IN THE CIRCUIT COURT FOR CARROLL COUNTY, MARYLAND

STATE OF MARYLAND,	:	
v.	:	
CHARLES DAVID BRIGHTFUL,	:	Criminal No. K-10-040259
HARVEY ALEXANDER CARR,	:	Criminal No. K-10-040331
JENNIFER ADELINE FLANAGAN,	:	Criminal No. K-10-040167
RYAN THOMAS MAHON,	:	Criminal No. K-09-039370
CHRISTOPHER JAMES MOORE,	:	Criminal No. K-09-039569
VALERIE ANN MULLIKIN,	:	Criminal No. K-09-039636
RONALD DALE TEETER,	:	Criminal No. K-10-040300
Defendants.	:	Westminster, Maryland
	:	September 28, 2010

HEARING

WHEREUPON, proceedings in the above-entitled matter commenced.

BEFORE: THE HONORABLE MICHAEL M. GALLOWAY, Judge

APPEARANCES:

FOR THE STATE:
DAVID DAGGETT, Esq.
ADAM WELLS, Esq.
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FOR THE DEFENDANTS:

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I N D E X

WITNESSES: For the Defendant:	DIRECT	CROSS	REDIRECT	RECROSS	VOIR DIRE
Dr. Francis Gengo	34(bd)	91(dd)	135(bd)	149(dd)	10(bd)
	--	125(aw)	--	--	28(dd)
	--	134(dd)	--	--	--
	--	--	--	152(ct)	--

EXHIBITS: For the Defendant:	FOR IDENTIFICATION	IN EVIDENCE
14	11	91
15	49	91
11	139	--

KEYNOTE: "---" Indicates inaudible in transcript.
“*” Indicates phonetically spelled.

P R O C E E D I N G S

THE COURT: Good morning, be seated please.

MR. DAGGETT: Good morning, Your Honor, calling the matters of State of Maryland versus Charles Brightful, 40259, Harvey Carr, 40331, Jennifer Flannagan, 40167, Ryan Mahon, 09-39370, Christopher Moore, 39569, Valerie Mullikin, 39636 and Ronald Teeter, 40300. David Daggett for the State, D-a-g-g-e-t-t and Adam Wells, W-e-l-l-s.

MR. DELEONARDO: Brian DeLeonardo, D-e-L-e-o-n-a-r-d-o on behalf of Mr. Carr and the rest of the defendants.

MR. CRUICKSHANK: Alex Cruickshank, C-r-u-i-c-k-s-h-a-n-k also Office of the Public Defender on behalf of the defender, clients Your Honor, good morning.

THE COURT: Good morning, counsel.

MR. DAGGETT: Your Honor, we have two issues before we get started. Number 1 we just received a call from Deputy Webb who is a DRE in some of these cases and he indicated that he just received a subpoena from the defense telling him to be in court today. Two things, we are going to object to that. We never heard anything about it. And don’t know anything about it. But certainly -- we are letting -- we are stopping what we are doing to allow some of these witnesses to go.

But we are not -- we haven’t terminated our case.

We haven't ended our presentation and so we just don't think it is appropriate -- we haven't heard anything about it. Secondly, it appears that Dr. Gengo is going to be producing some sort of Power Point presentation and we have never received that information. Never been sent to us, we have not received it and I think it is inappropriate to allow him to produce something -- it is a document prepared by an expert in preparation for his testimony and we haven't received it.

MR. CRUICKSHANK: I would like to address the issue of discovery --

THE COURT: Talking about the subpoena?

MR. CRUICKSHANK: The Power Point. Myself and Mr. Daggett and I believe the other parties had talked about Power Points and Mr. Daggett said that he didn't want to review Power Points.

THE COURT: That what?

MR. CRUICKSHANK: He was not going to review Power Points --

MR. DAGGETT: I didn't -- I have never said that -- I have said --

MR. CRUICKSHANK: -- and I will say that I sent a letter to the State's Attorney's Office a number of weeks ago about sharing discovery and that if you had anything that your experts were going to use, the basis of their opinion,

please forward it to my office and I will do likewise. This Power Point I have today is what Dr. Gengo brought on the plane with him that I received, I believe it was yesterday.

But as far as Power Point presentations is concerned, the Power Point is not evidence itself, it is a way in which to communicate to the Court what evidence he has in his expertise that he is going to testify to.

THE COURT: How long is the Power Point?

MR. CRUICKSHANK: Actually, just on issue of the Power Point, the Power Point will actually speed up what --

THE COURT: But how long is it? I mean, is it something that is going to go throughout the entire testimony of the witness or is it just --

MR. DELEONARDO: It is going to be a substantial portion of his time that he is going to go through because essentially it will layout his testimony so that we will be able to step through a lot of pretty dense material in an efficient fashion. And that is essentially what it is. It will be the bulk of his testimony.

THE COURT: But it is not going to contain anything that --

MR. DELEONARDO: Nothing that he couldn’t say while he is here. It is just that it is going to be demonstrative. And the other point I would add -- and again, I had spoken to Mr. Cruickshank some time ago, that is what he relayed to me

and I mentioned yesterday that he was doing a Power Point as well to Mr. Wells that we would be doing a Power Point today and I didn't hear any issues being generated about the fact of not knowing.

So, as far as I am concerned -- I will be calling the witness, so as far as I am concerned, that was the understanding of both parties.

MR. DAGGETT: Well, it really wouldn't have mattered since he didn't have the Power Point anyway.

MR. DELEONARDO: Well, I am just saying that it wasn't --

MR. DAGGETT: Mr. DeLeonardo didn't have the Power Point to give us, so what good does it do to tell us we are going to have a Power Point presentation tomorrow but we don't have it.

MR. WELLS: For the record, it was a day before. Yesterday, I found this out yesterday afternoon.

MR. DELEONARDO: Well, again if there was such a strong objection, if it would have been raised, I would have been more than happy to make sure we got a copy yesterday evening. But based on what Mr. Cruickshank's discussion was, the fact that no discovery was provided to us -- I mean, I haven't objected to a lot of these items coming and --

MR. DAGGETT: Again, Your Honor, that is -- if he doesn't object, he can't then raise -- because we do --

THE COURT: I agree.

MR. DELEONARDO: But on the discovery issues I think it is relevant and --

THE COURT: Well, I am going to allow the Power Point with the understanding that it is just simply demonstrative and I mean, I guess the way I look at it, hopefully it makes easier for me to follow along. Now, let's talk about the thing with Deputy Webb. This is Deputy Webb of the local sheriff's department?

MR. DELEONARDO: That is correct, Your Honor. We were informed prior to calling any of our witnesses that the State intended to call a rebuttal witness. That was Woodward, Officer Woodward or Trooper Woodward I guess, who was in charge of the Maryland DRE program. I am not sure what he was rebutting in that we had not called any witnesses at that point and we are not calling any body but experts in the field who would be qualified to testify to.

I could only surmise that they were intending to try to call him to rebutt my cross examination of their witnesses as to how the protocol was being administered and so, in light of that to be participatory, we subpoenaed as a rebuttal to their rebuttal.

Now frankly I don't think that they should be entitled to have that rebuttal witness because I don't think there is anything that he can rebut --

THE COURT: Well, we won't know that until --

MR. DELEONARDO: Fair enough. But I guess that is why he was subpoenaed in anticipation that if we believe that he needed to be called, that he could be.

THE COURT: When do you plan on calling him?

MR. DELEONARDO: I am sorry, what?

THE COURT: When are you planning on calling him?

MR. DELEONARDO: When?

THE COURT: Yes.

MR. DELEONARDO: Well, we didn't know because we had to deliver the subpoena last week, we didn't know what the timing would be. We are not anticipating calling him now nor in our case, but depending on how --- they were allowed to call rebuttal witness, we may call him.

THE COURT: That is fine.

MR. DELEONARDO: That is the other reason why we did it. We just didn't know at the time and we had to pick a date and we only knew Tuesday was a date at that point.

THE COURT: Okay. All right.

MR. DELEONARDO: That was the other reason.

THE COURT: Anything else preliminarily?

MR. DAGGETT: No, sir.

THE COURT: All right. Now, the State then is continuing at this point?

MR. DAGGETT: No, Your Honor. The --

THE COURT: We still have some defense.

MR. DELEONARDO: Yes, we are still -- we will be calling actually our second witness.

THE COURT: All right.

MR. DELEONARDO: And Defense would call Dr. Gengo. Whereupon,

DOCTOR FRANCIS GENGO

was called as a witness by the Defense, having been first duly sworn, was examined and testified as follows:

THE WITNESS: Yes, ma'am.

THE CLERK: Please have a seat. For the record, please state your full name, spelling your first and last and give your business address please.

THE WITNESS: Doctor Francis Gengo, G-e-n-g-o, Dent Neurologic Institute, 3980 Sheridan Drive, Williamsville, New York 14226.

THE CLERK: Thank you.

VOIR DIRE

BY MR. DELEONARDO:

Q Good morning, Dr. Gengo.

A Good morning.

Q If I could start first of all, I would like to discuss a little bit of your background. Can you share with us your educational background?

A Yes. I -- between 1972 and 1977 I completed a five

year baccalaureate program in Pharmacy at the University of Buffalo. I then went on to Philadelphia where I completed my doctoral training. Upon completion, I returned to the University of Buffalo where I completed a two and a half year post doctoral fellowship in Pharmacokinetics.

MR. DELEONARDO: Your Honor, if I could have marked as Defense Exhibit.

THE CLERK: 14.

MR. DELEONARDO: 14.

(The document referred to was marked for identification as Defendant’s Exhibit 14.)

BY MR. DELEONARDO:

Q I want to show you what I have marked as Defense Exhibit 14. And do you recognize this document?

A Yes. This is a June 2010 copy of my curriculum vitae.

Q Now as far as you -- on your educational background, you had indicated that you first obtained your Bachelor of Science from the School of Pharmacy, is that correct?

A Yes.

Q And can you describe some of the course work that goes into what you received?

A Yes. There were four semesters of basic

pharmacology. There were four semesters of -- excuse me, three semesters of pharmaceutical sciences. One semester of basic pharmacokinetics and one semester of advanced Pharmacokinetics. Two semesters of disease process and pathophysiology. Course work in pharmaceutical compounding, practical lab and pharmaceutical compounding. And I did -- I completed -- there is one required semester on clinical rotation, I actually did two.

Q What was the last part -- clinical --

A Rotation -- clinical rotations in hospitals. Being shed -- being part of a medical team in a hospital. I was a the Millard Filmore Hospital in Buffalo and then I completed a second rotation at the Children’s Hospital in Buffalo.

Q And you said after that you had actually obtained your Doctor of Pharmacy and can you just generally describe the course work that you took there?

A Yes. There were two semesters of clinical pharmacology and pathophysiology and pharmacotherapeutics. There were -- was a semester of statistics. A semester of -- it has been a long time -- clinical research statistics.

Q Did you do any clinical rotations?

A The majority of that program was clinical rotations.

Q And can you describe where that was and what you did as part of those rotations?

A Over a 3 semester period, I did clinical rotations at the University Hospital of Pennsylvania, at the Children's Hospital Pennsylvania, at Hahnemann Hospital in Philadelphia and the VA Hospital in Philadelphia. I also then completed a clinical research semester in the psychiatry department at the VA Hospital in Philadelphia.

Q And you also said that you obtained your post doctoral fellowship in pharmakinetics and pharmacodynamics. What type of course work did you do for that?

A That program was Advanced Statistical Analysis of Pharmacologic Data -- Pharmacologic Research. An advanced pharmacokinetics -- basic pharmacokinetics program and then the majority of that program was in the -- based in the laboratory conducting animal based research which lead to several publications.

Also during that period of time, I was asked and I did begin to lecture in the clinical pharmacology sequence to the undergraduate students.

Q We have heard some of these different terms, can you tell us what clinical pharmacology is?

A Pharmacology is that discipline which deals with the chemical nature of drugs, the pharmaceutical preparations of drugs. The effects that drugs have on living entities including both therapeutic as well as toxic. As well as the pharmacokinetics and pharmacodynamics of that drug. Clinical

pharmacology is the title used when an individual's work in pharmacology is centered in human beings rather than some laboratory or animal based work.

A clinical pharmacologist, the title -- can be used and is used according to the American Society of Clinical -- excuse me, the American College of Clinical Pharmacology. Physicians who do additional course work, additional training in clinical pharmacology and whose work is in human beings, will use the title clinical pharmacologist. PhD and PharmD's whose work is largely involves human beings, can use the title clinical pharmacology.

Q Okay. Did generally physicians receive the same level of pharmacology training that you received?

A No.

Q Okay. Can you describe the difference?

A I have received more pharmacology training and pharmacology experience then the average physician. I have taken more statistics and researched based course work then most physicians. Physicians on the other hand have taken more course work in anatomy, normal physiology, pathophysiology and they have more extensive training geared towards the diagnosis. First the diagnosis and then the subsequent treatment of a disease.

One entity would be drug treatment. But obviously a physician is trained in more than just drug treatment of

the disease.

Q I understand that that is just an area that you concentrate very heavily?

A Drug treatment of a disease, yes.

Q Okay. Now in addition to your background, you mentioned a few times that you have actually taught -- can you tell us the various academic positions that you have held and --

A I was -- my initial academic appointment at the University of Buffalo was Assistant Professor of Pharmacy. I lectured in the school of pharmacy. I was occasionally -- each semester I was occasionally invited to lecture in the school of medicine. I -- the courses that I taught in, as a guest lecturer were courses were what I taught about was drugs used to treat neurologic disease or drug effect on the central nervous system.

I was brought up for an award of tenure and promoted to Associate Professor of Pharmacy with tenure. At that time, I also received the appointment, Associate Professor of Neurology in the School of Medicine and I received a courtesy appointment in the Department of Neurosurgery, obviously I don’t do surgery but I would on a somewhat regular basis, lecture to neurosurgery residents about the use of medications in patients who have acute neurologic problems that are treated by neurosurgeons.

Q How long generally have you held these various teaching appointments?

A I started in I believe January -- I believe my appointment at the University started in January 1982 and it continues to be current.

Q And how about as to the various other departments, you said that Clinical Associate Professor of Neurosurgery at the School of Medicine?

A I continue to be Associate Professor at the Neurology School of Medicine and Clinical Associate Professor of Neurosurgery.

Q Now, as far as your current employment outside of teaching, where do you currently work?

A Since -- again since 1982, January 1982, I began my practice at the Dent Neurologic Institute.

Q Can you tell us what that is?

A The Dent Neurologic Institute is a -- it has evolved. It has changed since I first joined in 1982. It is currently a large academic private practice in neurology. We have I believe the current count are 13 neurologists, one psychiatrist, one neuro psychologist, two clinical pharmacologists and the activities that the Dent Neurologic Institute is involved in, is first and foremost patient care.

Secondly, teaching. We have clinical -- we have students on clinical rotation at the Dent Neurologic

Institute from various departments and various schools on a constant basis. And then also research. We are currently involved in a large number of clinical pharmacology trials. We also conduct -- not me personally but we also conduct a lot of cutting edge neuroimagining research as well as research in treatment of brain tumors.

Q And you said as part of the rotation students would go through, do you teach students from the school of medicine?

A Yes, I do.

Q And school of pharmacy?

A Yes, I do.

Q How about school of nursing?

A Occasionally. Occasionally it is nurses who are working towards their nurse practitioner program and need to be on a clinical rotation.

Q Your position at the Dent Neurological Institute is -- did you say you are the director of the Neuropharmacology Division?

A Yes.

Q And can you tell us what neuropharmacy is?

A Neuropharmacology is the same definition that I gave for pharmacology only limited to drug effects in the central nervous system.

Q And in your responsibilities in neuropharmacy, what

are some of the things you do there?

A I was appointed Director of Neuropharmacology when I first started. I was subsequently appointed as Director of Clinical Research for the Dent Neurologic Group, that is the practice group. And most recently I was elected Chief Science Officer for the Dent Neuroscience Research Center. That is the non-profit entity for which grant applications are made.

So in that context, I am responsible for all of the clinical -- not -- I am not conducting all of the clinical research but administratively I am responsible for the clinical research that is conducted at the Dent Institute.

Q What about in your actual clinical duties, do you see patients?

A Yes, I do. Everyday.

Q And when you see patients, can you describe for us what it is that you do with the patients, what your role is?

A We have our practice set up into neurology sub-speciality clinics. So there is a clinic and a group of neurologists who see only epilepsy patients. There is a neurologist and a psychiatrists who see largely dementia patients, Alzheimer’s patients. A psychiatrist on certain days sees only substance abuse patients.

I participate in these multi-disciplinary clinics and my involvement is usually along the lines of, the patient

is always -- the initial consult is always with a neurologist or psychiatrist. Their follow up visits can be with a nurse practitioner or a physicians assistant.

In those patients where they seem to be on either an extraordinary number of medications, they have really complex medication therapy or they are just not doing well. Those patients are sent to me, I see them in consultation. I see them in my office for what is called medication therapy management.

I will look at the medications that they are on and the context of their complete medical record. I will look at the medications that they are on in the context of what am I observing when I interact or when I examine this patient today. And I will provide a consultive opinion as to the appropriateness of the medications that they are on. Is there -- and for each of their medical problems, because remember they are coming to us for a neurologic problem but they are also hypertensive, dyslipidemic, diabetic and on and on and on.

So I will provide an opinion as to evidence -- specific evidence of efficacy for each of the medications around and the blood pressures under control or it isn’t. Specific evidence of toxicity. The patient seems to be complaining of numbness and parasthesis, which is expected with the medication that they are on, that reduces their

headaches. We can use a different medication and get around that.

I identify situations where there is a redundant medications. Two medications that do the same thing where only one would be necessary. And then medications that are producing antagonistic effects. Dementia patient who is taking Aricept to help improve their memory or to preserve their memory. They are also taking a antihistamine which will cause memory problems.

It is like driving with one foot on the brake and one foot on the gas. So I will provide that report to the physician who sent me the patient and then that physician will either take my recommendations and act on them or take my recommendations and not act on them. I act in a consultant role.

Q Okay. And --

A I do see patients about 20 percent of the patients that I see, I will see back for a second or third visit.

Q Now, as far as do you see any patients with drug abuse issues or drug abuse history?

A Yes.

Q Can you describe that?

A Well, we have a substance abuse clinic. Given the demographics of where we practice, the majority of the patients we see are -- have problems with Opiates. We do see

however, cocaine abusers. We see pretty much everything but the majority would be Opiate dependant patients.

Q And what do you do as to those patients? Are you involved with the overseeing of those patients?

A Yes. When those patients come in, we primarily use Suboxone on those patients and the patient will sign a Suboxone contract. I will see the patient. I will do a complete medication reconciliation just so that I know in addition to the Suboxone what else are they on. I will do pill counts for both Suboxone and other potentially problematic medications that they are on.

We do a urine test at every visit. And make a determination as to whether to continue on the Suboxone clinic because they are complaint and doing well or to first warn them and then release them from our clinic because they are not living up to their end of the contract.

Q Now in addition to that, do you have any involvement with a toxicological laboratory or have any oversay of any laboratories?

A We have a laboratory within the Dent Institute. It is a clinical lab, not a toxicological lab. It is certified by the New York State Department of Health.

Q And what is your role at the lab?

A I am the laboratory director.

Q And we talked a little bit about some of your

research background. If we could get a little bit more specifically into that. How long have you generally been involved in scientific research?

A I believe the first paper that I was included on as an author in a peer review journal, was the result of work I did as an undergraduate.

Q And you already indicated that your position of Chief Science Officer has you oversee all the research that is produced from the Dent Neurologic --- Science Research Center, correct?

A From a 20,000 foot perspective.

Q Sure, understood. You also have had prior positions have you not, in clinical research?

A Well, technically I still hold the title Director of Neuropharmacology and Director of Clinical Research.

Q And prior to that, did you do any research director at Millard Fillmore?

A Yes. Many years ago the Dent Institute was based out of the Millard Fillmore Hospital. We were located physically within the Millard Fillmore Hospital and I was appointed the Director of Clinical Research for a sleep center or a sleep lab that was within the hospital.

When we moved to our own private building out of the hospital, I relinquished that title.

Q Now as far as different affiliations or associates

that you have in the field, can you describe for us what professional associations you participate in?

A Well, I am a member of the American Society of Clinical Pharmacology and Therapeutics. I was originally a member of the American College of Clinical Pharmacology. I was subsequently elected Fellow in the American Society of Clinical Pharmacology. I am a founding member of the American Association of Pharmaceutical Sciences. And also a member of the American College of Clinical Pharmacy.

I participate in national meetings -- I have participated in national meetings over the years of many other professional organizations. American Academy of Neurology, the most recently -- the outside of those -- the American Heart Association International Stroke meetings.

Q Okay. And as for --

A But I am not a member of those.

Q I understand. As far as the American College of Clinical Pharmacology, you said you are a fellow, what is that? What does that mean?

A It is based on a review of a dossier submitted, the kinds of things that are looked at are research contributions, service contributions, general advancements in the field.

Q Okay. And have you received any awards from them as well?

A Yes. I was fortunate enough to receive the McKeen Cattell Award.

Q And what is that?

A It is an award given for what is felt to be the most impactful manuscript published in their journal on an annual basis.

Q Using that, let’s move to publications. Have you contributed for any books in the field of pharmacology? Clinical pharmacology?

A Yes.

Q And can you tell us what books you have actually been published in?

A Most recently I published a chapter -- I don’t recall the exact name of the chapter but it had pharmacology in the title. I was asked to provide a chapter of clinical pharmacology for a text book entitled Neurology in Clinical Practice. I also contributed a chapter in a book Clinical Pharmacokinetics and I also co-edited a book Drug Effects on Human Function.

Q And these are books that are accepted in the field and relied on in the field?

A I believe so, yes.

Q Now as far as peer reviewed and published works, I am not going to go into the significance of that. I know the Judge has heard that, have you had the occasion to be peered

reviewed and published?

A Yes.

Q Do you know approximately how many times?

A 65 or so.

Q And those are all in established journals in the field, you said approximately 65?

A Yes.

Q And the subject matter for these, can you give us -- and I know it is difficult with so many, but a general description -- obviously -- general description of the type of things that you published in?

A Sure. Prior to 1982, I was publishing in an array of various fields. I was always a junior author and I was published in an array of various fields. Since I finished my post doctoral fellowship and took my position at the Dent Neurologic Institute, almost all of the work that I have published has had to do with the effects of one drug or another on the central nervous system or the clinical pharmacokinetics of drugs that affect the central nervous system.

Q And have you actually published peer reviewed publications -- have you actually done documents that have dealt with the effects of different drugs on driving?

A Yes.

Q And you know about approximately how many you have

actually done in that area?

A I believe three.

Q As far as we talked about the idea -- I know you have mentioned that you have actually presented at various academic groups -- professional academic groups, other than the ones that you have been a member of do you recall some of the other ones that you have actually been invited to make presentations?

A Well, relevant to what is going on here --

Q Relevant to --

A Relevant to what is going on here today, I was invited to give a presentation at the National Institutes of Alcohol and Alcohol Abuse on the clinical pharmacodynamics of alcohol. I was invited to give a presentation to the New York State Governor’s Traffic Safety Committee with regard to drug effects on alcohol. And I was very fortunate to be included as part of a panel of experts -- this was going back 15 or 20 years or so ago.

There was a group out of Northern Europe, Ramikers is one of the key individuals, but there is a group of two or three investigators who regularly published the effects of drugs on driving and the paradigm that they used is one where they have a course. And embedded in the roadways of that course are electronic sensors. The automobiles they use are dual controlled, so the studies they do actually you dose an

individual, you get them behind the wheel and you look using sensors in the road at various end points.

They put together a symposia and publication and they invite a number of experts from around the world to try to categorize drugs as how they might effect driving. I was fortunate enough to participate and be one of the reviewers in that.

Q Have you previously given presentation at the National Institute of Health as well?

A Well, National Institute of Alcohol and Alcohol Abuse is the same as NIH. It is part of the NIH.

Q What about the American Academy of Neurology.

A Yes.

Q Have you done that more than once?

A Yes.

Q Now you previously testified as an expert in other states, correct?

A Yes, I have.

Q And do you know approximately how many?

A 8 or 10.

Q And have you testified previously for both the prosecution and the defense?

A I have.

Q And I assume, have you testified -- what areas have you been accepted as an expert in?

A Clinical Pharmacology. Analytical testing of alcohol and drugs. Standardized field sobriety testing. There may be others but largely clinical pharmacologist.

Q Okay.

MR. DELEONARDO: All right, Your Honor, I am going to offer Dr. Gengo up as an expert in the field of clinical pharmacology, pharmacokinetics, and pharmacodynamics and clinical research design ---.

THE COURT: Voir dire?

MR. DAGGETT: Yes, Your Honor.

VOIR DIRE

BY MR. DAGGETT:

Q So you are not a doctor, is that correct? A medical doctor?

A I am not a physician.

Q Thank you. You do not perform physical examinations on patients?

A I do.

Q What kind of examinations do you do?

A I use elements of the neurologic exam to assess magnitude of drug effect in patient’s who I am asked to see.

Q Okay but as far as taking the other parts of the physical exams, you don’t -- you are not doing anything else besides just -- the neurology end of it?

A I do elements of the physical exam, not for the

purpose of diagnosing disease, but for the purpose of assessing therapeutic or toxic effects of drugs in that patient.

Q Then what do you do? What do you do?

A If a patient is on a anti-hypertensive, I will measure their blood pressure. If they complain of dizziness on standing quickly I will do orthopedic blood pressure changes. If the patient has an unstable gait, I may do tandem walking. I may look -- defending on the medications that they are on, and the diseases they have, I may do horizontal gaze nystagmus. If a patient is having trouble speaking, I may do a mini mental status exam.

If a patient is -- if a patient is being treated with either Warfarin or an anti-platelet agent like Plavix, I will do a cursory exam with their casual clothing on, of course. But a cursory exam to see do they demonstrate easy bruising or bruising in excess of the trauma that created the bruise.

Q So all of these examinations that you do -- all these different components, they have all been around for a long time and have been excepted as valid. They are accepted in the medical community as being valid examinations or tests, correct?

A Yes.

Q Now, you -- when you were listing the places that

you been asked to speak and some of the presentations have been made, I noticed that you neglected to mention that you have -- were a guest speaker or featured speaker at the National College for DUI Defense?

A I have been, yes.

Q Well, you didn’t mention that one though.

A No, I didn’t.

Q And you said that you testified as an expert in clinical pharmacology and field sobriety tests, the effects of alcohol and drugs on individuals. I also noticed that you never -- that you did not list that you testified as an expert in clinical research. So what exactly -- as far as clinical research, what was the last thing that you actually did in that particular field?

A Yesterday before I left my office, we submitted a protocol to the University of Buffalo’s Human Research Committee for review. And on Saturday we submitted a manuscript for --

Q You said we sir, I am asking you. You said -- I think you said earlier you supervised some people from 20,000 feet, I believe is what you said.

A No research project -- research projects are rarely a one man show. The group that I work with -- the four or five people that I work with -- I am referring to my own specific research team, we were in on Saturday and we

completed a manuscript which has now been submitted for review and as I said yesterday, we completed a protocol which has now been submitted for review by the Human Research Committee at the University of Buffalo.

Q And what is your particular role, what do you do?

A I -- the process is generally one of -- we will have our research group meeting. We will talk about a specific topic, if somebody raises a question of hey do we know whether or not patients taking Prevacid versus Protonix have less of a likelihood of it interacting with Plavix. You know there is an implication but nobody has actually studied that.

Well, what about -- what did it have to do with whether or not they are a weak metabolizer of SIP-3A4? Well, that has not been specifically measured either. Well, let’s put a protocol together. The protocol will be handed around to everybody, each will make their modifications. We will all agree that this is going to be the final protocol. I will write an informed consent for patient safety. That gets submitted to the IRB.

Similar process for when researched data has all been collected. The first step is let’s get together as a group and decide what is the appropriate statistic for analyzing this.

Q And you have been published when -- when were you

published regarding clinical research?

A That is clinical research.

Q When were you published?

A I believe our last publication was 2010.

Q And that includes --

A If not, 2009.

Q You don’t list that in your -- is that listed here in your list of publications?

A Well, for all of the 65 plus peer reviewed papers that are in my resume, all of them went through that same process.

Q But as far as the actual area of clinical research --

A Well, as of June 2010, our most recent publication was in clinical pharmacological --

Q Sir, you keep saying ours, I am asking you.

A All right, mine.

Q Thank you. When I ask you -- I am asking you specifically, not about your organization. I am talking about you.

A I am not sure I understand the question.

Q When were you specific -- in which one of these were you specifically either in book chapters, publications in peer review journals, anything, specifically related to clinical research?

A All of the peer reviewed publications.

Q But you have never testified as an expert in the area of clinical research?

A I believe I have.

Q You didn’t -- you didn’t say that when Mr. DeLeonardo asked you --

MR. DELEONARDO: Your Honor, I would object. He did say that.

MR. DAGGETT: He did not say that. He said clinical pharmacology, field sobriety tests and the effects of alcohol and drugs on an individual.

THE WITNESS: Can I respond?

THE COURT: Yes.

THE WITNESS: When you said clinical pharmacology, that includes both the practice of as well as conducting research in clinical pharmacology.

MR. DAGGETT: All right.

BY MR. DAGGETT:

Q I think if you would explain your answers a little bit better, it might make things go a lot smoother here.

MR. DELEONARDO: Objection.

MR. CRUICKSHANK: Objection, move to strike.

THE COURT: Sustained.

MR. DAGGETT: Your Honor, I have no objection to him being found to be an expert in clinical pharmacology, but

I do not believe he has testified enough to indicate that he is an expert in clinical research.

MR. DELEONARDO: Your Honor, I think it is self evident that he has extensive experience in this. He is in a current position for this. I know he hasn't gone I guess quite as much as Ms. Spirk who is qualified in clinical research. I think it speaks for itself that he is eminently qualified. Not only has he done over in excess of 65 publications peer reviewed articles in the field.

Even in the field of driving and drugs, holds positions and is responsible for overseeing proper research design and validity and has been accepted as an expert in those areas.

THE COURT: What was his -- pharmacology, clinical research and what was the other area?

MR. DELEONARDO: Well, I think it would probably be sub-summed of that but I indicated pharmacological dynamics and pharmacokinetics. Which is basically the effects the drugs have on the body. Which I think would be actually sub-summed by clinical research, clinical pharmacology.

THE COURT: All right. I will -- the Court will accept Dr. Gengo in the areas as proffered or tenured.

DIRECT EXAMINATION

BY MR. DELEONARDO:

Q Now, Dr. Gengo, one of the things you haven't done

before, am I correct, is testified in what is called a --- hearing as to a drug --- expert program, is that, correct?

A Until today, no.

Q And you have had an opportunity however, to look at the research in this area and the pharmacology research in this area, is that correct?

A Extensively.

Q And one of the things, if I could approach, I will show you what has been previously marked and admitted as Defense Exhibit 8. I want to ask you, have you previously had a chance to review that report from Dr. Janofsky?

A I have.

Q And the calculations that he -- both as to specificity, sensitivity, likelihood ratios and his analysis, are those things that you do on a regular basis?

A Yes.

Q And having -- did you also have an opportunity in all of those studies that he cited, did you actually yourself go and review those studies?

A I have.

Q And how is your opinion in relation to Dr. Janofsky?

A I agree with Dr. Janofsky.

Q You agree as to the conclusion of each of those studies?

A I do.

Q Now as to the last one that he cites in there, there is a study that was entitled “Drug Identification Performance on the Basis of Observable Signs and Symptoms”, do you recall that?

A It is the Shiner paper?

Q That is correct.

A Yes.

Q And you had an opportunity to review that in great detail is that not right?

A Yes.

Q And did you have -- I know you prepared an exhibit with some of the information from that in your Power Point, would it help you to step through that to explain to the Court what you found as to the Shiner Study?

A Yes.

Q Okay.

MR. DELEONARDO: Your Honor, I would ask if he could begin to use his slides to show what he found as to the Shiner Study in particular?

MR. DAGGETT: Your Honor, I am going to object. This is a report generated by an expert that has never been provided to us, therefore we have not had the opportunity to prepare for it. And for him to just go through and present his expert -- I mean, at least with Dr. Janofsky, they gave

us his report weeks in advance and we had the opportunity to review it.

Here it is a report prepared by an expert that we have not received.

MR. DELEONARDO: Your Honor, again, he is testifying -- everything that he is going to testify to, he could do obviously -- it is just a demonstrative exhibit. It is no different than if I were pointing to the page, it is just going to make it easier and I think quicker for the Court. It is not a report. He is going to testify as to those findings either way.

MR. DAGGETT: You can say that about any expert opinion. I mean, in the expert report and if that were the bench mark for determining whether it is admissible or not, there would be no need for the rule.

THE COURT: All right, objection noted. I am going to overrule it. I have view this as simply a tool to assist in the presentation of the doctor’s testimony.

BY MR. DELEONARDO:

Q Okay, Dr. Gengo, if you could -- if we could turn to your first slide and could you indicate what you found from the Shiner Study and what you are showing us now?

A These are data that I extracted from the Shiner Study as did Dr. Janofsky. And the Shiner Study was 300 observations and subjects who are dosed with either

Tetrohydrocanabinol -- they were dosed on multiple occasions and on some occasions Tetrohydrocanabinol, Alprazalem which is a benzydiazepene, Codeine which is a narcotic analgesic, Amphetamine which is a central nervous stimulant or placebo. It was blinded such that neither the subjects nor the raters, the DRE Raters knew what they were taking.

Q Is that a typical requirement for published peer reviewed research?

A It is.

Q Okay. And you indicate the boxes for unimpaired and impaired, why is that significant in your analysis of the study?

A The first column is -- indicates whether or not the subject was dosed with placebo or actual drug. The second column is whether or not they were judged impaired. Those are the individuals judged impaired by the DRE technician. The next column is those judged impaired by the DRE technician.

And when one does the statistics, there is a likelihood ratio of only 1.04 which is just a tiny bit better than 50/50 chance of flipping a coin. More --

Q If I can stop you real quick right there --

A Sure.

Q On the likelihood ratio that you have there, did Dr. Janofsky have the total likelihood ratio for all drugs?

A I didn't see it, no.

Q Okay. He broke it down by drug?

A He broke it down by drug.

Q Is the 1.04, is that for the total success of all of the drugs?

A This does the calculation just on the basis of, did the subject get a drug or did the subject get placebo.

Q So --

A All drugs considered the same.

Q And for likelihood ratio, if you could, go ahead and tell us the significance of your finding.

A Well, likelihood ratio means that the likelihood of someone being judged impaired if they got drug, is no better than 50/50 if it is one. But more alarming is the simple calculations that if you received placebo, 56 percent of the time, the DRE technician judged you to be impaired. That is after having received placebo.

So the ability for the DRE protocol to reliably discriminate between impaired and unimpaired, is poor.

Q And were there -- as far as the --- distinction between impaired and unimpaired, did you also break this down by drug category?

A Yes.

Q If you could show us.

A In -- what this shows, is each of the -- on the

first column, each of the drugs that were given and then going across was the Officer's decision based on each of the drugs given. And blue indicates the likelihood that the officer picked the right drug. In a case of a stimulant, the Amphetamine, it was less than 10 percent of the time. In no instance was it even 50 percent of the time, did they choose the correct drug.

Q And in your experience in looking at studies and evaluating their success, how would -- how does your --- in clinical pharmacology and clinical research, how does it view the success of the study?

A From my perspective, there was a hypothesis being tested. The hypothesis being tested was that the DRE technician could reliably identify -- discriminate between impaired and unimpaired. The second part of the hypothesis was the DRE technician could reliably identify the drug that was causing the impairment.

The hypothesis has to be rejected. He was not able to reliably discriminate between impaired and unimpaired nor where they reliably able to identify the drug that the subject was given.

Q Now, you are aware that --- decision is determining whether someone has signs or symptoms that are from medical conditions or from drug conditions, correct?

A Yes.

Q Was that tested in this --

A Not all. These were healthy volunteers. So any additional variance that would have been introduced if someone had symptoms of a chronic disease, say diabetes which would have likely confounded the DRE technician even further.

Q And so your opinion if they had actually tested with that condition, would they have fared better or worse in your opinion?

A Well, I can’t speculate but it would have been an additional source of variance and it would have been an additional confounding.

Q Now in addition, there was only a certain select number of drugs is that correct? Used in the study?

A Yes.

Q And what if any significance does that have to you as to the likelihood that it could be right?

A Well, if you look at it really simplistically, in this study, they only tested four compounds, THC, Benzydiazepene, Codeine, and Amphetamine. So there is only five categories on impaired. If you remove unimpaired, you are left with four categories. The officers could pick multiple drugs. They could say they were on one or two drugs. If they said that they were impaired by two drugs and they were right only on one of them, that was counted as a success.

So, that brings you down to 50/50. There was a 50/50 chance of guessing which drug they were on when they said they were impaired. And if you look at the blue boxes, none of those even -- none of those are even 50 percent.

Q In addition, were there some other information in this study regarding how they were arriving at their opinion?

A Pardon me?

Q How they arrived at their opinions?

A I am not sure I understand the question.

Q Okay. If I could -- when they were making their decision between impaired and unimpaired, did the study indicate what they were relying on?

A There were some --what is referred to as post hoc statistical analysis. You -- when you submit a protocol to human research committee for approval, you have to tell them in advance how you are going to statistically analyze the data. And then that is how you statistically analyze the data.

When you are done with that first analysis, you can look at the data and say what else might we find in here. So post hoc statistical analysis. In the post hoc analysis, what they seem to indicate was that rather than relying on the totality of the information that the technician was obtaining, they would rely on certain pivotal clues and by -- and ignore other things.

So for example, they would look specifically for horizontal gaze nystagmus and make a decision largely on whether it was present or absent. Even if the drug that they were picking wasn't known to produce horizontal gaze nystagmus. So they concluded that the officers didn't rely on all of the information that they sort of simplified in their -- in essence, simplified it for themselves and --

Q As far as if we can -- in your experience, is there a difference between alcohol and drug interactions in the body?

A Yes.

Q And could you tell us exactly based on your training and experience what the differences are?

A The primary issue is that the effect that a specific drug will produce on a specific individual following a specific dose at a specific time is a -- has a source many more variables then one generally sees with alcohol. So the relationship between taking a dose of drug and then being impaired or displaying signs of impairment is going to be much more variable than with alcohol.

Medications are taken every day. So tolerance is the rule rather than the exception. And depending on how long it has been since you started -- if you started taking the drug yesterday, you are going to have much less tolerance than you will two weeks from now.

Medications are used to treat medical conditions. What you are using the drug for will influence the effect it produces. If I give a drug -- if I give a selective serotonin re-uptake inhibitor anti-depressant drug to someone who has depression, over time, they will be more active. They will be more alert. Their depression will resolve.

If I give that same drug to someone who has a bipolar depression, I have a real chance of putting them into a manic state and now that patient is going to be agitated, fidgety, hostile and very much look under the influence of a stimulant.

So why you are giving them the CNS active drug, you are treating, you are treating a medical condition, that can influence it. Drugs, unlike alcohol have metabolites. Some of those metabolites contribute to the effect and make the effect more pronounced. Some of those metabolites, antagonize the effect.

But more importantly, there are significant genetic differences that we are now coming to appreciate in the hepatic P450 isoenzyme systems. There are in a community for about 6 different enzymes, rapid metabolizers, regular metabolizers, poor metabolizers. So how you respond to a drug may very much depend on genetically how efficient is your metabolizing system for that drug?

And then the time course in medications in blood.

This has to do with why blood concentrations are not often times reflective of the degree of effect. With alcohol, what is in your blood is very much reflective of what is in your brain at almost all times. With drugs, the concentration in your blood is more likely related to the concentration that is in fat and only related to concentrations in brain for a short period of time around peak concentrations.

So, all of these are sources of variability which make appreciation of or expectations of drug induced impairment from a specific drug in a specific individual following a specific dose and a specific time, much more variable than alcohol.

Q Now, you had the opportunity to sort of review the DRE protocol and how they administer their tests and the information they use, is that correct?

A Yes.

Q Can you explain a little bit about what you found in the current system?

A In my opinion, the current system makes largely subjective observations. Subjective in the sense that you describe the individual's speech. You describe their attitude. You measure their blood pressure and blood pressure is variable.

You assess tests such as the Romberg* where the individual is asked to judge 30 seconds. Well, you know, in

Maryland, 35 seconds may be a pass and in New York State, 37 seconds may still be a pass. So it is a largely subjective. Then as we have seen from Dr. Janofsky's data as well as a little bit of the data that I have presented here, they are largely unreliable in separating impaired from unimpaired. But the individual is charged with driving under the influence of drugs based on the DRE technician's opinion.

The State's sample -- the State's expert is usually somebody whose training is not clinical. They very rarely have any experience seeing real individuals or real patients under different disease states or under different circumstances who take real drugs. Their testimony will report a measured drug concentration or the presence of a drug in blood or urine and they do this as though blood and urine were interchangeable.

This is from a JAMA consensus paper. And it says, "Inferences regarding the presence or systemic concentrations of the drug at the time of driving or degree of impairment from drug use is generally unwarranted." And it makes comments about the use of urine. But, what the State's expert, a laboratory trained individual will commonly do, is testify having read a textbook, Goodman and Gillman's Pharmacological Basis of Therapeutics and talk about what that drug is capable of producing.

Valium is a drug, it is used as a sedative,

hypnotic. It has the potential to produce these effects. But that is not what the question is. The question is, what would be the expected effects of that dose of medication in that client at that dose at the time he was driving?

MR. DAGGETT: Your Honor, I am going to object to that, that is not the question. That is not the issue before the Court. And he is testifying again, to -- I repeat my earlier objection but now he is putting out things from his report that are not -- it is not what we have heard and it is not what the issue of the case -- of what this hearing is.

So to have him tell the Court what the issue is, I think is inappropriate.

THE COURT: Repeat the -- I didn't hear -- go back and repeat what was just said. What did you just say, Doctor?

THE WITNESS: Typically, the State's expert will have -- will come in and say we have found Valium metabolites in his urine. So we know at some point he had taken Valium. We know Valium is capable of producing sleepiness. We know Valium is capable of producing impaired judgement. Valium is capable of -- capable of and that will be it.

But what is important is, in this patient, who has been taking Valium at this dose for years, would you really expect that dose to produce impairment, given the clinical circumstances, the clinical variables in that particular

patient? That is really what I think is the important issue. I -- and I as go through this, I will show you many instance where --

THE COURT: I don't think he is talking about the ultimate issue, I think he is talking about in a given patient. What -- as I understand what you are saying, Doctor, is, the patient has a tolerance for Valium.

THE WITNESS: That is one circumstance, one of many circumstances where the individual would not be driving while impaired but they would have Valium or concentrations in their blood or urine. The State's expert opines that the Valium can possibly cause these effects and the DRE technician judged them to be impaired using a process that is 50 percent of the time can't identify impaired from unimpaired.

THE COURT: All right, overruled.

BY MR. DELEONARDO:

Q Now, Doctor, you mentioned if we could go to the next slide, where you talked about -- first of all we will stop there. You talked about the JAMA paper, can you tell us what JAMA is?

A Journal of the American Medical Association.

Q Okay and you previously -- I think you just testified that you used an excerpt from that.

THE CLERK: Defendant's Number 15.

(The document referred to was marked for identification as Defendant’s Exhibit 15.)

BY MR. DELEONARDO:

Q Show you what has been marked for identification as Defendant’s Number 15. And ask if you can identify what this is?

A This is the drug concentrations and driving impairment consensus development panel that was published in the Journal of the American Medical Association.

Q And what does it mean to have a consensus report?

A A learned group gets together, researches, debates, comes to a consensus on this topic.

Q Now I am going to come back to that in a few minutes, but we now talked about and I think you had initially indicated about some of the issues that can be at play with the drug recognition exam. Can you walk us through that first?

A Yes. This is not an unlikely possibility. I see patients every day who have had minor strokes. Their biggest concern is that they don’t want to have another one that is a bad stroke. And statistically they are at risk. So many times these patients will be put on, in this case, Lorazepam, a Benzydiazepene. It is -- they will take it in the evening because that is when their fears haunt them the most.

It has a six to eight hour duration, a half life of about 14 hours. The next day they could be driving, involved in a minor motor vehicle accident. The DRE technician will do his process and he will find them to have low blood pressure. Almost all stroke patients are on anti-hypertensive medications because high blood pressure is a risk for another stroke.

He will have a low heart rate because many of the drugs we use to treat high blood pressure will lower their heart rate as well. They will have difficulties with balance and muscle tone. Because they have had a minor stroke. The DRE will conclude that they are under the influence of central nervous system depressant. The drug will in fact be detected in their blood and urine.

And the patient, who is not an impaired driver will be charged with driving under the influence of a CNS depressant based on the DRE technician's evaluation and that is -- a flawed system.

Q Well, let me ask you this, what are the reasons that you first became aware of this drug recognition expert? Have you ever had patients in that position?

A I have had patients who have gotten charged with driving while under the -- driving under the influence of drugs who this is not -- this is not exactly the patient from a patient case but it is patients like this. Now, patients

who have a gait disturbance for one neurologic disease or another. Patients who have changes in muscle tone from one neurologic disease or another. Patients who when you sit and speak with them, patients who are on Lortab, on a regular basis for some chronic pain syndrome or patients who are on a Benzydiazepene chronically as the example that I have used here.

When I see these patients in my office, they are -- their speech is articulate, they are insightful, their fund to knowledge is appropriate for their education. Short term memory is intact. Their speech lacks paraphrasing errors. There is no evidence at all in my mind that they are in any way impaired by the drug.

But if you put them through to the DRE protocol, they would likely as not come out as “under the influence or impaired by” whatever drug they are on and often times the officer knows what they are on before he does the evaluation.

Q And in the particular situation, you talked about a couple of things, you said these drugs will have some times have an effect on blood pressure or heart rate or --- is that correct?

A Either these drugs or other drugs that they happen to be on or the combination of both.

Q Is there also medical conditions that can cause that?

A Sure.

Q And you have had an opportunity to review have you not, the ranges used for blood pressure by the Drug Recognition Expert program, correct?

A Yes, I have.

Q What is the range that was used in the field of pharmacology in medicine?

A The joint commission on high blood pressure control says that diastolic -- or excuse me, systolic should be less than 120.

Q And you said that diastolic, what about systolic?

A I am sorry, systolic should be less than 120. I apologize.

Q And diastolic should be less than?

A Less than 80.

Q Okay. As far as pulse, what is generally accepted in the field of pharmacology in medicine?

A 60 to 90.

Q Is that for everyone? Or is that -- again is there people that have less than that?

A Well, again it all needs to be evaluated specific to a patient. If a patient is taking Metoprolol for hypertension and they have a heart rate of 85 then something is wrong. The drug should have made it lower.

Q So even within those ranges, potentially you could

have indications of medical causes as well?

A Yes.

Q As far as -- we have heard a lot about muscle tone, how -- do you ever in your practice, are you regularly checking muscle tone?

A Yes.

Q And can you describe for us how you do that?

A The standard for evaluating muscle tone, for example I see patients who have had strokes. When you have a hemiparasesis from a stroke, you often times get strictures. So you are looking for increased muscle tone to determine when the patient ought to have their muscle relaxant dose increased. And --

MR. WELLS: I apologize, I don’t mean to interrupt but I would ask if you could speak up or lean closer to the mike, I am having a hard time hearing you. That is all. Thank you.

THE WITNESS: Sure. The way I was taught, is you look at resistence, you say, “don’t resist me” and you look for resistence on flexation of a major joint. And you get to here and you let it go and it flops, that is decrease muscle tone.

If there is obvious resistence in either direction, there is increase muscle tone.

BY MR. DELEONARDO:

Q And just for the record, you are indicating that you are holding your wrist and moving the arm up and down.

A I am flexing at the elbow and looking for muscle tone. It can be done in any major joint but in the setting I see patients, that is just the most convenient.

Q And as in the neurological institute that you are, do you ever administer Romberg's test?

A Yes.

Q Okay and can you describe how that is done?

A The real Romberg?

Q Yes.

A I again, same population of patient's. In patient's who have had stroke or TIA, they are often times diabetic. So I will go out to the waiting room, hello Ms. Jones, I am Dr. Gengo, do you want to come back to my office? To go to my office, you walk down a corridor. I will walk behind the patient and I will look to see if there is any problem with gait.

Is there any noticeable problem with gait? I already have reviewed their medical records, I already know the medications that I think they are on, I am going to review it with them to be sure what they are actually taking. If I see a gait disturbance or more importantly, I will stand -- they will come into my office and they will wait for me to sit down.

And I will purposely stand a little longer to see, are they stable? If I see any indication that I need to explore this further, I will do the neurologic Romberg test which means, I will ask them to stand with their hands at their sides, their feet close together and simply look at me.

And I will look to see is there any significant sway. And I will ask them to close their eyes, don't put your head back, just close your eyes. What I am testing is, when you stand stable, what keeps you from falling over and its input to the brain. It is input to the brain from two sources. One at the bottoms of your feet, so you know where you are in space and second is visual input.

If you are stable with your eyes open and you close your eyes and you become unstable, it suggests that you are over relaying on visual input to maintain your stability so there must be a problem with information coming, via appropriate reception. If it is a diabetic patient, it is usually the case that they have a diabetic neuropathy, they can't feel the bottoms of their feet really well.

That tells me that whatever is the problem, is not a drug problem, so when I send my report back to the physician who sent them to me, I will say well whatever is going on with their gait, I can tell you it is not medication related or unlikely medication related. That is the -- my utility of the Romberg.

Q Okay. And you said -- you were clear about not putting the head back, why is that?

A Because when you put your head back, you stimulate the vestibular apparatus which is where you disequalibrate the vestibular apparatus which could induce a dizziness.

Q Actually by doing that, can create --

A Yes.

Q You also in talking -- you said earlier about counting 30 seconds or estimating 30 seconds in that position, is that done in the medical pharmacological community?

A No.

Q And is there any standardization as to how long or how little you would have to be for it to be an indicator of anything?

A None that I am aware of. I don’t know whether at 34 did you fail? At 37 did you fail? At 39 did you fail? Nor am I aware that if someone were evaluated by two different DRE technicians, one in Buffalo and one in Baltimore, that they necessarily even use the same threshold.

THE COURT: I am sorry, that they necessarily?

THE WITNESS: Use the same threshold for how many seconds does it take before or after 30 to fail the test.

BY MR. DELEONARDO:

Q Now, if you could, we mentioned earlier about the

Journal of American Medical Association paper, if you could, what is the significance that you found in it?

A They put together a list of five criteria that if those five criteria could be met, then in fact, you might be able to have a range of -- a list of drugs and a range of drug concentrations that you could reliably say create a danger to the highway if someone is using that drug at that concentration.

They conclude by saying these criteria have been met for ethanol. It is not certain that they can be met for other drugs that are now concerns for highway traffic safety or highway safety.

Q Okay and if you could, step through what their five issues were and tell us why they are not met?

A Well, the first is that the drug can be demonstrated in laboratory studies to produce dose related impairment and skills either with driving or related to driving. Many of the elements of the DRE are not related to driving --

MR. DAGGETT: Your Honor, I hate to beat a dead horse here but once he is done with this, going through these things, we have no way of cross examining him on these particular issues. If he is going to go on and just go on and on with his -- with this particular Power Point, once it is over and done with, we are not going to have the ability

to mark it and cross examine it -- I mean, mark the what he is producing and cross examine him on it.

And I just think that is terribly unfair. They could have given us a copy of this a long time ago and so at least now we could go along and read it. As it is now, we have to read up, look up there, make notes and try to remember exactly what he is saying.

MR. DELEONARDO: Well, first of all, Your Honor, I would say I had to go along and make notes to cross examine all the witnesses that I heard. I don't think it is any different -- we are just seeing it visually. I am certainly happy to provide Mr. Daggett a copy and actually mark one for the Court so we would --

MR. DAGGETT: Well, why didn't they do that an hour and a half ago?

MR. DELEONARDO: I am more than happy to do that if you want. I am happy --

THE COURT: I am going to take a 15 minute recess. Maybe you can disseminate --

MR. DELEONARDO: Okay --

(Whereupon, a brief recess was taken.)

THE CLERK: Doctor, please remember you are still under oath.

THE WITNESS: Yes, ma'am.

DIRECT EXAMINATION (Resumed.)

BY MR. DELEONARDO:

Q Okay, so Doctor, picking up where we left off, you were setting out the five items that were required according to AMA and the relationship to what their Drug Recognition Expert program does, so could you begin that from number 1?

A Sure. From the JAMA consensus paper, the drug -- one requirement for this to be in place would be that the drug can be demonstrated in laboratory studies to produce a dose related impairment and skills associated either with driving or with related psychomotor functions. The literature is pause. There is a paucity of real literature -- peer reviewed literature in this whole area.

And more importantly most -- many elements of the DRE have nothing to do with impairment. Blood pressure, et cetera. So it has never been shown to cause driving related impairment.

The second requirement was concentration of the drug and or its metabolites in body fluids can be accurately and quantitatively measured and related to degree of impairment produced. I don’t think that blood pressure, heart rate, body temperature, pupil size, speech, attitude are related to degree of impairment produced.

The third is such impairment is confirmed by actual highway experience. I take that to mean that you don’t pull the guy over because he had a bad tail light He has to

actually have bad driving. Fourth, simple behavioral tests that can be done at the roadside by police officers with modest training can indicate the presence of such impairment to satisfy the courts.

Well, we have seen the data that says the DRE procedure and results do not accurately discriminate between impaired and unimpaired. The data simply is what it is. So that requirement is not met. And lastly a range of concentration and drugs can be incorporated into laws relating to impaired driving and ipso factso evidence.

Like what we have with alcohol where it is presumed that anyone over an 08 will be impaired and not be able to operate a motor vehicle in a safe and prudent fashion. Per say concentrations of drugs are going to be effected by way too many sources of clinical variances.

Q So based on that, on your experience, what would be necessary to know at the time of your Drug Recognition Expert is involved in the evaluating of the patient, what would they actually need to know?

MR. DELEONARDO: And Your Honor, just for the -- I guess I can talk to the State, but I gave a copy to the State. I was going to give a copy to Your Honor, I know you are writing vigorously. Perhaps if you want a copy as well.

THE COURT: All right, that is fine.

MR. DELEONARDO: I don’t think of it is as

substantive evidence.

THE COURT: Yes, we are not -- it is not being admitted as --

MR. DELEONARDO: But at least in terms of demonstrative, it may be -- Your Honor not have to take quite as many notes.

THE WITNESS: These are some of the things that the DRE officer doesn't know. That in my opinion are important to know before I could opine that yes, I would expect this drug and this dose and this person to cause impairment. The DRE doesn't know that the scope of medical problems that the patient has and how other medical problems can influence the DRE evaluation.

The DRE officer does not know how a specific medical problem can mitigate the effect of that drug. As I said, in a bipolar patient, a drug like Venlafaxine is going to produce a different effect then in a depressed patient. The DRE officer is not well prepared to understand how other medications, medications to treat any number of problems that a patient may have from infections to high blood cholesterol are going to influence drug effect.

The DRE officer isn't going to accurately know how long that drug has been prescribed. And the DRE officer is not going to know expected steady state concentrations of that drug since most of the literature published on the

effects or the concentrations expected from a drug come from single dose studies.

BY MR. DELEONARDO:

Q And we will get to discussing what those terms mean and so forth. But if we could break down first of all and can you tell us specifically why knowing the medical problem of the drug is so important?

A Well this is a partial list and it could be much more extensive. Of conditions where the patient's driving or the patient's cognitive function would be worse without the drug that we are concerned with. For example, in an individual who is an Opiate addict, who has an Opiate dependance problem, if they are part of a Methadone treatment program, managed well, they are going to be in a circumstance where they are going not be impaired at all.

I am not sure -- I know if I were driving a car, the person I would want behind me would be someone well controlled in a Methadone maintenance program as opposed to someone who is going through withdrawal.

Q If I could just stop you real quickly, if someone was going through withdrawal, would that give any indicators of the category of drugs based on what you have seen in the matrix?

A They would be profusely sweating. They would be distracted. Agitated, irritable. Blood pressure would

likely be elevated.

Q That is with no drug in their system?

A That is with some amount of Opiate in their system but not sufficient amount to keep them from going into withdrawal. We have already talked about bipolar patients. Depressed patients is an interesting category of patients and I think it really makes the point that can be applied overall in other issues.

This is a well control, led study that looked at drug impairment and depressed patients receiving long term anti-depressant treatment. And they did show poorer performance and this is one of the studies done in the computer car that is actual roadway driving where there is computer sensors in the roadway.

It was poorer than patients -- medicated patients compared to controls. They didn’t say they were impaired, they said there was a difference between controls and they attributed that impaired performance to residual depressive symptoms not anti-depressant treatment.

Another study that included the same drug, Venlafaxine, this was in volunteers. And what they found was Venlafaxine by itself in non-depressed individuals, healthy volunteers, had no effect at all on driving performance. Yet this is considered a central nervous system depressant agent by the DRE protocol.

I mentioned that depression is an interesting field because it is one of the few fields where there are, A, a lot of different kinds of anti-depressants. If you look at the drugs that are included in the DRE category, CNS depressants, it is everything from Venlafaxine to quaaludes. There are so many different classes of drugs that it is -- it almost make the term CNS depressant meaningless.

Q Well, we previously heard testimony that the drug categories and the way the drugs are classified are consistent with some of the learned text in this area, like Goodman and Gillman, are you aware of that?

A I have owned every copy of Goodman and Gillman published since 1975. It is not like any of the Goodman and Gillman's I own.

Q So in your experience and looking at all of the drug categories, are there drugs that are misclassified?

A There are drugs -- the classification systems are far too broad. Even if we limit the classification system to anti-depressants, as you can see from some of the medications listed here that are studied, there are many, many different types of anti-depressants, all of which affect the central nervous system differently.

The luxury we have here is that there have been have some good driving performance testing done in a scope of anti-depressant drugs. Drugs used to treat depression. What

you find are that driving performance in a depressed patient will be influenced by a number of dynamic variables. How resolved is their depression? Because their depression will impair their driving

Which of the anti-depressants are they on? An older sedating drug or a newer non-sedating drug? If they are on an older sedating drug, are they -- have they been on it for one week or have they been on it for three years? So it is possible -- another case example. A 31 year old woman is observed by police to be traveling under the speed limit.

She is stopped. While retrieving her license, the officer notices a prescription bottle of anti-depressants. She undergoes the DRE and he finds her speech to be slow and deliberate. Subjective. He finds her -- I am sorry, her coordination to be slow and deliberate. Her speech to be slow and non-spontaneous.

Well, we all watch television shows that say, the less you say to the officer, you know -- you have the right to remain silent. So she is -- her speech is slow and she is not volunteering anything. Her heart rate is slow. Her blood pressure is low. Many of these anti-depressants will cause decrease in blood pressure and heart rate. It doesn’t impair your cognition though.

HGN is absent. But she fails to -- the one leg stand. Her internal clock is 36 seconds. Her attitude is

depressed. Her pupils are slightly enlarged. And an anti-depressant is detected in her urine. This -- the same DRE results would be present in A, a patient with unresolved depression treated with a sedating anti-depressant. A patient with unresolved depression with a non-sedating anti-depressant.

A patient with unresolved -- resolved depression treated with a non-sedating anti-depressant. The officer knows, it is supposed to be confirmational bias, he knows she is on something. So many of these subjective end points can be influenced. Or the patient can be a resolved depression patient treated with sedating anti-depressants but they have been on them for many months.

Of these four conditions, only one constitutes driving while ability impaired with drugs. And that would be number 1. But the DRE process cannot distinguish, the DRE officer does not have enough information to be able to distinguish one from the other three. This is from the JAMA consensus paper which makes the same point.

A person -- similarly, a person with schizophrenia or depression could be more impaired if untreated than if appropriately treated taking an anti-psychotic or anti-depressant medication.

Q We heard yesterday -- if I can stop you there, from Dr. Janofsky who indicated that actually some of the anti-

psychotic medications that are classified as CNS depressants could actually have an effect completely different from what they described in the manual. Do you agree with that?

A Yes, I do.

Q Now as far as you talked a little bit about people that -- why they are being treated is important, is there also medical conditions that are not necessarily being treated that can affect the observation?

A Sure. Many patients have diabetes. The DRE officer asks the patient, asks the client, are you taking insulin but most diabetics are treated with oral medications and not insulin. So they would say, no I don't take insulin. If they are having a hypoglycemic episode, they would be confused. Their coordination would be off.

If they have peripheral neuropathies, they could have an unsteady gait. So they would be clued as having an elevated heart rate, elevated blood -- or I am sorry, depressed heart rate, depressed blood pressure, facial sweating. Balance would be off and they would have an odor on their breath.

But it is not a drug induced problem. Patients who have had strokes, who have a residual motor deficient, they are almost always on anti-hypertensive, so the heart rate would be low, their blood pressure would be low, their muscle tone will be low because of the stroke and balance will be

bad. It is not drug induced impairment. Benign paroxysmal position vertigo are patients who have sustained episode of vertigo.

So they are going to -- their balance and their performance on all the field sobriety tests are going to be off. Episodically. Patients with multiple sclerosis, these are patients who have motor deficits because of their multiple sclerosis. They have tremor because of their multiple sclerosis, they have depression. So on the DRE protocol they are going to have changes in muscle tone which could be increased or decreased. They are going to have depressive speech, they are going to have a depressive attitude.

Their balance is going to be off and they often times have stress incontinence. If someone who is arrested pees their pants in front of the officer, I am pretty sure that is going to be noted and it is not going to work in their favor. But it is not drug induced driving impairment.

Again going back to the JAMA paper, signs are not specific to effects produced by drugs. They maybe associated with distractions of the driver, fatigue, physical illness, symptomatic emotional disorders and many other non-drug related cases, causes.

Q And in the assessment being made by the Drug Recognition Expert indicated they are distinguishing between

whether a person is impaired to drive and whether that impairment is from drugs or medical conditions. Based on the information they have and the evaluation, can they distinguish between these?

A Based on the information they have and based on the limited training they have? No.

Q Okay if you could -- I know you indicate next the things that you believe an officer would have to know.

A Well, they would also need to know for how long has the drug been prescribed? The same dose of many medications in a naive individual compared to someone who has been taking that medication for a while is very different. For example, this is some Alprazalem data, the citation is on one of the following pages. But basically they took individuals who are Alprazalem, a Benzydiazepene, a central nervous system depressant and on the top panel, they gave them various increasing doses from 0.25 milligrams to 2 milligrams and they reported the percentage of tests showing impairment and as you get up above one milligram, you have 75 to 100 percent of their tests show impairment.

Those same individuals on continuous treatment, show a very different story. You know, the number of tests that are impaired at doses up to 1.5 is very small. And the number of memory tests that are affected with -- after they have been treated for a while is very small. This is --

another example is if you look at -- if I were to take a dose of Methadone right now, I would likely be sleepy, I would likely look impaired.

But in someone who is on a well controlled Methadone maintenance program, that is not the case. And in fact, in this study, they looked at the driving records of 104 patients on Methadone treatment and compared their driving performance and their accident prevalence to the general population of Texas and found no difference.

So again, it makes a big difference on how long the patient has been taking the medication, it can influenced whether or not it impairs them and the DRE protocol isn't good at distinguishing between -- reliably distinguishing between impaired and unimpaired. And again, going back to -- let me skip over this in the interest of time.

The other things that you need to know is that the officer doesn't necessarily know how long has it been since the patient took the last dose compared to when the DRE is performed or when the sample is taken. The reason that that is important is if the sample is taken at peak concentrations, most of the standard tests that report usual concentrations are average.

So if I catch the concentrations at its peak, it is going to make the individual look like they are taking more than the usual therapeutic dose.

Q Now would that be true in blood as well?

A Yes. A good example. This is the citation I have cited before. It says, “Alprazalem is absorbed rapidly, produces corresponding rapid sedation and impaired digit symbol substitution performance. These effects resolve rapidly and were similar to placebo by four to six hours.”

And here is the data. And what you can see is, after four to six hours, there would be no impairment but there certainly would be measurable concentrations. And if the officer found a bottle of Alprazalem on the individual, he is going to be more inclined to find in the subjective end points, a determination of impaired.

Lastly is with regard to steady state concentrations. Unlike alcohol -- with alcohol you drink and concentrations go up, come down and they don’t go up again until you drink again, which could be days to weeks later. With the medication, you take the drug every day. Most drugs that affect the central nervous system accumulate. But most of the literature saying after -- for example, an 8 milligram or 6 milligram dose of Alprazalem, what is the usual concentration?

They take normal volunteers, give them a single dose, measure the concentrations. If you measure after a week or so when the drug has had a chance to accumulate, that same 6 milligram dose gives you very different

concentrations. So if after a single dose which is where the DRE manual would say, or not the DRE manual but the State's expert would say, well Goodman and Gillman says the usual concentration after that dose would be 20 nanograms per mil. At steady state, it is 80 nanograms per mil, leading to the false conclusion that you are taking 3 times the therapeutic dose.

Again, just to illustrate that, this is where data in reference texts come from. But this is accumulation to steady state, this is where the DRE was performed and the blood concentration was measured.

Q Just to make sure I understand this correctly, you are saying that if you are taking the drug over a course of time, the concentration levels will show much higher even though it is not having the effect any greater than it did at a single dose?

A As time goes on, concentrations will increase to a point of steady state. Over that same period of time, in most drugs, magnitude of effect dissipates because of tolerance.

Q And does it mean -- just to clarify, when you are at 40 and the single dose is 10, would that be four times therapeutic dose that they are experiencing?

A No. That is the therapeutic for steady state. What the DRE officer -- information that the DRE officer

doesn’t know is, is this 40 the result of someone taking a single large recreational dose or is the result of someone taking a therapeutic dose that they have been on for a long time, they would be tolerant to it and this is in fact the expected concentration of steady state.

Q So in your experience, if you are simply testing for the presence of a drug being in someone’s system, would that tell you anything about --

A You should have even much less information.

Q So you are talking about actually if you even quantified the concentration levels, correct?

A That is right. And this is again, from the JAMA paper, this has “another problem is that virtually all studies use single doses of single drugs, the effects of single doses of drugs are quite often different from those that follow chronic dosage regimens.” So, the DRE officer has real challenges determining impaired from unimpaired and real challenges in ascertaining or choosing which drug --- largely because there is so much information they don’t have that they need in order to make this interpretation.

And that is scary when you look at it from the perspective that this is a process where the data we do have shows the DRE technician struggles determining impaired from unimpaired. But once someone is labeled as impaired, everything falls downstream from that.

Q And what about the situation where you are actually rendering that opinion prior to receiving even analysis --- that drugs are even present in the blood?

A That is --

Q Is that something that you can do?

A No. I couldn't begin to do that.

MR. DELEONARDO: Your Honor, I see that it is 12:35 and I don't know if the Court wants to break. We are getting ready to get into another subject --

THE COURT: All right, we will recess until 1:45. I think the room will be secure so if you want you can leave your --

MR. DAGGETT: Your Honor, before we forget, can we take two minutes -- the clerk was kind enough to point out scheduling issues for the rest of the week. And we are only really talked about this through tomorrow. We haven't talked about anything after that. So I was -- I threw that out there because sooner or later, we are going to have to address that issue.

THE COURT: Well, if you can -- if you want to get some dates possible dates from assignment, I would coordinate those with Ms. Zimmel because a lot of times she is a better source of information about my schedule than myself.

MR. DAGGETT: Do you know what your schedule is for Thursday? The day after tomorrow?

MR. DELEONARDO: We are trying to see if there is a possibility that we can resolve it this week? Maybe on Thursday or on Friday.

THE COURT: Well maybe I can check over lunch and see -- I am scheduled to be in regular criminal this week, I don't know what -- and then of course, on Thursdays, typically we have the contempt for child support but maybe some of that can be handed off.

MR. DAGGETT: We will figure it out.

THE COURT: So you are thinking Thursday afternoon?

MR. WELLS: Thursday -- we are looking probably for I would say to be safe, just hypothetically right now we aren't finished with Dr. Gengo's direct. I don't know how much longer direct is going to take. The afternoon? Which won't start until probably 2:00. That leaves three hours for the continuance and the finishing of his direct and then cross examination.

And then they have Dr. Adams after that, is my understanding which I am assuming will probably take about as long as Dr. Gengo. Probably more?

MR. CRUICKSHANK: I don't think we get --

MR. DELEONARDO: No, no, not more.

MR. CRUICKSHANK: No. I wouldn't think that we would get to Dr. Adams today.

THE COURT: So what are we saying? That you think

we can finish this week if we go today, tomorrow afternoon and all day Thursday? Is that what we are saying?

MR. DELEONARDO: I think we probably would at least need one full day. In addition to --

MR. WELLS: I -- well I was just thinking the way that it --

THE COURT: In addition to Thursday?

MR. DELEONARDO: Well, what I was saying was, we have today, we have tomorrow afternoon. I know we are done our piece. I don't know how many they ultimately will call but I will assume at least a full day will probably be ---.

MR. WELLS: The way it has been so far is it has been a day a witness, generally speaking. They have finishing up with him, they have Dr. Adams. We have two DREs and I don't know if they will take a full day each but they will take -- one of them I imagine is probably going to take a significant amount of time.

THE COURT: Well, let me see what Thursday is looking like. If I can -- I don't know whether I will be able to give it a full day. But we will see what --

MR. DELEONARDO: I know I am available Thursday and Friday and I think Mr. Cruickshank is as well. So whatever is convenient for the Court.

THE COURT: You can step down, Doctor, thank you.

THE WITNESS: Thank you.

(Witness excused.)

(Whereupon, a luncheon recess was taken.)

A F T E R N O O N S E S S I O N

THE COURT: Be seated please.

MR. DAGGETT: Should I call anything?

THE COURT: We are back in the record in the --- hearings in the cases which were previously placed on the record this morning when the case was called.

THE CLERK: Doctor, please remember that you are still under oath.

THE WITNESS: Yes, ma'am.

DIRECT EXAMINATION (Resumed.)

BY MR. DELEONARDO:

Q If you could go back, just to begin, I think you left off at drug combinations. Now if I can pick up from there, Doctor. You are familiar and we have mentioned earlier that in the studies that were done, that this idea of a polydrug -- more than one drug in a person's system has actually not been tested -- the ability to do that, is that correct?

A It has not.

Q And you have a --- concept of drug combinations, correct?

A Yes.

Q Now, I want to show you -- Defense Exhibit 5, the ---, you had an opportunity to review the session 24 on drug combinations?

A Yes.

Q If you could take a look at that and just verify that those are in fact the sessions that you reviewed.

A Yes.

Q And one of the concepts that is explained in this manual is -- this paragraph that is listed on page 3 at the last paragraph on the prevalence of polydrugs, is that correct?

A Yes.

Q And what is the manual say about what the DRE should be able to do as to polygraphs?

A “DRE should not be surprised to encounter virtually any possible combination of drugs. DREs may find more polydrug users than single drug users. If this means that the DRE -- if this means that if the DRE is to do a good job at interpreting the results of evaluations, they must understand the mechanisms of drug interactions.”

Q Do you agree with that statement? That they would have to be able to understand how all of the drugs would interact on a person?

A They have to understand true mechanisms of drug interactions.

Q Now, in that section, it talks about these concepts of no effect, --- effect, antagonistic effect. Is that correct?

A Yes.

Q Can you explain what those mean?

A I can try.

Q Okay.

A These are I believe what are put forth as mechanisms of drug effects. Again, to a pharmacologist, the mechanism of a drug effect would be two drugs competing for the same receptor site or one drug depletes neurotransmitter that another drug sees as necessary to exert its effects. These are -- over simplification is a complimentary term.

Q When you say these are, are you referring to what they claim will happen when one drug is supposed to not have an action and another one is supposed to have no action?

A If these are proposed mechanisms of the drug effect, then it is a oversimplification to the point where it would be misleading.

Q Okay, well if we could step forward and maybe give some examples on that.

A Well, I mean, there is two problems with this. Number 1, it really says nothing about the mechanism of the drug interaction. And number 2, it relies on any drug from this DRE category interacting with any drug from this DRE category. And as I have mentioned several times, the diversity of different molecules and different classes of drugs that are all grouped into one DRE category, randomly

pick one out and randomly pick one drug that is out of another DRE category that contains a heterogenous classes of drugs and then to predict what effect they will have based on these simple statements is an oversimplification.

Q And with having looked at -- you have seen in your manual, it will say for example if you have this drug and this drug, this is what you will get. Is that something that is generally accepted in the field of pharmacology to have that kind of a check list?

A No. In order to say in the field of pharmacology that this drug will interact with another drug, there needs to be a well controlled study. The doses need to be controlled, the types of patients need to be controlled. Because all of those sources of variability can give you different outcomes, mixing the same two doses.

Q And can that -- if there is an individual that has multiple drugs in their system, you indicated that predicting the outcome is not really possible in a general population?

A Not with the limited information that the DRE has at hand.

Q And let’s talk if we can, if you can turn to the null effect and can you walk us through an example of how that works.

A Well, what I have done is I have taken each of these effects or drug effect interaction -- and I have found

simple examples where it wouldn't be the case. Methadone maintenance produces very few clues on the DRE protocol and certainly does not cause tremor.

Now Trexone is a drug that causes very few clues and does not cause tremor. If you mix these two drugs together, the DRE protocol would say to put them together and you don't get tremor, you don't get many clues. If you give Neltrexone to a individual who is Opiate dependant in a Methadone program, you are going to precipitate Opiate withdrawal. You are going to get lots of clues, not the least of which is tremor.

So to say that Drug A doesn't cause tremor, and Drug B doesn't cause tremor -- I am sorry, drugs from this category don't cause tremor, drugs from this category don't cause tremor, put them together, you won't get tremor. It is just -- here is an example of why that is an oversimplification.

Q That is one example, I assume. Are you able to provide many others?

A Sure. They say that if one drug produces an action and another drug produces an action, together they will produce a reinforced action. Well, that is not the way we even express it in clinical pharmacology. If two drugs produce an effect, together they will produce either an additive effect, 1 plus 1 equals 2.

Or a centergistic effect, 1 plus 1 equals 3, or an antagonistic effect, 1 plus 1 equals 1. Or no effect because they nullify each other out. You know, here is an example, the older triclycated depressants. Drugs like Amitrypilline or Elavil, statistically increase the odds of a crash. The long acting benzydiazepene like Delman which used to be used for sleep commonly, will increase the odds of a crash.

Put the two together and there is no statistical increase in the odds of the crash. Why? Probably because when the two drugs are used together, they are used in smaller doses then they would be individually. But again, action plus action doesn't equal reinforced action and I am not even sure what the definition of reinforced is because the terms we use are additive or centergistic or antagonist.

Q And in addition to that, in the matrix, does it indicate how much of a difference would appear in the vital signs or how much of a difference would be expected in a ---

A Again, it mentions the class of a drug, the DRE categorization of a drug which can be a whole plethora of very dissimilar drugs. Added to a medication from another categorization in the DRE which again, a plethora of dissimilar drugs. Makes no mention of the dose of each. And largely just speculates because for many of the alleged outcomes of drug interactions in the DRE manual, if you go to the clinical literature, there is -- the clinical studies

haven’t been done.

So it is taking general principles over simplifying them and then speculating.

Q Okay, in addition to that, we are talked about the --- effect, you also I see now you have Amphetamine and Alprazalem. Explain the combination there?

A Well, again, most of these additive effects, null effect, combination effect, what is in the DRE manual is intuitively very pleasing. But it is such an oversimplification that it is going to be misleading. One of the other things they call are drugs with antagonistic effects. One drug moves something in one direction and the other moves in another direction.

And you can imagine the dissimilar effects or the antagonistic effects of the amphetamine and a Benzydiazepene. What would be the outcome if you have an individual on both at the same time? Here, the DRE manual is most honest. It says, “you can’t predict.” The reason you can’t predict is because if someone is on a lot of amphetamine and very little Alprazalem, you can imagine they will be demonstrating symptoms of agitation, aggressiveness, hostility, flight of thought, high -- elevated heart rate, elevated blood pressure.

Conversely if they are very little Amphetamine and lots of Alprazalem, they would be somnolent, perhaps nodding

off, cognitively impaired. If you have them on the same dose of both, you may end up with no clues at all. And here is the one place that I agree with the DRE manual, it is unpredictable. You can't predict.

Q And as far as you say, you can't predict, if you are not able to predict what would be seen with multiple drugs, in your opinion, are you able to determine whether someone is impaired by a drug or medical condition? If you can't account for those combinations?

A When I say you can't predict, what I meant was you cannot predict the manifestations of the clues in the DRE evaluation. Which is very -- something very different than saying impairment.

Q And can you explain specifically an example of that in the DRE matrix why you couldn't predict for example, an elevated pulse rate? In other words, let me just break it down, if you have one of the categories that it purports in the matrix not to impact blood pressure and another category that produces or proportedly produces an increase in blood pressure and you add them together, what are you saying as to the predictability of the blood pressure?

A You can't predict it.

Q Okay. And there is no study that would support the ability to predict, is that my understanding?

A It isn't that there are no studies. It is just

that in many of the grids on those pages you showed me, where they said drug from this category mixed with drug from this category will give you these effects, in my cases, there is no good clinical data.

There is no specific well designed placebo controlled study to assess that.

Q And as far as in addition, an example of what about when you are adding polydrug along with a medical condition?

A It adds a whole another set of confounders. Again, the DRE technician has -- I don’t believe is in a position to appreciate other diseases much less diagnose their presence. This is another example. If a diabetic patient is taking Hydrocodone at bedtime for neuropathic pain, which is not at all uncommon, they will have no sedating effects, no impairing effects at all the next morning.

If that same patient while driving, experiences a hypoglycemic event, their blood sugar goes way down as does commonly occur in diabetics. They will display symptoms of confusion, cognitive impairment, slurred speech, sweatiness, rapid heart rate and they will be deemed likely either on a combination of drugs or CNS depressant.

And of course, they took Hydrocodone the night before, so it will be there in their urine. But it is unrelated to their clinical presentation. Their clinical presentation is a medical disorder unrelated to the

Hydrocodone that --- but the DRE protocol and the DRE officers, I don't believe and I have not seen any data to demonstrate that they can discern medical -- disease induced problems from drug induced impairment.

Q And as you said, I think you indicated here that whether the Hydrocodone was detected in blood or urine, would be -- you still couldn't do it?

A True.

Q Okay. Now in moving to what ultimately the drug recognition expert and I know you have --

A I can go past this.

Q I am sorry -- if we could go back. And I know you had talked about examples of what that is and some of the studies that have shown that, can you explain --

A Well, one of the -- it is not necessarily part and parcel of the DRE protocol, National Highway Traffic Safety Administration commonly quotes data that says "if you are taking" pick a drug, Phenobarbital, "our epidemiologic studies, our statistics show you are more likely -- your odds ratio of being involved in a crash are higher than if you weren't taking Phenobarbital." The problem with that is, you have the presence of a drug, you have a crash, you can't necessarily assume one was the direct result of the other.

And I think a great example is, Lisinopril is a drug used to treat high blood pressure. Mechanistically it

is an angiotensin converting inhibitor, it works in the kidneys. It has no effect in the brain.

Yet the odds ratio of being in -- involved in a motor vehicle accident is 23 percent higher if you are on an angiotensive converting inhibitor, Lisinopril than if you are not. How can that be? Well, who are the common patients who use ace inhibitors? Diabetics because it is used for renal protection. Diabetics have hypoglycemic events and have more crashes.

It has nothing to do with the Lisinopril but statistically Lisinopril puts you at a higher 23 percent higher likelihood of being in a crash.

Q So in the peer review published data, it doesn't demonstrate that?

A Epidemiologic data cannot be used for cause and effect.

Q Okay, now as far as turning to the drug recognition expert as to what they claim they can do is first of all whether the person is impaired, correct?

A Yes.

Q And whether they can actually do the impairment, whether they can figure out the impairment from drug and medical and whether or not they can determine the category of drugs that makes that person unable to operate safely, correct?

A This is the public claim that is made. I took this from a continuing medical education program offered through MedScape that was sponsored by NHTSA, and this is a direct quote of what the DRE protocol and the DRE officers are able to do.

Q In your experience in both in both pharmacology and research, is there anything in your opinion within a reasonable degree of certainty of pharmacological certainty, clinical research certainty that would support their ability to do this accurately?

A No.

Q And so when we talk about the issue of whether the person is impaired, you indicate it is not supported by the data and you are relying on the studies that we talked earlier?

A I am relying on the peer reviewed studies, yes. The ones that Dr. Janofsky reviewed at length yesterday.

Q And as far as the impairment between drugs and the medical condition, you don’t believe that they are capable of making those assessments?

A I don’t believe they have adequate education or training to discern drug effect from disease effect.

Q And we also I see that, when we just talked about the issue of polydrug and which category, you are indicating that that is also nothing to support, is that correct?

A There is -- I mean, the Shiner data specifically does not support it.

Q Now, we have heard -- the argument that well, they consider the totality of the circumstances in reaching this opinion. What is your response to that?

A The totality of the information available to the officer to make a judgement as to impairment or not by drug, whether it is drug or medical condition, and which drug it is, is inadequate. He simply doesn't have the information one would need even with more training, he still doesn't have access to the information necessary to make a reliable call.

Q And as far as the argument that they are using scientific or medical principles that are well established in the field, I assume -- would you agree that blood pressure, pulse, eye examinations are things that have been around for a long time in the field?

A They are using well established tools of the medical profession but those tools are being used by technicians in a novel and unreliable way.

Q So based on the field of pharmacology, you would say that the way they are doing this to reach this opinion is --- novel?

A Yes.

Q And am I also understanding that your opinion is that it is not a valid way to do it, is that correct?

A I think that the data has spoken for itself, that it cannot reliably discern impairment from non-impairment and cannot reliably identify the medication allegedly causing the impairment.

Q And finally, the data that is being used, whether it is all the vitals or even the psychomotor test, are you aware of any literature that would support that a finding of those would necessarily mean the inability to drive a vehicle?

A No data at all.

MR. DELEONARDO: That is all I have, Your Honor, I will move my exhibits in, which was the consensus report as well as the ---.

MR. DAGGETT: No objection to those two items.

THE COURT: They would be Defense Exhibit 14 and 15. Defendant’s 14 and 15 are admitted.

(The documents marked for identification as Defendant’s Exhibits 14 and 15 were received in evidence.)

THE COURT: Mr. Daggett?

MR. DAGGETT: Thank you, Your Honor.

CROSS EXAMINATION

BY MR. DAGGETT:

Q Doctor, you have -- you were contacted when

regarding this particular hearing? Approximately, I mean, not the exact date but approximately.

A 6 to 12 months ago.

Q 6 to 12 months ago. And you finished this particular report when?

A I made the last changes on it last -- yesterday evening.

Q And the last changes. When did you prepare the bulk of this? There is a lot of stuff in here, obviously you have been working on it for quite some time.

A Well, it is a -- it includes parts of a presentation that I gave at another meeting. I pulled it all together in the last several days.

Q And you are -- and you did not see fit to give this to your attorney until when?

A When did I -- within the last day or two, the final copy came through.

Q Final copy. Were you giving him -- did you give him other copies of it prior?

A I had given him a really rough draft.

Q And when was that?

A A week ago. Something like a week ago.

Q Now you testified many times before as a defense expert in DUI defense cases, have you not?

A I have.

Q And as a matter of fact, back in 2004, in a case in New York State, at that point, you testified that you had spoken -- you had testified hundreds of times. Question was to you was, did you testify that you speak at hundreds of trials involving alcohol or have in the past and your answer was, I have in the past. So you testified hundreds of times as a defense witness?

A Yes.

Q And you get paid to do that?

A Yes.

Q And you are being paid to be here today?

A Yes, I am.

Q And just -- how much are you getting paid to be here?

A $250 an hour.

Q And how many hours have you put towards this case?

A I haven’t done the final calculation.

Q Approximately how many do you think it will be? 20 or 25?

A At least 40 hours.

Q At least 40. So we are talking $10,000? That is what you are billing, at least?

A I haven’t done the final calculation, counselor.

Q Okay. If I say -- if I miss quote you or anything like that, feel free to correct me. But it is your testimony

that it is -- you can quantify alcohol for various reasons. But you cannot quantify impairment with drugs because there are so many other factors that go into play. Is that a simplification of what you said?

A Yes.

Q In other words, if somebody was to how long they have been taking a particular drug, when they last took it -- the strength in a particular drug, all of those things come into play, so it is impossible -- it is impossible to take somebody's blood, look at the amount -- look at the particular -- tox, find out the drug levels and determine from that if someone is impaired, is that correct?

A Knowing only the presence of the medication or knowing only the concentration of the medication, there is insufficient information in that for me to be able to have an idea whether or not they would be impaired.

Q Okay. And it is your testimony then that the DREs or --- talking about the DREs but anybody, can interview a -- do an interview of some type of the defendant or the driver or whoever it might be -- the patient and determine whether they are impaired by drugs?

A Simply on the basis of an interview?

Q Yes.

A No.

Q It can't be done?

A Simply the basis of an interview?

Q Yes.

A I couldn’t do it.

Q Okay, so basically it can’t be done?

A I couldn’t do it.

Q Well, you are -- so, and I am asking you -- have you ever been to Maryland before? Ever testified in Maryland before?

A I have been to Maryland before. I honestly don’t recall whether I have testified here or not.

Q And have you -- are you familiar with -- I assume you are not familiar with the Maryland DUI laws? I assume that is not something that you looked up?

A Yes.

Q Well, I am going to ask you then for your personal and professional opinion, if you cannot look at some body’s blood and determine that they are impaired by alcohol and you cannot interview them, and make observations of them --

THE COURT: Alcohol or drugs?

MR. DAGGETT: Drugs. I am sorry.

BY MR. DAGGETT:

Q You can’t look at somebody’s blood results and determine whether there is impairment, and you cannot interview them and make observations and determine that there is impairment, and in your professional opinion, how can you

show -- how could you ever prove that somebody is impaired by drugs?

A Counselor, the reality is, that drug effects on human beings healthy or with disease is very complex. I can't make that complexity go away but the DRE process ignores it.

Q So in other words, you are saying that there is no way that you know that it can be done? You can say yes if that is what you think.

A I think with additional pieces of information, it could perhaps become more reliable but as you have stated -- as you have asked me the question, it would be no.

Q And you spent a lot of -- I would say, well a large percentage of your testimony and in the report I guess that you were -- the slide show, Power Point, talked about prescription medications for the most part. Things that people who actually are suffering from certain medical conditions, some of them you talked about high blood pressure, you talked about diabetes and you talked about other things.

A large percentage of your testimony dealt with those particular types of -- we will call them prescription drugs, I guess, for lack of as opposed to control dangerous substances or illegal drugs. And the distinction I am drawing there is that one of them is -- talking about cocaine, heroin, PCP, those types of things maybe not

prescription drugs. If I am not using the term -- it is not a term of art, but you understand the difference -- prescription drugs versus other illegal drugs, right?

A Yes.

Q Okay. So would you agree that a large percentage of what you have testified to is really dealing with for the most part dealing with prescription drugs and people who are under certain -- have medical conditions that require those, taking certain drugs?

A Largely but not entirely.

Q Right. Right, exactly. Because you did talk about Methadone and how a person properly taking -- and this is I guess where I take the issue with but properly taking Methadone, would stabilize? That is what -- you did say that correct?

A I also spoke about marijuana.

Q But as far as Methadone goes, I mean we are talking about Heroin addicts who are in a Methadone maintenance program of some type, I believe your testimony was if they are properly taking the Methadone, that should stabilize them. And I think your words were you would “rather have” -- I think you said you would “rather have them on the road then” I can’t remember what the --

A That same --

THE COURT: Somebody in withdrawal?

THE WITNESS: Yes, that same person in withdrawal.

BY MR. DAGGETT:

Q Okay, thank you. Then somebody in withdrawal? But you would agree, would me not, that if somebody is not properly taking Methadone, there are going to be other adverse effects. And what would some of those adverse effects be if you do agree?

A I agree there would be other different effects.

Q We will say someone who is maybe who is maybe hoarding their Methadone. And they get or supposed to take a certain dosage a day and somehow they figure out a way to either hoard it or to get extra and they take more than they are supposed to take. What would the physiological effects be with something like that?

A Some degree of somnolence.

Q Of what?

A Sleepiness.

Q Okay.

A Some degree of inattentiveness. Things like that.

Q And would you not -- and again, yes or no, would you not agree that those types of things are considered -- would be considered or could be considered impairment? Impairment of one’s driving ability?

A Those things could impair driving.

Q So somebody who is taking too much Methadone, it

could cause effects that would impair their judgement and impair their driving ability?

A Yes, but the issue is can the DRE protocol --

Q But that -- I understand, we will get to that, but as far as specific use of drugs, misuse of those drugs can cause impairment that can affect your driving ability?

A Yes.

Q Now you have -- you said that you reviewed the DRE manual -- training manual, is that the 2010 or 2009 or another one --

A 2010, that is the manual from the course I took.

Q Okay and when did you get that?

A I believe it was July or August.

Q And I missed what you said, that was the manual from what?

A The DRE course that I took.

Q And when did you take that?

A Either late July or early August.

Q And why did you do that?

A Before I took that course, I had the same opinion that I have today. I thought that by taking that course, I might better understand why something that is shown to be as unreliable as it is, is continued to be used.

Q But what did you even -- I thought it was your testimony that you hadn’t even heard of -- when was the first

time you said you were contacted about a year ago -- did you say 6 to 12 months ago to be involved in this particular case?

A But that wasn't the first time I had heard of the DRE program.

Q Now the medications -- all the medications that you give to your patients, most of -- you would agree with me, would you not that almost -- most of those medications, whether it is for some sort of medical condition, they have warnings that come along with it.

A Yes.

Q They say, do not mix with -- "Do not mix with alcohol" "Do not drive heavy machinery" a lot of -- they have a lot of warnings, I guess.

A They are many different warnings, yes.

Q And by heavy machinery, I assume that means automobiles, trucks, vans, mini vans, whatever it might be?

A Yes.

Q So, and the reason that is is because the medications even if taken properly, can cause impairment of judgement or impairment of motor skills?

A Have the potential to but don't necessarily always.

Q Absolutely. Now I agree with you 100 percent. Have the potential to. And the only way you can -- you can't tell when you have a client -- when they come in -- I am

sorry, a patient, you can't tell what the reaction is going to be with that particular person in every facet of life.

A I can't tell what the response will be, particularly as -- with regard to cognitive impairment. At the time the medication is started or at the time a dosage is increased. But if a patient is cognitively taking a medication, cognitively intact, I have no reason to think that will change unless they suffer new disease or as I said, unless the dosage is increased.

Q Okay. So you -- so as far as the dosage goes, you are kind of at the -- you are kind of at the -- meaning you, at the mercy of the patient. Assuming that they are taking it when they are supposed to take it, assuming that they are taking the amount that they are supposed to take and with food, if it is supposed to be with food or on an empty stomach?

A I don't understand the question, at the mercy of?

Q I guess my question is -- when you prescribe and you do prescribe --

A I don't prescribe. I make recommendations and then I monitor whatever changes are made.

Q But like anything -- like any doctor, you can't possibly, you are not with your patients. It is probably a dumb question but you are not with your patients 24 hours a day? So you are basically at their mercy in terms of when

you recommend certain levels of medication, you are assuming that they are going to take it under the conditions that you want them to -- that you tell them to take it?

A Yes.

Q So if somebody misses a couple of days or three days and then just says well, I will just make it up and take extra or they feel like they have taken some too much and they are not going to take it, you have no control over that? Other than telling them not to do it, sure obviously.

A Yes. Yes.

Q I mean, that is a given. I mean, I don't think I have ever met yet a doctor that is going to say -- I am very limited on medications, you can say if you miss a dose, you can take two the next time. But for the most part, you are supposed to take it on a prescribed schedule that you tell them to?

A Yes.

Q And so -- but if they don't -- the effects are different? I mean, I think that is your testimony. That the effects can be different depending on how much they took, when the last dosage was, et cetera.

A Yes.

Q And the reason that is, the reason you want them to take the medications on a prescribed schedule, in a prescribed amount the way they are supposed to be is because

if they don’t, it increases the risk -- two risks, I guess. Either one it won’t work the way you hope it works or number two, because it increases the risks of causing adverse effects?

A Yes.

Q And by adverse effects, there is a wide range of adverse effects, certainly. But a lot of the adverse effects are things that can impair somebody’s ability to safely operate a motor vehicle?

A Depending on the medication.

Q Sure. Of course. Depending on the medication. But that is the reason why -- the two main reasons why, unless I am missing something, feel free but those are the two main reasons why you tell people what they are supposed to take and when they are supposed to take it. So it works better and so it doesn’t have adverse effects?

A Yes.

Q Okay. Is there anything else that I -- are there any other reasons why you would prescribe or the medications would be prescribed in certain dosage and certain requirements?

A I mean, there are a lot of small details but I think lack of efficacy or increased --- all of them would come under the banner of either lack of efficacy or increased toxicity.

Q And regardless of -- would you agree with me or would you not, that whether somebody is taking prescription medication for a medical condition or if they are taking a prescription medication for abuse. They want the high. Whether it is Oxycodone or whatever it might be. They want the effect. The impairment would be the same or could be the same?

A Would not necessarily be the same.

Q But all right, well let’s put it this way. For whether somebody is taking a prescription medication for a medical issue and they abuse or misuse the prescription, their impairment would be just as dangerous or could be just as dangerous when they are behind the wheel of a motor vehicle?

A In some cases I would agree and in other cases, I would not.

Q All right.

A Other instances I would not.

Q Okay, well give me a couple of examples?

A Patients who are Opiate dependant, they initially take the Opiate because they want to feel good. As they become dependant, they no longer take the Opiate because they want to feel good, they take it because it keeps them from feeling bad. So they may be taking a higher than intended dose. It keeps them from going into withdrawal. It keeps

them from feeling bad which is the motivation for taking it.

But it is not necessarily going to produce impairment. It may change blood pressure, it may change pupil size, it may change heart rate but it doesn't necessarily produce cognitive impairment.

Q Absolutely, I have no objection -- I have no argument with that. That is exactly true. However, one of the -- Mr. DeLeonardo said and as you have learned from taking the class, the totality of the circumstances that the DREs are looking for. And the first and foremost, is they have to determine whether a person is impaired.

A They are asked to determine if they are impaired based on the totality. Unfortunately they only have information about a small bit of the entire totality that it would be necessary for them to know --

Q Sure but aren't you --

A -- to make a reliable decision.

Q -- aren't you really talking about at that point, you are talking about the -- you are not talking about the DREs' ability to determine whether somebody is driving or their motor skills are impaired. You are talking about some sort of other impairment?

A I don't understand the question.

Q The DRE is looking for evidence of impairment. Some sort of motor skills impairment, would you not agree

with that? Because that is really the only thing that matters as far as driving a motor vehicle?

A Blood pressure, heart rate, muscle tone, those really aren't an impairment in operating a motor vehicle.

Q Of course not. They are not. But they are indicators of possible -- and you would agree that every one of those things and we are not going to go through every one of them, but you would agree that every one of those things has possible medical reasons or possible misuse of drug use?

A Possible presence of drug use.

Q Right. Sure. Right.

A But not present to the point necessarily, of producing impairment.

Q Oh, I don't argue with that either. I mean, nobody here is saying that because somebody has high blood pressure, or rapid pulse or slow pulse, that they are impaired.

A But it is that totality of information much of which could be irrelevant to impairment upon which the officer says you are impaired or you are not.

Q You as a -- in your clinic, when you are dealing with patients, you ask them a lot of questions. You want to know their history, their background and as much as you can.

A I have access to their full medical records and I get a detailed history on top of it.

Q And I am not in any way saying that you don't do

anything the way you are supposed to do it. I am not attacking you that way. So please don't think so. But the DREs are entitled and by the protocols, they do ask. As you took the class, they are required to ask are they not, the people that they come in contact with when they are doing the evaluations, they are asking for medical history. Are you taking any medications, do you have any illnesses that requires these medications? When is the last time you took the medication? That type of thing. Aren't they taught to do that?

A My understanding is that they are asked, do you have any physical disabilities that would limit you in these tests and are you taking insulin.

Q That is all that you learned in your --

A And medications.

Q And medications. And taking medications, what are you taking the medications for? So wouldn't you agree that in that particular situation a person is likely to -- they are pulled over for suspected DUI, when somebody asks them questions about the medications they are talking, they are liable to be honest?

A What does that officer have --

Q Sir, you are answering a lot of my questions with questions. And that is not really fair. That was a yes or no question.

A Could you repeat the question please?

Q They are asked -- would you agree that somebody who is asked what medications they are taking, when they are being interviewed in this setting, DRE setting, that they are going to be honest? If they are taking medicine for a physical medical issue, there is no need to hide that, would you agree?

MR. DELEONARDO: Your Honor, I am going to object as to the speculative nature of that. I mean, he is being asked to conjecture as to what a person who has been arrested is now being questioned after Miranda is going to say? I mean, I think the Court can decide that but he is being asked -- I mean, I think it is pretty much of a conjecture upon conjecture thing that he is being asked to say.

THE COURT: I will allow it. I will overrule. You can answer if you think you can.

THE WITNESS: I don’t think I can. I can’t tell you what percentage of patients --

BY MR. DAGGETT:

Q I didn’t ask you -- I will put it this way, would you agree with me that a person who is taking a particular medication via for diabetes or depression or heart issues or whatever it might be, is much more likely to be open and honest than a person who is illegally taking heroin or cocaine?

A I can’t answer the question. I don’t know.

Q You talked about -- and we will come back to that. But you talked about the studies, the Heishman Studies and when was the first time you studied the or read the 1996 and 1998 Heishman studies?

A Probably two to three years ago.

Q Now, are you fam -- how familiar are you -- are you comfortable if I ask you a couple of questions about the studies, are you comfortable answering them? We will give it a shot.

A Depending on the question, I may need to refresh my memory.

Q Sure. Now, in the Heishman Studies, you would agree that the DRE -- the subjects that were being tested were not allowed to say and the DREs were not allowed to ask if the subjects were given any particular drugs?

A That is my understanding.

Q But one of the main and one of the first questions in the DRE protocol is that they are taught to ask the subject what if any medications they are taking?

A Yes.

Q And the DRE in the Heishman Studies, they were also -- the DREs were basically lied to in the sense that they were told that there maybe certain combinations or there maybe these drug issued when in fact, they were not.

A It was a paradigm to test the validity of the DRE observations in predicting impairment. Those would be the conditions under which you would need to do that.

Q So that basically -- so the police were lied to -- I say lied, but they were deceived shall we say when they were asked to do their evaluations?

A That is one way of putting it.

Q Okay. And would you not agree with me, that in a setting, when the DRE comes into play to do an evaluation, it is highly unlikely that a defendant is going to lie and say yes I was taking heroin when in fact, they were not?

MR. DELEONARDO: Objection, same argument. He is speculating as to what someone is going to say after they have been given more ---.

MR. DAGGETT: It is a hypothetical --

THE COURT: Well, I think I can almost take judicial notice of the fact that somebody is not taking heroin, they are not going to say that they are.

MR. DELEONARDO: Then I would say that the question then becomes as to when they took the heroin.

THE COURT: Yes. There are a lot of other variables, but -- I haven’t seen anybody in recent memory who fessed up to using heroin when in fact they did.

MR. DAGGETT: That is -- thank you, Your Honor, that was the question. That was basically what I was asking.

BY MR. DAGGETT:

Q So in both the Heishman and the S&S study, the DREs were kind of -- they had some of the arrows taken out of their quills so to speak in that they weren't allowed to use the entire protocol to try to more accurately determine the -- what drug is being used?

A The studies were designed to eliminate confirmational bias. That is what you would need to do to do a true test of the test.

Q But they were not allowed again, and if you have made it clear that you think the Heishman study is a significant study and you believe in it. My question to you is, is it not true that the DREs were not allowed to use all the weapons at their disposal, so to speak, to try to best ascertain what drugs -- what categories of drugs were being abused or used?

A That is the study design, yes.

Q Okay. Now, you talked about -- there is a lot of symptoms, a lot of -- there is no question the different drugs have different effects on different individuals. I think we all agree to that. But how about blood shot eyes. Medical and chemical reasons it can cause blood shot eyes, correct?

A Yes.

Q Watery eyes, medical and chemical reasons that can

cause watery eyes?

A Yes.

Q Flushed face? Medical and chemical?

A Yes.

Q Slurred speech, I think one of your examples was somebody with slurred speech or at least this may be the case in New York. I know the case in New York you talked about slurred speech and I can't remember if you talked about it here today. But slurred speech can be caused by medical causes and also by abuse causes.

A Yes.

Q And erratic driving and by erratic driving, talk about perhaps weaving or I guess there are so many different types of erratic driving, but those can be caused by medical conditions and also can be caused by abuse -- and I say abuse. You know what I am talking about -- talking about abuse, alcohol abuse, drug abuse --

A Drug induced causes?

Q Yes.

A Yes.

Q So there are certain driving -- poor driving that can be caused by both?

A Yes.

Q Same as HGN, I mean, would you agree that HGN -- a lot of medical reasons why HGN exists or is present but it is

also -- and there is no question it is related to alcohol and also certain type classes of medication?

A I would agree.

Q So HGN is --HGN can be a factor, can be a symptom, I am not saying it is or always is, but HGN can be a symptom of certain drug use -- certain classes of drug use?

A Yes.

Q And do you know what those classes are?

A Drugs that cause a depressant effect within the central nervous system are -- not all drugs that cause a central nervous system depression but those that do cause nystagmus tend to be drugs that produce a CNS depression.

Q We -- and I think we have heard -- we heard yesterday -- where you here when Dr. Janofsky was testifying?

A No.

Q Tell me if you agree with this or if you disagree or if you don’t know, that is fine too. But CNS depressants, that is what you just said could cause HGN?

A Let me -- yes but I would like to -- can cause clues on the HGN examination.

Q Okay. So CNS depressants can do that?

A Yes.

Q And inhalants or inhalants, I guess is how Dr. Janofsky pronounced it, I am not sure which one is correct but inhalants that can also cause HGN?

A I looked specifically in the clinical literature and there isn't much on acute effects of the inhalants. But I wasn't able to find anything in the clinical literature yay or nay, number 1 and number 2, when you say inhalants, that is a wide spectrum of volatile gases.

Q I think Dr. Janofsky, the question to him was glue, gasoline, kerosene, paints, that type of stuff. So you don't know about -- you don't know enough about --

A I don't know enough about inhalants to answer the question.

Q Okay that is fair enough. And what about dissociative aesthetics, PCP, Ketomine, things like that?

A Again, I don't know the clinical literature with regard to those medications well enough to be able to say whether I think they would routinely and reliably cause clues on the HGN.

Q Okay but if Dr. Janofsky said that they could, that wouldn't surprise you?

A No, it wouldn't.

Q I mean, you wouldn't take issue with that one way or the other?

A No.

Q But you are just not sure. Okay. So we will -- at this point, we will just say that HGN does have medical and chemical -- can be caused by medical and chemical ---?

A Yes.

Q Balance issues, I mean, I think there is no question and I guess we will all agree that balance that balance can have -- can be effected by both medical and chemical abuse?

A Yes.

Q Failure to obey or remember -- either obey or remember simple commands?

A Could be both.

Q Could be both. So basically a lot of the symptoms, probably just about every symptom that the DRE is looking for, it is your testimony then that could also be caused by both substance use -- drug use or abuse or have a medical reason for it or medical cause?

A Yes.

Q And the DRE since you took the training you would agree with me, would you not, that the DRE is -- doesn't just, he doesn't just spend a little bit of time with the driver, with the defendant or the suspect? Part of the other protocols is he interviews the arresting officer. You learned that. And he interviews the arresting officer to determine whether any drugs were found or any prescription vials were found. Things like that.

A That is what the protocol is, yes.

Q Okay. So that is one of the things that they are

required to do.

A Yes.

Q Now obviously during the Heishman Study, they weren't allowed to -- that wasn't really an issue so they really weren't allowed to talk to the on the scene arresting officer because it didn't apply?

A It allowed by not having the introduction of bias, it allowed a much more --

Q And sir, I appreciate that but --

MR. DELEONARDO: I think he is answering you --

MR. DAGGETT: I don't think he is, Your Honor. Every time I ask him a question, he tries to explain why the Heishman Study is so --

THE COURT: Well, let's do this --

MR. DELEONARDO: Then I will object --

THE COURT: -- let me introduce a novel concept. Where possible, Dr. Gengo will answer yes or no and unless Mr. DeLeonardo waives his right of redirect, he will have the opportunity to come back and clarify any of those answers.

MR. DELEONARDO: That is fine, but I would also -- I mean, he is getting the same answer. I would object on the fact that we have already covered that question. He has already asked him multiple times did he get to interview and did he get to know ahead of time what the answer was. He has indicated that over and over.

MR. DAGGETT: That is the first time I talked about interviewing the arresting officer.

THE COURT: All right, I will allow it.

BY MR. DAGGETT:

Q So they weren't allowed to do that --

A There was no arresting officers, no.

Q Of course, of course absolutely there wasn't. They are also taught to look for other things regarding -- and again, since you took the training, you understand and knew that they are also taught to look for other indicia of substance abuse. Whether it is -- I mean, it can be as -- something as simple as the smell of marijuana or it can be something as simple as maybe flecks of paint on somebody's nose or mouth where they were inhaling or inhaling an object that had been recently spray painted.

A Yes.

Q So DREs are taught to look for those types of things?

A Yes.

Q They are also taught to when interviewing -- and I think I said earlier -- when interviewing the arresting officer, they are taught to ask if any other evidence of drug use was found at the scene?

A Yes.

Q And wouldn't you agree that -- and we will call the

DRE at this point a fact finder, ultimately a fact finder means something different to us, it means the judge or the jury but as far as this particular issue meaning, to give an opinion by the DRE --- he is the fact finder and he is trying to ascertain as many pieces of evidence as he can to form a judgement?

A Yes.

Q Now would you agree with me that if a subject is impaired to the ability that they cannot safely drive a motor vehicle, that impairment would be whether it is because they are misusing medication or they are taking medication and maybe the way they are supposed to take it and they are having adverse effects. So it effects their driving. They are still impaired.

MR. CRUICKSHANK: Objection to the form of the question. The question used the word “and” about four times. So to use it conjunctively like that, and after and after and, poses difficulties for him to answer.

MR. DAGGETT: Well, if he can’t answer it, I will repeat it. I will rephrase it.

THE WITNESS: I can’t answer it yes or no.

BY MR. DAGGETT:

Q You can’t answer it yes or no or you can’t answer it because you couldn’t understand my question?

A Both.

Q All right, good, that makes it simple, we will start over. If -- would you agree with me that a person can be -- their driving abilities can be equally impaired whether they are misusing medication or they are having adverse effects to medication?

A That is true.

Q And a person can be equally impaired if they are abusing non-prescription medications?

A Yes.

Q So as far as driving ability goes, impairment is the same regardless of the circumstances?

A Not necessarily.

Q But if their driving ability is impaired, so that they cannot properly drive safely drive a motor vehicle, you would agree with me that it doesn’t really matter what the reason, if it is one of those three, would you not?

A Which three?

Q The three that I said, somebody is either abusing illegal narcotics, they are abusing prescription drugs or they are taking prescription drugs and their ability to drive a motor vehicle is impaired because of the effects that it is having on them. They are equally impaired?

A No.

Q They are not?

A No.

Q What is the difference?

A Depending on the drug, depending on the patient, different abilities can be impaired. They wouldn't all -- not all abilities would be expected to be equally impaired in all of those circumstances. And depending on the drug, some drugs have effects on various "driving abilities" that others do not.

Q Okay. Absolutely. I don't disagree with that either. But if somebody -- I am talking about somebody, a DRE who makes an assessment at somebody's driving abilities or their -- is impaired, it can be based upon any one of those three equally.

A Yes, assuming it is an accurate categorization as impaired.

Q And not a medical -- not a medical cause?

A And not a simple error.

Q Sure --

A Because of the flaws in the DRE process.

Q But -- okay. You also -- I believe a lot -- it was page -- and I marked these in the order that Mr. DeLeonardo gave them to me. I don't know if your particular Power Point had a page number. But it was page 13, or it was slide 13, do you have a hard copy? Okay, you have it up there. Now my page 13 says -- it is probably not -- starts out "information needed but now know to the DRE officer", so this is --

A When this turns off, it locks up and you have to redo the whole thing, I apologize.

Q Okay. Do you have a hard copy of this? It is going to look like “information needed but not known to --“ I had it marked 13.

A Yes.

Q In that whole section there about -- would you not agree that pretty much everything the DRE -- it presupposes that a blood sample or toxin analysis was done? Would you not agree -- I mean, as far as you said to actually determine the specific category of drugs, the only ones they have to have -- I believe you said you have to have a blood sample. I mean, that is the only way to be 100 percent sure. Correct?

A Yes a blood sample would be the best chemical -- a quantitative blood sample would be the best chemical evidence.

Q Okay. But a quantitative -- I think you already said a quantitative blood sample will not be determinative of whether somebody is impaired or not. It can’t be done?

A Not in isolation.

Q Right. So, that whole -- that whole category presupposes that there is a blood sample given. Right? Because without a blood sample, without a blood sample then obviously you will never get toxicology?

A Counselor, I am sorry, I don’t understand the question.

Q Okay. Most of the factors that you said that a DRE needed to know before he can give an informed opinion, presupposed a toxin result.

A As I understand the question, then no.

Q Well, then how can you ever be sure -- how could you ever be sure unless you have a toxin result, how could you ever be sure that the DRE is correct?

A That is my point. Under the best circumstances, there is a DRE report that comes back consistent with a quantitative blood analysis.

Q And that presupposes that there is a blood analysis. And one of the -- is it not true that when you getting trained, that one of the protocol -- one of the -- I believe, one of the things that a DRE is supposed to do is in fact, try to get a blood sample. Ask the defendant to give a blood sample?

A Ideally yes.

Q And are you aware that in Maryland, they don’t have to do that? That the -- by they, meaning the suspect, doesn’t have to provide a blood sample?

A I don’t know the law.

Q You are not aware of Maryland law. Okay, that is fair. You talked about one of the things -- again, you

talked about the steady state, I believe. You talked about the steady state of -- explain that again if you would.

A Most drugs that affect the central nervous system are very --- fat soluble. So they are eliminated from the body slowly. They are partitioned from blood into atapost tissue and then they leave the body from going slowly back out of fat tissue so that by the time you take your next dose, not all of the previous dose has been eliminated.

And as you take subsequent doses, each dose will stand on top of whatever residual drug there is remaining in the body until you reach steady state which is now a condition where during the dosage interval, as much drug as is coming in is going out and concentrations remain ---.

Q And that again in order to do that, you have to have the blood sample? You couldn’t do it without a blood sample?

A In order to do what?

Q What you just talked about, the whole theory of this steady state, you have to have a blood sample to find out what the level of the --

A No, I am not connecting the two concepts.

Q Steady state talks about the levels of the toxicology in the blood, correct?

A Yes.

Q Okay. So in order to get that and to determine

those levels, you have to have a blood sample.

A Yes, but that wasn't the point.

Q Well, maybe not to you, sir, but it is -- what about alcohol? Now, would you agree or disagree that without a defendant taking a blood test or a breath test, that the police can make observations and give an informed educated opinion based upon those observations of the defendant?

A Yes.

Q So they can do it for alcohol but you don't think it can be done in drugs?

A No, not with anywhere near the reliability.

Q But if somebody -- you just said earlier that every single indicator of alcohol abuse or misuse or impairment, blood shot watery eyes, red flushed face, balance and everything else can have medical reasons.

A Yes, but I am really not following your question, sir. I apologize, but I am not.

Q You said that every person that -- every factors that apply to alcohol impairment can have a medical reason, medical cause. Blood shot watery eyes can have a medical cause or it could be alcohol. Nystagmus could have a medical causes or it could be alcohol, you agree with me?

A Yes.

Q And you agree with me that an informed and educated police officer can give his opinion of alcohol abuse or

impairment based upon his observation?

A He is entitled to his opinion, yes.

Q Yet you don’t think they are entitled to their opinion when it comes to drugs? Other drugs. Alcohol is a drug, I assume. Yes.

A The opinion with regard to drugs will be much more unreliable as compared to the opinion with regard to alcohol.

Q Okay. But would it be -- are you talking about the classification of drugs, the specific drug or just the impairment by drugs?

A Impairment by drugs. Well, both.

Q Both? So in another words, it is your testimony that people who are impaired by drugs are much more likely to have medical causes than people who are impaired by alcohol? Showing those symptoms or explaining those symptoms.

A That is one possible reason.

MR. DAGGETT: Mr. Wells has a couple of questions, Your Honor.

THE COURT: Mr. Wells?

MR. WELLS: Thank you, Your Honor.

CROSS EXAMINATION

BY MR. WELLS:

Q Good afternoon, Doctor.

A Good afternoon.

Q Doctor, just briefly generally, you said that you went to a DRE school is that correct?

A I took a DRE course, yes.

Q A DRE course.

A Yes.

Q Where did you take the DRE course?

A In Dallas, Texas.

Q Who taught this class?

A Lance Platt.

Q Who is -- I am sorry, I didn’t mean to cut you off.

A Dr. Lance Platt.

Q Was Dr. Lance Platt associated with the IACP?

A At one time he was, yes.

Q At one time? Okay. At the time that you took this class, was he associated with the IACP?

A No, he is a former member of the Texas Police Department and he used to supervise the Texas DRE program.

Q Used to. Okay. Was this a sponsored DRE class or was this a defense oriented class teaching people how to go after the DRE protocol?

A It was precisely the same curriculum, precisely the same manual and precisely the same training that Dr. Platt previously had given to law enforcement officers.

Q Now who was this given to?

A It was largely defense attorneys.

Q Now when this is going on, did they have or were you taught about the evaluation procedure within the DRE protocol? The certification procedure -- let me rephrase that, I apologize, that is not a clear question. With regards to a person becoming a DRE, they have to be certified, is that correct, is that your --

A That is true.

Q Okay. Are you familiar with the requirements for a person to be certified as a DRE?

A Generally yes.

Q Generally. Okay because this wasn't taught through IACP?

A That is true.

Q Okay, this is taught by somebody who was teaching essentially a class to defense attorneys?

A As someone who is not a law enforcement officer, I wouldn't be able to sit for any other course.

Q Okay. So, you also are aware that with the certification procedure, that the DRE applicants, the ones who have finished the teaching portion of the class actually also have to sit through evaluations or former evaluations themselves? Is that correct?

MR. DELEONARDO: I am going to object. We haven't qualified him as a DRE expert. He indicated that he attended a class and that was it. So we are now getting into what is

required by IACP. I assume we have DREs that we are going to bring in to testify as to that but he has indicated that he doesn't know.

MR. WELLS: Your Honor, if I may -- he indicated that he took a DRE course and now with clarification this is now a class that was taught by defense attorneys -- excuse me, taught by a former DRE solely to defense orientated people. He however, did say that he took a DRE course and I am asking him to the level of teaching, he was taught about this course.

Because he is saying the DRE has been taught this and has been taught this and has been taught this. I want to know exactly what he knows about the DRE being taught with regards to his testimony.

THE COURT: All right, I will overrule.

MR. WELLS: Thank you.

BY MR. WELLS:

Q And it is not in general, I am only going after a certain few things, I am not going to go through a whole lot with specificity with a whole lot of teaching. With regards to the certification process, excuse me, certification process, you are aware that they have to do evaluations, correct?

A Much like the evaluations I do on patients.

Q Sure, exactly. Drawing your attention, you have a

hard copy of your slide, page 8. It says “current system” is the heading on the top.

A Yes.

Q Okay, the second part says, “The State’s expert is usually an individual who’s training is laboratory rather than clinic based.” Now isn’t it true that in order for a DRE to be certified, they have to have, like you said, a clinical evaluation or a clinical -- a laboratory type deal where they do real evaluations in order to become a DRE?

A I was referring to the State’s toxicologist.

Q Oh, well that takes care of that question.

A Pardon me?

Q I said that takes care of that question. I apologize. Now, I am going to ask you specifically a hypothetical and assuming just the information that I am giving you -- I will set out some parameters. We don’t know anything about alcohol or excuse me, we don’t know presence of alcohol, presence of drugs or a medical reason behind it. Based on these scenarios, if a person was driving and they exhibit poor driving, i.e. they cross the center line a few times, they were pulled over and if I go too fast, let me know okay. Because I do have a tendency to move through.

The exhibited -- the driver exhibits slurred speech. Exhibited unsteady gate getting out of the car after the officer asked him to step from the car. Went through the

battery of field sobriety tests and got six out of six clues on the horizontal gaze nystagmus test. The walk and turn test, he stepped off the line, six out of nine times ---. He did the turn wrong on the walk and turn test.

Stepped on the line six out of nine times on the way back. Missed heel to toe along all steps. Failed to follow instructions. Then did the one leg stand test. He put his foot down eight times. He swayed and nearly fell over and he counted 30 seconds -- approximately 30 seconds as being closer to 50.

Based upon that information and that information alone, knowing nothing else, would you be able to determine whether or not -- excuse me, strike that. Would you believe that person is not able to drive a motor vehicle safely? From that information alone?

A You said poor driving?

Q Crossed the center line.

A Egregiously or just touched the line?

Q Fair enough, crossed over twice by a foot and a half.

A Likely unfit to drive.

Q Okay, so you would agree that that person would not be able to drive safely based on that information?

A On just that information.

Q Clear and I agree with that. Now, would you agree

with as stated in one of the other Power Point slides that you had in there, that the stated -- whether or not you agree it, but the stated reasons that the DRE protocol are to determine whether or not a person is impaired, whether or not it is due to drugs or a medical reason and in order to -- and also what category of drug that they are on. Is that correct?

A Yes.

Q Those are the three stated reasons, whether or not you agree with them, that is what they are stated as, correct?

A Yes.

Q Okay. Now, with regards to that, you indicated on page 12 and if you want to, make it a little bit easier --

A What is the title of that?

Q That is “Drugs and Driving Consensus” report from the Journal of American Medical Association.

A Okay.

Q And that is after you put in your specific finding, does that make sense? Where they bold is there --

A Yes, yes.

Q Okay. Part two, “Concentrations of the drug and or its metabolites and body fluids can be accurately and quantitatively measured and related to the degree of impairment produced.” Do you see that?

A Yes.

Q Below that in bold is the part that you added, “Blood pressure, heart rate, body temperature, pupil size related to the degree of impairment.”

A Yes.

Q Okay. Now I understand all of that. Now isn’t it true that one of the goals of the DRE program is to determine what category of drug that they are under?

A Yes.

Q Okay. Blood pressure? Is that useful in determining -- is that an indicator of some drugs that are taken to the level of abuse?

A Not exclusively.

Q Okay, but it is an indicator?

A Pardon me?

Q It is an indicator?

A Yes.

Q Okay. Same thing with heart rate?

A Same answer, it is --

Q Body temperature? All of these? If I have to go through them I can, but I don’t see any --

A All of these are -- can be but are not exclusively indicators of presence of drug or of impairment.

Q Got you. And you indicated just previously that given the example -- the hypothetical that you can determine

right there and then that you can -- you would determine that the person based on the walk and turn, the one leg stand, the HGN test, that the -- to corroborated bad driving, that that person is impaired. Not able to drive safely?

A Likely.

Q Okay, likely. So likely a DRE based upon running somebody through those same exact symptoms can determine whether or not a person would be able to drive a motor vehicle safely, independent of the other reasons?

A True.

Q Okay. Thank you. And I am not going to go step through step but you listed some of the other examples throughout your report, specifically multiple sclerosis and that having caused muscle tones, speech depressive symptoms, balance, stress and incontinence as being things that the DRE could possibly confuse with being under the influence? Is that correct?

A Yes.

Q Okay. And I think you mentioned additionally diabetes or an insulin effect or lack of insulin effect that I think was listed as one.

A Common -- an array in common symptoms in diabetics.

Q Sure. Sure, fair enough. Now, with the -- definitely not class, but the defense course that you took for the DRE evaluation, it did tell you that they do ask the

person after they have been arrested if they have any medical issues?

A Yes.

Q Specifically diabetes?

A Ask if they take insulin?

Q Yes. Which would be related to diabetes, correct?

A Not all -- most diabetics do not take insulin.

Q Okay. Additionally multiple sclerosis, you would agree that multiple sclerosis at many levels is fairly apparent, is that correct?

A Actually it is known as the Great Impersonator.

Q I didn't --

A No. The answer is no.

Q Okay. I have no further questions.

MR. DAGGETT: I did have two more that I meant to ask earlier and that will be it.

CROSS EXAMINATION

BY MR. DAGGETT:

Q But Doctor, you spoke and you were a featured speaker in July of 2003 at the National College for DUI Defense. Were you not?

A I was one of a member of several faculty.

Q And the topic that you talked was Pharmacology as a Defense to a BAC of 0.08 or Higher?

A Yes, that was the title. It is not a title that I

chose.

Q But the fact of the matter was, the subject that you spoke at was for defense attorneys and it was Pharmacology as a Defense to a BAC of 0.08 or Higher?

A Same answer.

Q Thank you. Nothing further.

THE COURT: Redirect?

MR. DELEONARDO: Thank you.

REDIRECT EXAMINATION

BY MR. DELEONARDO:

Q Doctor, I am going to step through first of all, you were asked again you are being paid an hourly, correct?

A Yes.

Q An hourly rate?

A Yes.

Q What is your normal hourly rate?

A For research and review, $350 an hour, for testimony $500 an hour.

Q And we appreciate the discount. Let me ask you this as well. When you testify, you testify in civil and criminal cases is that correct?

A I do.

Q You don’t have the luxury of being on the State pay roll to testify here today? Is that right? You are not normally paid to be here, correct?

A True.

Q Now as far as you were asked about the categories and again, I heard repeatedly, it can, it can it can, is that true?

A Yes.

Q And if I understand your ultimate opinion is that while these things can, you have to have the ability to make a medical judgement at some point whether it is, true?

A Either a medical or a pharmacologic.

Q Okay. Now, and you were asked about alcohol and can't someone give their observations in court, is that right?

A Yes.

Q You said that was okay with their observations, how someone staggered or how they walked, right?

MR. WELLS: Your Honor, at this point in time I don't know if he is going to get to certain areas he wants the doctor to address, is one thing but there is a lot of leading going on.

MR. DELEONARDO: I am trying to move him to the area, that is all.

BY MR. DELEONARDO:

Q Do you remember that? You were being asked about whether it is okay for an officer to come in and testify as to alcohol cases about observation?

A Yes, I mean, the officer is always entitled to his opinion with regard to an arrest no matter what the circumstances.

Q Would that opinion change if the officer were attempting to come in and give an opinion as to someone's exact blood alcohol content based on those tests?

A The officer can provide an opinion -- my understanding, the officer can provide an opinion with regard to what he observed.

Q Right.

A I can -- he cannot -- I don't believe he can offer an opinion as to what the blood alcohol concentration would be.

Q Right. And you would agree that even the field sobriety tests, well let me step back and I will let you take a look. Are you familiar with any validation research in the field of field sobriety tests?

A Generally.

Q Let me see if you are aware of this one? Are you familiar with the work of Marcelene Burns?

A Yes.

Q And she was the one who was behind if you can recall -- how do you know her? Let me step back.

A She was involved in the development and alleged validation of the standardized field sobriety tests.

Q And do you know whether or not those tests were validated to show driving impairment?

A The specifically were not and Dr. Burns has testified that they specifically were not.

Q So, as to that aspect of it, there are other reasons why someone could not perform well on these tests?

A A multitude yes.

Q So, based on Mr. Daggett's question about offering an opinion, would you believe an officer in an alcohol case could come in and render an opinion that someone was impaired by alcohol and no other medical reasons? Do you think that would be appropriate?

A No.

Q Now you were also if we could go to the studies, again I guess you were only questioned as to Heishman, let me direct your back to Shiner, because it was indicated that lack of poor performance on field sobriety tests would be something the officer could observe in reaching a conclusion? Do you recall that?

A Yes.

Q Are there categories of drugs that have -- that even the matrix does not actually say you would see lack of coordination?

A Can I see the matrix?

Q I will show you what has been marked as Defense

Exhibit 11, which is a compilation of the matrix from the manual, is that familiar to you?

A Yes, it is.

(The document referred to was marked for identification as Defendant’s Exhibit 11.)

BY MR. DELEONARDO:

Q And that sets out all of the general indicators and major indicators, is that correct?

A Yes.

Q And in the general indicators, it indicates that there are certain categories of drugs that will show lack of coordination, but not all. Is that correct?

A Under general indicators not all of them have mentioned motor impairment or uncoordination.

Q And is it -- is that for example, a CNS stimulants that actually they may perform better on these type of tests, is that correct?

A Well, it wouldn’t be expected to impair coordination.

Q Okay, fair enough. And if I could show you what has been previously marked as Defendant’s Exhibit 10, if I can direct your attention to this side of the page. The Shiner Study, what did they say as to the use of coordination and the signs and symptoms by a non-medical person? What

were they able to do?

A Well, they didn't make their decisions based on the totality of the observations within the protocol. They waited their decision based on in some cases coordination and in some cases clues on HGN. Even if the drug they were alleging was used, wouldn't be expected to produce motor uncoordination or clues on HGN.

Q So if you could, it says in summary, what did they determine in summary whether or not the DRE was --- do this totality of circumstances in ---?

A In summary, it appears that the officers tended to base their diagnoses primarily on one or two signs or symptoms and then ignore the remaining signs or symptoms even when they were inconsistent with the DECP recommended guidelines for identification of that drug impairment.

Q Okay. And as far as -- if you could read the next sentence on that?

MR. DAGGETT: Your Honor, I am going to object to this. It is the report -- the report is in, the report speaks for itself. He is now just trying to attempt to -- I am not sure what he is attempting to do but he is having a person who is unrelated to the study, just read into the Court what it says in there. The Court has it in evidence and can draw its own conclusions.

MR. DELEONARDO: Just establishing so I can ask

some follow up questions to it.

THE COURT: And the follow up questions are coming when?

MR. DELEONARDO: Well, I just wanted him to read that and ask him if he agrees with that. I mean, that is -- and then I am going to ask him some questions about what was being asked by Mr. Daggett. It was just one more sentence, that was it.

THE COURT: All right. Doctor?

THE WITNESS: “This reinforces the conclusion that the officers had difficulty in simultaneously evaluating all information available and all of the observed signs and symptoms.”

BY MR. DELEONARDO:

Q And in addition, you would agree with me, Doctor, that some of the signs that they based it on was essentially like a raised pulse rate or tremors that you spoke of, correct?

A Yes.

MR. DAGGETT: Objection, leading.

THE COURT: Don’t lead.

BY MR. DELEONARDO:

Q What were some of the signs and symptoms that they relied on as pivotal signs in this study?

A “They relied on for identification of a depressant,

they relied on increased temperature and possibly reduced pupil diameter under direct light. When they believed the impairment was due to a narcotic, it was based on lower temperature and slightly constricted pupils. When they believed the impairment was due to a stimulant, they relied on enlarged pupil in the dark and increased horizontal gaze nystagmus.

Although this approach simplified the officer's task, it is not sensitive enough to the true complexities of drug effects and consequently it also likely lead to the erroneous observations -- erroneous conclusions."

Q Okay. And in addition, you were asked about a lot of steps including the --- statement from the person?

A Yes.

Q These studies didn't allow them to actually interview the person, remember those questions. Let me ask you, in the manual does it say whether or not they have to follow all of the steps?

A Actually the manual seems to give them some leeway in being able to use some steps if they want and not use others if they don't.

Q So let me ask you, if a person were to invoke their constitutional right not to give a statement after having been arrested, is there anything in the manual that says they couldn't still reach a conclusion?

A No.

Q So in all fairness, this study tests their ability to do that as well, correct?

A The study as I tried to say when I was being asked the same question, took away confirmational bias --

Q Why is that important in research?

A You are -- hypothesis being tested in those studies was can an officer, using these observations, make a reliable judgement as to whether they are impaired, make a reliable opinion as to whether it is drug or medical and make a reliable judgement as to which category of drug.

Q Okay.

A If the officer knows that there was a bottle of Lortab in the car, human nature is he is going to look more closely at those end points specifically related to Opiates and it is going to bias the testing of the hypothesis which is can using these observations, can the officer reliably detect impairment? Can he reliably discern drug induced impairment from medical causes and can he accurately and reliably identify the class of drugs in those seven classes that this individuals are taking?

And clearly the data from those studies indicates that that hypothesis should be rejected.

Q Okay. And you were also asked about observations like flushed face, slurred speech, those kind of things. I

guess they would be kind of considered general indicators in the matrix, is that correct?

A But subjective, I mean, how red does my face need to be before your eyes call it flushed as opposed to another officer. There has not been any studies that show that two officers being examining -- doing the evaluation on the same individual in close temporal proximity, necessarily come out with the same opinion.

Q In addition, you were asked about well, what if they tell you what medication you have and you indicated earlier that a lot of the medications are actually miscategorized, correct?

A Yes.

Q And so I assume that would also be -- are you indicating that is a problem for the DRE officer to also figure out what to do with the information assuming he gets it?

A Not really. What I meant was, if -- as a clinical pharmacologist I have access to the patient’s entire medical record and I have an opportunity to step through each of the medications that they are taking for each of their diseases. That is very different than a simple question, are you taking medications and what are they?

Q And in addition to that, however, you would agree that in the training manual it actually tells the DRE or do

you know whether it tells the DRE whether or not they can make a prediction as to what someone's impairment was, sometime in the past?

A That is implicit that they are making the observation and implying that it would be the same as at the time of operation and depending on the half life of the drug, or one of its clinical pharmacological characteristics, there may be very different changes in the individual's response to that drug in either direction.

Q Okay and to that point, when you were asked about, well doesn't that mean that they couldn't drive at the time, do you see on there the duration of effects that is listed on the matrix?

A Yes.

Q What is your pharmacological opinion as to what the officer is informed on the duration effects of the drug?

A It is all but meaningless and the reason I say that is for example, under the category of central nervous system depressants, this includes a wide and varied group of medications that are all in different classes. Includes everything from quaaludes to Venlafaxine to Zopadone. And the duration of effect for each of those drugs can be very different.

So to say that the duration of effect of a drug in a CNS depressant group and say tranquilizers, Valium is a

tranquilizer and it has a 10 to 12 hour half life. Medazalam* is another Benzydiazepene, a tranquilizer, it has a two hours half life. So the drugs that are all grouped into one of these categories are so varied, that the duration of effect listed here is next to without information.

Q Now if you know, is there any time period upon which a DRE must conduct their evaluation to be able to render opinion?

A I don’t know.

Q Okay. And you would agree with me, or I guess do you agree that the fact of whether that evaluation is done one, two or three hours after the fact could change the pharmacological effect that it is having in the person?

A You would have to tell me more about the person and the medications that they are taking.

Q It would be a variable that would have to be considered as well?

A Yes.

Q Is there anything in this that tells them how to consider a time period between when the person was stopped and when they are evaluated?

A No. Because again, these seven categories are so vague and they contain such a diverse group of drug classes that this -- these duration of effects, contain little or no useful information.

Q And just to be clear, you were asked about that -- someone who had -- let me step back, why is prescription drugs such an issue as to this as it is not to alcohol? You were asked about the fact that you talk so much about prescription drug, why is it an issue? In this evaluation that it wouldn't be as to alcohol?

A We all have the choice to drive after we drink or not. But in most of the circumstances where we are looking at driver's taking medications, their medications that they need for legitimate medical purposes, they don't have a choice to take that medication and do or don't drive. It -- and in most cases, it is not causing any impairment if they have been on it -- based on all of the circumstances that I have talked about.

But it is different from alcohol because when one drinks and drives, it is a choice. Usually a choice.

Q You were asked about inhalants and there are signs and indicators for inhalants. If the DRE were to evaluate that person an hour or an hour and a half after they were stopped, would the drug recognition expert in your opinion be able to determine whether that person was impaired at the time they were being evaluated to now?

A Not by observations of impairment by the individual rather only by circumstantial evidence such as a can that is found in the car or there is paint around their mouth, but he

would not be able to observe indicia of impairment, it would have passed.

Q So in inhalants, they say that HGN would be present, vertical nystagmus and high doses would be present, lack of convergence, reaction to light would be slow, pulse rate up, blood pressure up and down, body temperature to be up and down or normal and muscle tone flaccid. Would the inhalant still be acting on them at that time when they did the evaluation?

A Depends on how long has passed.

Q Well, let’s assume it has been an hour and a half or two hours?

A No, it wouldn’t.

Q So these indicators when they are trying to determine that would they be of any help for DRE?

A Only in the sense that if you found cans in the car and paint on their mouth, he would know how to describe the individual.

Q Very well. Now you were asked some questions about the training that you had, can you get certified as a drug recognition expert? Do you know?

A No, but the course I took was the NHTSA course taught by a former director for DRE in the State of Texas, using the NHTSA curriculum.

Q Right. But they actually -- you are not permitted

to be able to get certified correct?

A As a non-law enforcement officer, no.

MR. DELEONARDO: That is all the questions I have, Your Honor.

RECROSS EXAMINATION

BY MR. DAGGETT:

Q You would agree, Doctor, that a police officer on the road doing their evaluation, the field sobriety tests, they don’t have the luxury of going over a driver’s complete medical history because they wouldn’t have it?

A Exactly the point.

Q So you -- you are saying -- so they don’t have that luxury, they have to give their opinion based upon all of the factors that they have before them?

A Yes. Excuse me, was that alcohol or drugs?

Q Well, quite frankly I am talking about either.

A You are talking about the arresting officer, not the DRE?

Q No, I am talking about either. Talking about the DRE or the arresting officer. They don’t have the --

MR. CRUICKSHANK: Objection. Object to the form of the question because it is a compound question.

THE COURT: Overruled.

THE WITNESS: Well, that is my point -- they don’t have that information and it is information necessary to

reliably opine about the effects of a drug.

BY MR. DAGGETT:

Q But not at the -- if the client or driver refuses the intoximeter, they don't. And he wouldn't have the toxin result. Agreed?

MR. DELEONARDO: Your Honor, I am going to object. Not sure if we are mixing apples and oranges, obviously the Court knows what the legal standard is for alcohol when an officer is permitted to testify. What we are here to determine is what they are allowed to testify as to drugs. So I don't -- again I don't understand --

THE COURT: Well, I think the Doctor's first answer was that his point is, at least in the case of the DRE that because that information is not available, he has an insufficient basis from which to render an opinion. Now, Mr. Daggett, says it is a luxury and I think one of the earlier witnesses that testified for the State, I am not sure who it was, said ideally it would be great to have a doctor riding around in the patrol vehicle to assist the DRE.

But I think that really is the point. I am going to sustain.

BY MR. DAGGETT:

Q And Mr. DeLeonardo asked you about the difference between somebodies -- they had to take certain medications because they have some sort of medical conditions. And is it

your testimony then that if those -- even if they have a medical condition, and they are taking medication that impairs them, that they should still have the right to drive a motor vehicle?

A I disagree with that.

Q Well you said the difference between drugs and alcohol is alcohol people take -- drink by choice. And a lot of prescription drugs people are taking prescription drugs because they have a medical condition that requires that, correct?

A True.

Q But if they take those medications and if they either abuse them or take them incorrectly and it causes them to be impaired, if they are on the road driving a vehicle, they are still impaired --

MR. DELEONARDO: Your Honor, if I could just ask him to define impairment in the question. Is he referring to not having a high blood pressure or is he referring to behavior impairment driving?

MR. DAGGETT: Talking about behavior impairment and I think the Doctor understands that.

BY MR. DAGGETT:

Q They are just as dangerous on the road whether they abuse the prescription drugs or whether they took them and they took them incorrectly or they drove when they weren’t

supposed to drive because they were taking medications?

A I agree with that but it defines the minority of individuals taking these medications who are driving.

MR. DAGGETT: Nothing further.

MR. DELEONARDO: That is all we have for the Doctor now.

THE COURT: Dr. Gengo, in 2003 or 2004 when you gave a presentation on pharmacological defense to 0.08 BAC, can you elaborate on that?

THE WITNESS: Sure. Yes. My general intent in lecturing to groups like that is to have them get some appreciation for the genuine valid pharmacology of alcohol and to recognize good science and not try to bring into the Court junk science.

So I went through if memory serves me, one example I believe was in the instance where someone is involved in a car accident, their blood is drawn and run assayed in a hospital laboratory which uses not a gas chromatography direct measurement of alcohol but an indirect measure using a dehydrogenous enzyme system.

And if they sustain significant injury, so that there is a release of lactate by the muscle or if they have received an infusion of ringer’s lactate, then the -- because of the assay procedure used by the hospital, they will have a false elevation of their blood alcohol. So if their blood

alcohol is measured to be 0.10, but measured after significant injury or after ringer's lactate solution infusion, it is inaccurate and it is not necessarily above 0.08. Things like that. As opposed to if you suck a penny, you can beat the breath test.

THE COURT: We had some testimony yesterday which talked about 0.08 and the DUI per say statute which Doctor Janofsky essentially said that the 0.08 was a legislative public policy decision. And in Maryland, we have two offenses, we have driving under the influences of alcohol which is the more serious offense and driving while impaired by alcohol which is the lesser offense.

If you have a 0.08 blood alcohol concentration, you are per say guilty of driving under the influence. The example you gave I mean, could that elevation be significant based upon the factors that you described?

THE WITNESS: What I am saying is, under the -- in that specific example, the laboratory would be making an error in reporting a value that is not reflective of what is truly in the patient's blood. That would be one example where they had apparently a BAC above 0.08 but due to problems with that assay and those circumstances, it would be very unlikely -- it would be most likely to have artifactually increased what came back from the lab.

THE COURT: All right, thank you.

THE WITNESS: Thank you.

THE COURT: Now, Dr. Gengo is -- we have concluded his testimony.

MR. DELEONARDO: Yes. We have concluded and he is ready to catch a plane. We are going to try to get him down to Baltimore.

THE COURT: You are going to drive --

MR. DELEONARDO: I think Mr. Cruickshank actually is going to drive.

MR. CRUICKSHANK: Speed limit.

THE COURT: Don't hit any speed bumps, don't go through New Windsor, that will definitely slow you down.

MR. CRUICKSHANK: Church Street, Judge.

MR. DELEONARDO: I think tomorrow we intend to have Dr. Adams begin in the afternoon, I think we said 1:30.

MR. CRUICKSHANK: Just to let the Court know and the State's Attorney, he would be available on Thursday as well. If we don't finish his testimony tomorrow, we could finish it on Thursday.

THE COURT: Okay.

MR. DELEONARDO: I guess that is the other issue is, additional days.

THE COURT: All right, well we will get to that.

MR. DELEONARDO: Okay..

THE COURT: Dr. Gengo, thank you very much. It has

been very illuminating.

(Witness is excused.)

THE COURT: We do have Thursday available. My plan would be to start at 10:30 on Thursday. I have handed off -- I have a few criminal matters to hear in the morning. But hopefully we will get started by 10:30. Then we will have the rest of the day. But that is with the stipulation that we are going to finish.

MR. DAGGETT: We are not going to finish.

MR. WELLS: We are not.

THE COURT: We are not going to finish?

MR. DAGGETT: No.

THE COURT: Then why am I worrying about Thursday?

MR. CRUICKSHANK: Well, what I would say as far as my expert is concerned, that if we start -- his availability, he is not available the next week and I am not sure when he is going to be available, so I am just giving the Court the opportunity to hear all of his testimony at once and I think it would be important for the Court to hear it as well as for the State’s Attorney to hear it all at once.

THE COURT: Who are we talking about?

MR. DAGGETT: I don’t have any problem with that. I don’t have any problem with doing it on Thursday and letting them finish him up and I know that one of our next witnesses is not available on Thursday and or Friday.

THE COURT: Well, I don't know that I will be available Friday but -- well, so how much additional time -- how much additional time beyond Thursday?

MR. DAGGETT: Actually I think that if we can have, if they say finish up Thursday morning -- we can call -- we were actually going to call Officer Morrison last but we can actually move him up a little bit and call him Thursday afternoon, hopefully that should take care of that and then we would only have one maybe two more witnesses which shouldn't be more than a day.

THE COURT: Okay, if we didn't get to Officer Morrison on Thursday, would that create a problem for him or for you?

MR. WELLS: Your Honor, with regards to Officer Morrison's schedule, Officer Morrison is not available the following Monday and Tuesday. Officer Tower the other one is not available at all next week.

THE COURT: And your expert is available next week?

MR. CRUICKSHANK: He is not available next week, but what I would anticipate, Your Honor, if he starts tomorrow afternoon at 1:30 and then continues Thursday morning, he will be done by 1:30.

MR. DAGGETT: And he is out of state too, right?

MR. CRUICKSHANK: He is back now. So he will be done.

THE COURT: So if that happens, then --

MR. CRUICKSHANK: They can put their expert on --

THE COURT: -- for half day on Thursday. Will that be enough?

MR. DAGGETT: That will be enough to get us close but we still have another one or two more witnesses after that.

THE COURT: Right. But would you anticipate finishing your witness on Thursday or --

MR. WELLS: Officer Morrison?

MR. DAGGETT: I'm not --

MR. WELLS: After him, I don't know. Honestly I don't know. I don't think so.

MR. DAGGETT: We can give it a shot. He has been up here. We will give it a shot.

THE COURT: All right, well if -- I mean, it sounds like we are coming back and you know, I don't know that it will be next week. Sounds like some witnesses aren't available next week. And you know, so far we have probably taken more time with the witnesses we have heard so far than maybe anyone anticipated. So, we will spend as much time as we need.

But I would like to -- this is the kind of thing I don't like to have -- I mean, I am obviously not rendering any decision from the bench. I will warn everybody. I am

going to require written closing to be submitted. I want -- this is something that I think needs to be looked at closely and so, we will take as much time as we need.

MR. DELEONARDO: I appreciate that, Your Honor.

THE COURT: All right, now, probably need to take your stuff with you because we are going to have some people in here tomorrow morning.

MR. DAGGETT: So you want us here -- we are not due here tomorrow until 1:30 anyway, so --

THE COURT: 1:30, right.

(Whereupon, the hearing concluded.)

C E R T I F I C A T E

CompuScribe, hereby certifies that the attached pages represent an accurate transcript of the duplicated electronic sound recording of the proceedings on September 28, 2010 in the Circuit Court for Carroll County in the matter of:

CRIMINAL NO. K-10-040259
STATE OF MARYLAND
v.
CHARLES DAVID BRIGHTFUL

CRIMINAL NO. K-10-040331
STATE OF MARYLAND
v.
HARVEY ALEXANDER CARR

CRIMINAL NO. K-10-040167
STATE OF MARYLAND
v.
JENNIFER ADELINE FLANAGAN

CRIMINAL NO. K-09-039370
STATE OF MARYLAND
v.
RYAN THOMAS MAHON

CRIMINAL NO. K-09-039569
STATE OF MARYLAND
v.
CHRISTOPHER JAMES MOORE

CRIMINAL NO. K-09-039636
STATE OF MARYLAND
v.
VALERIE ANN MULLIKIN

CRIMINAL NO. K-10-040300
STATE OF MARYLAND
v.
RONALD DALE TEETER

By:

_____ _____
Lisa N. Contreras, Transcriber Date