobarbital will not only reduce its intended impact, but also create an extremely painful burning sensation. Dr. Van Norman compared it to Drano, that it's that caustic and it can cause significant burns. This would not only prolong her death because the drugs aren't getting where they need to be, it will also make it more painful because they will be -- the drugs will be burning the tissue around her veins. So, it's any unsuccessful blowout or any of those complications have a very strong risk of making this a much more torturous process.

And because Christa Pike presents with veins that have been drawn on many times and that are difficult to access, once again, is not something that she can control. It's something that she presents with and that the State may or may not be, because we don't really know the

qualifications, be able to reduce her pain and suffering. But there is certainly an increased risk of pain and suffering.

Now, Dr. Mansour testified that he'd be less worried about Ms. Pike's thrombocytosis if the IVs were set in her elbow veins. But that kind of begs the question of why are they doing draws in her hands, which is more painful, if the elbows work. Now, I heard Nurse Campbell say that one of the times -- I think it was one, I'm not sure if I get it right -- but that most were in her hand. That's what the records indicate.

And finally the fourth topic of factual inquiry for this Court is whether Ms. Pike's proposed alternative methods of execution would significantly reduce a substantial risk of severe pain. Ms. Pike had advanced two alternative methods for carrying out her execution besides the present lethal injection protocol as written that the State of Tennessee has adopted. These would be for the State to recognize the difficulty the execution team will have in placing two patent peripheral IV lines and instead administer pentobarbital directly through a central line that would be placed by a physician competent to

perform the task at the time of her execution.

This alternative -- and I know the State quibbles about whether it's an alternative method, but I do believe the United States Supreme Court, the spirit of what they've been looking for in proposing alternatives is for the inmate to identify an issue that may cause an unconstitutional execution and identify what its possible solution would be. So even though this isn't necessarily an alternative method in that it's still lethal injection, it's still following the spirit of the United States Supreme Court that has said capital punishment is constitutional, therefore there must be a constitutional way of carrying it out.

The alternative of starting with a central line is an alternative that makes the execution less -- less torturous and less needless pain and suffering that she would undergo. And it's not -- if time is part of the problem while she's strapped down and being executed -- which I believe Dr. Brand's testimony establishes that time is a problem. And I think most of us would understand that anytime someone is laying there has got to be an awful amount of time.

Given the fact that she has difficult veins, given the fact that this may be a protracted period of time, the placing of a central line is an alternative that is -- that would lessen that time and is available and easily implemented. Almost all of the doctors who testified to this Court that had experience doing central lines would be competent to do that. Now, some of them may not be willing to, but there are doctors -- as evidenced by the fact that a doctor is in the protocol, there are doctors willing to participate in executions. A doctor who is competent in placing a central line is the alternative Ms. Pike has identified. And that's readily available and easily implemented and would make this a much faster -- and I don't like using the word humane, but it would certainly lessen the pain and suffering.

Dr. Van Norman and Dr. Goldstein both testified that placing a central line involves accessing one of the larger veins, such as the carotid vein in the neck. They testified that a physician competent at the procedure would detect this vein with the use of an ultrasound. They testified that the experience a physician must

have in order to be competent at setting a central line isn't just that they have had a medical education and been trained in doing it once. The key to competence in this procedure is that they use the skill on an ongoing basis. They maintain a sufficiently frequent practice of setting a central line that their skills do not lapse.

Now, Dr. Van Norman gave us an example of what her hospital requires as competence. And that's a guideline. I'm not sure that everyone -- certainly not every hospital probably has the same guidelines. But the bottom line, the central controlling factor is that the professional, the physician, have ongoing recent practice at the skill. Just like so many skills that we -- if we don't use it, we lose it. So, that's the alternative on central line.

The other alternative that Ms. Pike has proposed, because the United States Supreme Court has required in order for these suits to go forward that there be a proposal of an alternative method of execution, is hanging. Now, this other alternative has -- the testimony in this Court demonstrates that it's a very old practice. It's something that death -- execution by hanging has

been around for I think thousands of years. And certainly it has been used fairly recently, certainly in my lifetime, at least. I know I'm one of the older ones here. But it's been used in Britain up until the 1960's and more recently in the State of Washington in the 1990's. And of the two cases where someone was executed by judicial hanging in Washington, the testimony that State was able to achieve transectional -- a transection of the spinal cord, in which case death was instantaneous.

And that's -- comparing that to the strapping onto a gurney, searching for a suitable vein, inserting an IV, injecting with lethal injection, certainly would lessen the pain and suffering of the condemned inmate. And in cases where transection of the spinal cord doesn't occur, the evidence is that death by strangulation happens fairly quickly. In the one case in a medical review that was cited by Dr. Kelly, unconsciousness was achieved in thirteen seconds. I believe her testimony was up to a minute for unconsciousness. This timeframe is much less than the timeframe involved in the lethal injection process.

In addition, with hanging there is no need to strap Ms. Pike to a gurney, no need to prod and find venous access, and no need for her to lie there reliving her sexual assaults by the involuntary actions of her traumatized brain. Hanging, which is not unconstitutional and has even been mentioned by the State as a constitutional form of hanging -- or of execution is a readily available alternative that would significantly reduce a substantial risk of severe pain and torture. And in this case, that severe pain and torture as testified to by Dr. Brand is almost certain to happen.

Your Honor, those are my arguments.

THE COURT: Thank you very much.

MR. AYERS: May it please the Court, Christa Pike has not shown a likelihood of success on the merits of any of her arguments for a stay. And that is why we're here today. The Supreme Court referred five issues, now four, to this Court to help and form its determination of whether or not to grant a stay of execution so that Ms. Pike could pursue collateral litigation that may affect the method and timing of her execution.

Now, to prevail, Ms. Pike has a double burden. First, she has to establish that execution under the current protocol -- not just any protocol, not just lethal injection in general or execution in general -- presents that a risk that is sure or very likely to cause serious illness and needless suffering and give rise to sufficiently imminent dangers. And that's language from Tennessee Supreme Court case of West vs. Schofield and it's quoting the United States Supreme Court of Glossip vs. Gross.

And it's important to remember when thinking about this part of Ms. Pike's burden that speculation as to what could go wrong during an execution is not sufficient to meet that burden. Her job in this hearing was to produce scientific evidence that would allow this Court to make this conclusion that there would be a substantial risk of -- that will -- or that is sure very likely to cause needless suffering. But really, all she has done is present speculation about bad things that could happen. And we'll get into that issue by issue as we go through them.

Second, she has to show a feasible and readily implemented alternative method of

execution. And that method of execution also has to significantly reduce a substantial risk of severe pain. She also has to show the State has refused to adopt that alternative without any legitimate penological reason. Now, that's language from the Supreme Court case of Bucklew that was discussed earlier. She has not done that either. These two burdens add up to what the United States Supreme Court calls an exceedingly high bar to prevail on these kinds of method of execution challenges. And to date, no one, not a single person has ever succeeded at either the Tennessee Supreme Court or the United States Supreme Court on what Ms. Pike is trying to do today. If she succeeds, she will be the first.

Now, the standard under the Eighth Amendment which governs these proceedings is not a painless execution. That's well established. And the Eighth Amendment also does not require general anesthesia in a lethal injection execution. That's also well established. Pike has not come close to meeting her burden for any of the issues.

We'll begin with the first, dealing with Ms. Pike's diagnosis of thrombocytosis and whether or not it's going to make peripheral IV access

sure very likely to cause serious illness and needless suffering. Well, several experts testified on this issue, but only one hematologist was called. And that was Dr. Mansour. Hematologists are the sort of doctors who have expertise managing thrombocytosis, diagnosing it and taking care of patients. And Dr. Mansour testified that based on a review of Ms. Pike's medical records he saw no indication that achieving peripheral IV access was going to pose any kind of problem. He testified that based on the medical records of her platelet counts, which he was very familiar with. There was no risk -- I should say there was a low risk of any kind of thrombotic event, including clotting at the IV site. He and Dr. Antognini also testified that they saw no risk of excessive bleeding at the IV site due to thrombocytosis.

Now, opposing Counsel attempted to play a little game of gotcha with Dr. Mansour, showing him some medical records of some platelet counts that he did cite in his report. But not a single one of those platelet counts moved the needle. Not a single one of them showed, to his view as a seasoned hematologist with four years of

experience that she is at high risk for any kind of adverse interaction with IV access.

Plaintiff's experts, on the other hand, Ms. Pike's experts, cited no sources for their belief that her thrombocytosis was going to pose a risk of IV access issues. Again, Ms. Pike's burden was to produce scientific proof that she is sure or very likely to suffer severe pain as a result of this thrombocytosis. And she failed to establish that it carries anything beyond a minimal risk.

The best she could do was to rely on the testimony of Dr. Van Norman, who was testifying outside her expertise as an anesthesiologist and that with a failing track record in Tennessee execution litigation. She has simply not carried her burden here and the Court can rule today that she has failed to prevail on issue one.

Now, as for issue two which deals with Ms. Pike's cited history of sexual assault and PTSD. The State does not dispute the terrible things that Ms. Pike suffered. I think everybody in this courtroom wishes that those things had never happened to Ms. Pike. I think we all wish that we were not here today and that she was not

on death row. Certainly none of us take any pleasure in this. And so it's certainly not the State's intention to try to minimize the suffering that Ms. Pike has experienced. But that's not the issue before the Court. The issue before the Court is whether, as stated in the Supreme Court's order, is whether Ms. Pike's transport to Riverbend and observation by male guards would cause her serious suffering or sure to very likely do that.

Now, the evidence that came out on this point established that Ms. Pike will not be moved to Riverbend until 24 hours at the earliest before she is executed on September the 30th. The Department of Correction witnesses also testified that they will make every effort to staff her observation at Riverbend with female guards. No evidence was introduced to contradict these facts.

Ms. Pike's psychological expert testified at length about her opinions of what the effects of observation would be. And she testified that any close observation by male guards or by female guards would cause issues with Ms. Pike's mental health conditions. She also testified that extraction from her cell under any method of

execution would cause mental health issues.

The expert testified that the only way to eliminate these concerns effectively would be to execute Ms. Pike at Debra Johnson Rehabilitation Center immediately after extracting her from the cell where she's been housed for the past several years. But even that would require a cell extraction. That is undisputed.

And officials from the Department of Correction testified as to why this is not feasible. Executions only happen at Riverbend. There are no facilities at Debra Johnson to carry this out. So Ms. Pike's own experts' recommendations are impossible to carry out.

The Court must also consider when examining this issue that psychological harm alone is not sufficient to state an Eighth Amendment violation in this context.

It's no doubt -- no one disputes that every execution is distressing to the prisoner. But what Ms. Pike's expert failed to do is explain how any particular component of the execution gives rise to this enhanced risk of suffering as opposed to just the whole execution itself, which undoubtedly is distressing to anyone.

This theory issue too is essentially an attack on execution in general. It's not an attack on the Tennessee Lethal Injection Protocol as it's written. It's not even an attack on lethal injection generally. Ms. Pike's position here appears to be that any execution protocol would violate her constitutional rights based on her mental health conditions. That is simply not the law. And the Court also can find that she has failed to carry her burden on this issue as well.

Moving to issue three which concerns Ms. Pike's allegedly small veins. Well, there is no proof that she has small veins. It was Ms. Pike's burden to show that. She didn't. There's no pictures, there's no video. None of her experts even visited her to examine her in person. So what the Court is left with is a conclusory statement with no supporting evidence.

Still several experts examined her medical records and made their best conclusions about what those records show. And what the testimony did show is that there are at least a dozen records of phlebotomy. Twelve of those phlebotomy attempts were successful with one needle insertion and one required two attempts.

Twelve of those phlebotomy reports stated that the skin site stopped bleeding as expected and one report simply didn't answer that question.

An anesthesiologist, a hematologist, and a nurse vascular expert all testified that they had reviewed Ms. Pike's medical records and saw nothing indicating that there would be a problem achieving peripheral IV access. Those medical records contain no indication of a failed IV attempt, no indication of any other trouble with needles. So what's left is mere speculation about what could go wrong. And as the Tennessee Supreme Court just explained last week in the Hines case that is insufficient as a matter of law to state a claim for an Eighth Amendment violation. Ms. Pike cannot show a likelihood of success on this.

Now, she attempted to cast doubt on the qualifications of the IV team to place IV access. But what came in, in fact, was that members of this IV team are currently certified to place IVs in the State of Tennessee. That was verified very recently by Assistant Commissioner Thomas. She personally verified that each member of the IV team has decades of experience placing IVs. And that is the single most important criteria cited

by one of Plaintiff's experts as to whether or not someone is going to be able to achieve IV access.

More than that, there were no studies citing -- cited indicating that small veins is even a recognized medical term. And there's no evidence that repeated IV attempts, even if they're necessary, would constitute anymore than the average discomfort tens of thousands of people experience every day in clinics and hospitals across this country. This utter failure to adduce any evidence to show anything more than a possibility of pain due to peripheral IV access dooms this claim.

Lastly, issue four -- and this is a particularly significant issue because as I stated at the beginning, Ms. Pike's burden under the law is to also establish a feasible and readily available alternative method of execution. If she cannot do that, she cannot succeed on any claim before this Court or before the Supreme Court.

And Ms. Pike failed rather spectacularly to carry her burden on this point. She abandoned the 23-gauge butterfly needle wisely after her own expert in the reports declared that it would require a tremendous amount of pressure to push

the amount of fluid through it that would be required and then it could result in complications.

Her own experts also foreclosed any idea of a central line alone as a method because they testified that it's relatively dangerous in Dr. Van Norman's words. And Dr. Goldstein testified that the risk of complications is significant and that the nature of those complications is severe, including organ damage and life threatening arterial bleeding. There's no testimony that these kinds of complications would arise from peripheral IV access.

And that leaves hanging as the only possible alternative that Ms. Pike could prevail on. If she couldn't achieve that in this hearing, all of her claims are out the door. And yet her only expert on this topic was utterly unqualified and unprepared. He based his expertise on a report that stated in bold letters in a disclaimer that AI had been used to write it. Or actually that was an article that he had authored. He could cite no source for his conclusion that hanging causes loss of consciousness in 20 to 30-second -- in the 20 to 30-second range. The Court gave him multiple

opportunities, several minutes to peruse the documents he had reviewed and he came up with nothing. All he did was write a book report, and a failing one at that.

Now, what the experts did agree on is that hanging is an unpredictable way of causing death. In other words, when someone is tied to a rope and they're dropped, no one quite knows how they're going to die. Their head could be taken off, their spinal cord could be snapped, their arteries could be cut inside their neck, or they could just hang there strangling to death. Now, both experts testify that if it's done right, hanging can be instant. But it's not always done right. And it's not easy to do right. And there's been no evidence presented that Tennessee could do it right. There's no evidence that Tennessee has the expertise, the materials to carry out hanging as a method of execution.

Now, the only time frame cited in support of this method of hanging to cause unconsciousness I believe was 13 seconds. But that was based on only one case involving one individual who happened to videotape his own hanging. And that was based on an apparent loss of

consciousness as stated in the literature. That is insufficient grounds for the Court to conclude that hanging offers a substantially less painful alternative to lethal injection.

And this, of course, is even assuming that the first two methods that Pike propose even qualify as methods of execution. It was stated earlier that the spirit of the United States Supreme Court's jurisprudence on this contemplates a central line or an equipment swap or something of that nature as an alternative method. Well, the U.S. Supreme Court doesn't speak through a spirit. It speaks through its holdings. And nothing in its holdings has ever said that an alternative method of execution is anything other than a distinct way to cause death.

Now, hanging is one. But as I previously said, Ms. Pike has not carried her burden to show that hanging is a viable alternative. Now, of course, this issue hinges on a comparison, as the Court previously observed. The alternative has to be compared to the existing protocol. And what the evidence showed about the existing protocol. And what the evidence showed about the existing protocol, lethal injection by pentobarbital, is

that it produces unconsciousness within 20 to 30 seconds. Dr. Antognini's opinion on this topic was supported by scientific evidence which he was able to defend in cross examination. Unlike some of the other experts, he had actually read the reports he cited and could explain them and could explain how they related to his conclusions. He also testified that after that 20 to 30-second timeframe the inmate will be incapable of feeling pain.

And Plaintiff's experts had no reliable scientific evidence of their own to rebut this conclusion. Dr. Zivot repeatedly ducked the Court's questions about how long it would take for an inmate to lose consciousness under a dose of 5 grams of pentobarbital. He had apparently learned nothing since the case of Bucklew where it was noted that he engaged in a similar pattern of evasiveness when pressed on that question. He just couldn't offer a conclusion to the Court on the point. And so the Court is left with nothing but Dr. Antognini's opinion on this topic.

In addition there is no evidence that there is any variability in how pentobarbital causes death. Dr. Antognini testified that within seconds after it's administered it leads to

cardiovascular collapse and essential brain death or EEG silence, as he stated. In the brief time before that happens, the inmate would not feel pain. He did testify that in some cases, there could be mild discomfort from the actual injection of the drug, but that would be no different from the experience of having that drug injected in a clinical setting.

Ms. Pike repeatedly attempted to point to risks of IV failure, such as what would happen if pentobarbital were injected into surrounding tissue, extravasation. But she introduced no evidence that this is sure or very likely to happen. All experts agree this is a possibility. It's a possibility with any kind of injected drug. But specific to this case and this protocol, there has been no evidence to show that that is a likely outcome. Again, all we have is speculation, which is insufficient to carry her burden.

Dr. Antognini also testified extensively about the issue of pulmonary edema. He offered studies and detailed defenses of those studies to explain how pulmonary edema can develop after death. I think that it's fair to say that the experts agree that it's not 100 percent knowable

about much pulmonary edema might occur before death and how much might occur after. They both concede that some might happen before and some might happen after. But there is certainly no evidence to show that it is sure or very likely that pulmonary edema is a side effect of the dose of pentobarbital that's administered under Tennessee's protocol.

There's also been no evidence to show that it is sure or very likely that Ms. Pike's thrombocytosis will lead to pulmonary edema or that it would cause more severe pulmonary edema. Again, it was Ms. Pike's burden to come forth with scientific evidence to show that these issues are sure or very likely to happen. And she has completely failed to do that.

And so in light of these failures, the Court should find that Ms. Pike cannot prevail on any of the issues referred to by the Supreme Court. And the Court can make that ruling today. Thank you.

THE COURT: I had not anticipated this being an argument like for rebuttal, but if you want, I'll let you ...

MR. FERRELL: There's one thing that I

want to clarify for the Court that I think is pertinent to these proceedings. And that is when opposing Counsel got up and immediately started talking about the standing for a stay. And I understand that that's what our motion has been construed as in the Tennessee Supreme Court. When we began challenging what was going on with our suit in Chancery Court before we went to the Tennessee Supreme Court, we were never looking for a stay. The introduction of the amendment to Rule 12 now seems to require that you ask for a stay.

From the very beginning we were looking for a humane way to carry this out and to minimize the time that would be involved in the actual execution. And I think that that has been Ms. Pike's goal all along. And the fact that she has experienced difficult venous access that has been verified by our experts in their testimony of what they think the causes are led her to be afraid that what might happen would be stick after stick after stick that's unsuccessful followed by maybe a central line.

So we began trying to find solutions within the lethal injection process that could

make this a short and less traumatic experience. And that has been our goal all along. And the alternatives we've proposed here especially after consulting with our experts about the butterfly needle and all that is that a central line would be the quickest, least traumatic experience that she would have.

Followed by, when we began looking into it, hanging. And certainly the expert that the State presented talked about the fact that it was transection of the neck of the spinal cord and instantaneous death and would not involve the trauma of lying on a gurney surrounded by people, possibly men -- possibly all men, maybe not. We don't know. But we have been seeking that. And the only way to do that evidently under Rule 12 is to ask for a stay. And that's why we're here and that's why we're under that standard.

But I agree with Your Honor that the question is a comparison and I think that even though the State says psychological problems are not necessarily or have not necessarily been recognized by the United States Supreme Court, the State will not deny that they're very real. And in this case, they're very real and the torturous

aspect is not only very real but sure or very likely to cause tremendous and excruciating psychological distress at the moment of death.

And if this has to happen, which we certainly don't want at all -- you know, obviously we represent Ms. Pike and we don't want her to be executed. But if she is executed, it has always been her goal and our goal to avoid that trauma. And therefore we ask that this Court recognize that and the psychological trauma that would take place and find for one of our alternatives, either the central line that makes it a lot quicker. And, you know, the complications, the dangerous aspects of it -- this isn't a medical procedure to save her life. There certainly are some dangerous aspects, but the reality is that the pentobarbital would get where it needs to go and cause death in a much faster, less torturous way.

And then -- since in order to present a case to the Tennessee Supreme Court, we had to identify another alternative. Our exploration of hanging seemed to address all of those needs of it being quick, instantaneous possibly, and at worst still probably shorter than lethal injection.

For those reasons, we ask that you find

those facts necessary for the Tennessee Supreme Court to grant us relief. Thank you, Your Honor.

THE COURT: Well, I have a few observations because both of you have mentioned things that are probably beyond the scope of my duties and responsibilities here. I've got four questions now that I have to answer, and that's what I'm going to do. But after I answer those four questions, both sides are going to be arguing much of what you just talked about with the Tennessee Supreme Court. And the issue in the Tennessee Supreme Court is going to be whether or not they grant you a stay of execution so that you can pursue your collateral litigation.

In the Tennessee Supreme Court you've got to show a likelihood of success in your collateral litigation or they're not going to give you a stay. And so that's going to be the standard in the Tennessee Supreme Court. Question -- I'll pose they have to decide the likelihood of your success in your collateral litigation, but you have not filed a complaint in the Tennessee Supreme Court that tells them what your collateral litigation is. Apparently, they're going to have to make that decision from a hypothetical

complaint that might exist somewhere out there in the world of imagination.

Every Court I've ever known, if you were filing a request for a stay based upon your desire to pursue collateral litigation you would have to file a copy of the complaint so the Supreme Court could analyze whether you have a likelihood of success. Not for me to decide, but I'm mentioning this to the lawyers because that's probably going to be something that would need to be discussed down the road.

Understanding that this protocol went into effect in January of 2025 and you waited a year to file the collateral litigation challenge here. You weren't asking for a stay, but at the time you filed it, she had a death sentence set nine months later. And so unless you completed your collateral litigation in nine months you were going to eventually have to ask the Supreme Court for a stay. And even before Rule 12 was in existence, the standard required you to show the likelihood of success. So ...

Anyway, these are just issues that are beyond the realm of this Court -- this Master's -- I've never been called a Special Master and

probably never will be again. But, anyway, we're -- is that everything that everyone wants to say?

Then we're adjourned and we will wish everyone, including Ms. Pike, the best of luck in the future with anything that you pursue. And I want to thank the lawyers for their professionalism. You seem to work together and very cordially and amicably and it's been a pleasure to get to meet all of you and to work with you. We know the time schedule and the crunch is upon us. Appreciate you all working under this time pressure. And I will have a finding of fact and conclusions of law on these narrow issues.

Now of you argued things beyond the scope of these questions. I guess that will be subject to your briefing in the Tennessee Supreme Court. I won't necessarily be answering anything that's beyond the scope of these questions. I'll limit it to the questions. And I believe that the answers to these questions are all that the Supreme Court needs to make the determination. And I think they hinted in their order that if they needed more that I'd hear from them. So I don't know what to expect on that. But you'll have my findings of fact and conclusions of law next

Friday, the 21st of August.

We're adjourned.

(END OF PROCEEDINGS)

C-E-R-T-I-F-I-C-A-T-E

I, the undersigned, Karen B. Jinks, Court Reporter for the State of Tennessee, do hereby certify that the foregoing is a true, accurate and complete transcript, to the best of my knowledge and ability, of the proceedings held and evidence introduced at the hearing held in the Criminal Court for Knox County, Tennessee, in the matter of State of Tennessee vs. Christa Pike, on the 13th day of August, 2026.

I do further certify that I am neither of kin, counsel, nor interest to any party thereto.

Karen B. Jinks

Karen B. Jinks

Court Reporter, State of TN