It is now about ten to eleven, and we're still a little bit of ahead of schedule. Is Dr. Hertko here?

ED HERTKO: Yes.

LLOYD JESSEN: Would you like to go next, Dr. Hertko? Thank you.

ED HERTKO: Are you running 20 minutes ahead?

LLOYD JESSEN: We are.

ED HERTKO: Anyway, my name is Dr. Edward Hertko, and I've been a physician in the state of Iowa for the past 50 years. Before I start my paper -- and I'll read it, and the paper is called "Deja Vu. Medical Marijuana, Where Are You?"

Let me explain. Back in 1979, I appeared before a legislative forum who at that time then referred the problem of marijuana to the pharmacists. Now we're doing it in reverse. We're going to the pharmacists to refer it to the legislature.

However, being a student of the Bible, this also brings me to mind in the book of Genesis where the Jewish nation was going to the promised land. They wandered around in the desert for

40 years. And then they got to the promised land, and they sent 13 spies into the promised land, and they came back. Eleven people said "Oh, my God. You cannot go in there. The people are huge. They're probably over 5 foot 7."

And two people said "Go in. Do it." And they were Caleb and Joshua. But they went back out into the wilderness for 40 years, turned around and came back. When they got there, Moses saw the promised land. He died, but Caleb and Joshua got in.

So here we are with this position now because I'm back here 30 years later with the same problem. So I don't know whether I'm Moses and going to die or whether I'm Caleb and Joshua who are going to be able to see something happen.

And with that, I'll read my paper, which I called "Deja Vu. Medical Marijuana, Where Are You?"

Ladies and gentlemen of the Iowa Board of Pharmacy, thank you for allowing me to address you regarding this subject. I did the same thing 30 years ago to the Iowa legislature. I will focus only on the medical use of marijuana, not its recreational use. The people who need recreational

marijuana already know how to get it.

A bill was approved on June 1, 1979, which appropriated $247,000 to the Board of Pharmacy Examiners which was contingent upon the Board of Pharmacy Examiners establishing a therapeutic research program within 90 days of the effective date of that act.

The board was mandated to organize a physician advisory group to advise the board on the structure of the program which was never operational. Today therapeutic research program laws are no longer effective because of federal obstructionism.

The dual scheduling scheme still exists in the statute. But the language for the therapeutic research program Administrative Code 620-12 was active October 1, '79, to June 30, 1981. And then it eventually was removed in 1987, and it is now currently just symbolic.

Should suffering patients be criminalized? There were approximately 830,000 arrests, 99 percent by local, not federal, officials in the United States in 2006. 89 percent of these were for possession, not sale or manufacture, of marijuana.

Even if only 1 percent of those arrested were using marijuana for medical purposes, then there are more than 7,000 medical marijuana arrests every year.

Here we are 30 years later in Iowa, and the marijuana debate continues unceasing regarding marijuana and its use in medical spheres. Since 1979, and especially since the mid-1990s, there have been numerous studies that have shown that many patients suffering from AIDS, cancer, multiple sclerosis, epilepsy, Lou Gehrig's disease, severe or chronic pain, severe nausea and vomiting secondary to chemotherapeutic drugs, severe or persistent muscle spasms, and other debilitating illnesses that find that marijuana provides some relief from their symptoms.

Available prescription drugs often come with far more serious side effects than marijuana. And many patients -- That doesn't count, does it? And many patients who find relief from marijuana simply do not respond to other prescription medications.

In 1999 the Institute of Medicine, which you already mentioned, showed there was great relief for -- for marijuana. In 1988 after

reviewing volumes of evidence on marijuana's medical use, the Department of Enforcement Agency chief administrative law judge, Francis Young, found that maintaining marijuana as a Schedule I drug would be unreasonable, arbitrary, and capricious and that marijuana in its natural form is one of the safest therapeutically active substances known to man.

Last year in 2008, the American College of Physicians, of which I am a member -- I have been a fellow of the American College of Physicians since 1968 -- came out with a position paper on the therapeutic role of marijuana in certain conditions but also -- came out with a -- pardon me. I skipped a line -- which stated the conclusion evidence not only supports the use of medical marijuana in certain conditions but also suggests numerous indications for the cannabinoids.

Additional research is needed to further clarify the therapeutic value of the cannabinoids and determine optimal routes of administration. The science on medical marijuana should not be obscured or hindered by the debate surrounding the legalization of marijuana for general use.

The position paper of the American College of Physicians also stated, quote, given marijuana's proven efficacy at treating certain symptoms and its relatively low toxicity, reclassification would reduce barriers to research and increase availability of cannabinoid drugs to patients who have failed to respond to other treatments.

Since 1996, 13 states have enacted laws that effectively allow patients to use medical marijuana despite federal law. Those state laws have removed criminal penalties for patients who use and possess medical marijuana with their doctor's approval or certification. These laws are working well, enjoy popular support, and are protecting patients.

Data have shown that any concerns about these laws increasing youth marijuana use are unfounded. Eleven of the thirteen medical marijuana approved states that have produced before and after data have reported overall decreases in teen marijuana use exceeding 50 percent in some age groups. It has been said that it is easier for a teenager to buy pot than a six-pack of Coors.

Right now under Iowa law, it's illegal

for seriously ill patients to use medical marijuana under the supervision of their physician. If the patient with one of the devastating diseases stated earlier desires the use of marijuana, they then must grow it illegally or buy it on the criminal market.

Therefore, cash goes into the purses of drug dealers or drug gangs instead of into the coffers of the State through manufacture, distribution, registration, and taxation of marijuana which could add up to hundreds of thousands of dollars yearly.

If a patient is charged with a possession of marijuana, is it possible to use medical necessity as a defense? Yes. It is possible for -- it was possible for a judge to allow an individual to raise a medical necessity defense based on the state having a symbolic medical marijuana law, and in Iowa, that happened. An Iowa judge ruled that a medical marijuana user's probation could not be revoked for using marijuana because the Iowa legislature had defined marijuana as a Schedule II drug with, quote, currently accepted medical use, unquote.

Of note, Iowa moved marijuana into

Schedule II in 1979 when it enacted a therapeutic research program. The research program expired in 1981, but marijuana schedule remains in place. A 2005 national Gallup poll found that 78 percent of Americans support making marijuana legally available for doctors to prescribe in order to relieve pain and suffering.

For over a decade, polls have consistently shown that 60 to 80 percent support for legal access to medical marijuana. Prominent health and medical organizations including the American Academy of HIV Medicine, the American Nurses Association backed it in 2003, American Public Health Association, Leukemia/Lymphoma Society, Lymphoma Foundation, and like I stated earlier, American College of Physicians.

At the present time, marijuana is a Schedule I drug which means A, the drug has a high potential for abuse. This is not true when compared to other drugs such as Valium, Xanax, sleeping pills, and other opiates which are much more addictive and are not Schedule I drugs. Beer and tobacco are much more addictive.

The drug has no currently accepted medical use in treatment in the United States.

This is not true. Just read the medical literature.

There is lack of safety for the use of the drug under medical supervision. This is not true. Francis I. Young, chief administrative law judge, said on September 6, 1988, quote, marijuana in its natural form is one of the safest therapeutically active substances known, unquote.

It is time to legalize the passage of a law in Iowa allowing doctor-advised medical use of marijuana. Let physicians certify deserving patients with debilitating conditions which have been previously mentioned to receive the medical benefits of marijuana which likely outweighs the risks. Drug abuse is bad. But drug wars are worse.

One thing that I have also is where is the harm in drugs? And one of the things you have to do is when you talk about a drug, you have to bear in mind, what is the harm? Reducing the harm of marijuana is a public health philosophy that seeks to lessen the dangers that marijuana abuse and policy causes to society. .

Reduction in the harm policy is a comprehensive approach to drug abuse and drug

policy. Harm reduction's complexity lends to its misperception as a drug legalization tool. Reduction in the harm of marijuana rests on several basic assumptions.

A basic tenet of harm reduction is that there never has been, is not now, and never will be a drug-free society. A reduction in harm strategy seeks pragmatic solutions to the harm that a drug -- in a drug policy causes. It has been said that harm reduction is not what's nice, but it's what works.

What does that say on that?

DEBBIE JORGENSON: You have five minutes.

ED HERTKO: Five minutes. Good. A harm reduction approach acknowledges there is no ultimate solution to the problems of drugs in a free society and that many different interventions may work. These interventions should be based on science, compassion, health, and human rights.

A harm reduction strategy demands new outcome measurements whereas the success of current drug policies is primarily measured by the changes in use rates. The success of a harm reduction strategy is measured by the changes in rates of

death, disease, crime, and suffering.

Because incarceration does little to reduce the harm that any ever-present drug causes to our society, a harm reduction approach favors treatment of a drug addiction by health-care professionals over incarceration in the penal system.

Because some drugs such as marijuana have proven medicinal uses, a harm reduction strategy not only seeks to reduce the harm that drugs cause but also to maximize their potential benefits. A harm reduction strategy recognizes that some drugs such as marijuana are less harmful than tobacco, cocaine, alcohol, methamphetamines, and many others.

Harm reduction mandates that the emphasis on intervention should be based on relative harmfulness of the drug to society, a harm reduction approach that advocates lessening the harms of drugs through education, prevention, and treatment.

Harm reduction seeks to reduce the harms of drug policies, dependent on an overemphasis on interdiction such as arrest, incarceration, establishment of a felony record,

lack of treatment, lack of adequate information about drugs, the expansion of military source control intervention efforts in other countries, and an intrusion on personal freedoms.

Harm reduction also seeks to reduce the harms caused by an overemphasis on prohibition such as increased purity, black market adulterants, black market sale to minors, and black market crime.

A harm reduction strategy seeks to protect youth from the dangers of drugs by offering factual science-based education and eliminating youth black market exposure to drugs.

Finally, harm reduction seeks to restore basic human dignity to dealing with the disease of addiction. Thank you.

LLOYD JESSEN: Thank you, Dr. Hertko. And thank you for summarizing the history that this board has had with this issue, which I think is something the public is not generally aware of.

I do have a couple questions for you. The board has been following what's happening in other states that have medical marijuana such as California and Colorado. I assume you follow that as well?

ED HERTKO: Oh, yes. I followed this last week in the paper. The amount of money that they're going to gain, and I'm thinking Iowa needs money. Why don't we legalize it and tax it? Like one guy says, legalize it and tax the hell out of it.

LLOYD JESSEN: The question I have for you is, if medical marijuana was approved in Iowa, would you have a recommendation on how distribution of marijuana occurred here given the fact that it happens in different ways in different states?

ED HERTKO: The only way that I would be in favor of it is the same way when I was in practice. I would write prescriptions for Phenergan, for morphine, for codeine, for any of the drugs and so forth, and I would do the same thing here, that I would write a prescription, which is a legal document which then would take it to a legal dispensary for a pharmacist who has been brought up to date on how to fill that thing so that you have some idea of who is getting it, and it all has to be legal.

LLOYD JESSEN: Thank you. Some states use what they call a compassionate care center, and another alternative would be to have licensed

pharmacies dispense the marijuana. How do you feel about that?

ED HERTKO: If I were going to do that, the first place I would do is I would go to California because they're the ones whose law -- when you're dealing with 13 states, like I've read the articles from every one of the states, and some of them are really to the -- far to the left or whatever you want to call it, and over in California, I think they've gone a little bit too far, and some of the stuff they're doing, it almost sounds like they're doing like a Neverland. You can just walk down the street and buy marijuana and hashish and so forth, and you buy it just the same as cigarettes. But I think that's a little much.

I think at this point in time I don't think we're quite ready for that sort of a situation to arise. I would be favor of legalizing it, but it has to be legally dispensed through a prescription from a practicing physician or practicing health physician. I don't know what the law would be.

But hopefully, though, we will take this and just add it to the aramatarium that physicians and other people and health

professionals can go ahead and use it because I personally think that marijuana does have a place and a legal place. As far as the recreational, as I said earlier, those people already know how to get it.

LLOYD JESSEN: So in your opinion, would you favor dispensing by a pharmacy rather than what other states call compassionate care centers?

ED HERTKO: No. I would first go with that. I don't think -- I don't think -- that came later because they've been doing that for years in California. I don't think they did all that compassion centers -- I don't think that was Day 1. I think that came later.

I would go with the legal part through -- legally dispensing it through a pharmacy and go with that, see how it runs, and then if you want to change it later to something else or add something else, but I'd first -- I'd go out to California and find out how they're doing it and figure out "Oh, I ain't going to do that to start with."

LLOYD JESSEN: Any other questions from board members? Thank you, Dr. Hertko.

If I could please ask the audience, I know you're enthusiastic about many of the comments that are being made, and if you could please just hold your applause until each speaker has finished. I'm just worried that if we get a lot of people who want to speak throughout the rest of the day, we want to be sure we have time for them, and if we have to pause every time we have applause, that's going to slow us down. So I appreciate the fact you want to applaud, but if you could please just applaud when each speaker has finished, that would, I think, be fair to everyone who might want to speak today.

Let's take a five-minute break so that our shorthand reporter can have a little rest, and we'll be back in about five minutes.

(Short recess.)

LLOYD JESSEN: Okay, everyone. We're ready to start again, and we have two doctors from Washington State, and I believe -- are you fellows with the College of Medicine there?

SUNIL AGGARWAL: Yes, sir.

LLOYD JESSEN: Okay. I'll let you introduce yourselves and if you -- when you start, if you could please spell your names for the

record.

SUNIL AGGARWAL: Okay. Thank you, Lloyd. My name is Sunil Aggarwal. I am a medical scientist training program trainee at the University of Washington School of Medicine. I have completed a Ph.D. in medical geography studying the medical geography of cannabinoid botanicals in Washington State.

I'm currently a fourth year medical student at the University of Washington. And my name is spelled S-u-n-i-l A-g-g-a-r-w-a-l.

GREG CARTER: Okay. Hi. I am Greg Carter, G-r-e-g C-a-r-t-e-r. I am a professor of rehabilitation medicine at the University of Washington. I was a part of Sunil's doctoral committee, and we have done research together on what he referred to as cannabinoid botanicals, just so you know what we're talking about. And I have been at the University of Washington for 15 years. I've got over 120 peer-reviewed journal publications.

And I have a website if you're interested in my full qualifications. You just Google my name, and the University of Washington has a bio page that pulls everything up for you.

LLOYD JESSEN: Okay. Thank you.

SUNIL AGGARWAL: Did you want us to talk, or do you want to ask questions? I'm not sure how you want to do the format.

LLOYD JESSEN: Thank you for introducing yourselves. We'd just like you to make whatever comments you want to make, and then we might have questions for you.

SUNIL AGGARWAL: Okay. Great. Well, thank you again for inviting us to speak, and I want to commend the Iowa Board of Pharmacy members for taking this -- this step to look at the science and current practices around cannabis.

I would -- I would suggest that we do discuss this plant as its scientific name, which is cannabis, just -- just like we talk about other -- other drugs and substances with their scientific name rather than their slang name when we talk about medicine, so you don't want to put, you know -- you don't want to put your pediatric patients on ice. You put them on amphetamine or methamphetamine derivative, and you know, you don't use blow in your nasal surgery. You use cocaine.

So it's important that we don't use this slang word because oftentimes, that gets

associated with a lot of the sort of prevailing social mythologies around -- around cannabis.

So my comments, basically what I want to center around, a couple of the issues that the board is considering with regards to the current medical use of cannabis in the United States and some of the science around that.

So as you know, there are 13 states now in the United States that have active medical cannabis programs. Roughly, I'd say between 7 and 8,000 physicians in those 13 states have authorized the use of cannabis for their patients, maybe about 400,000 or so now.

You all know there are four patients in an active federal program that's been going on for three decades. One of the federal patients, as you know, lives in Iowa. They receive a supply from Mississippi, and that Mississippi program has supplied cannabis to -- in at least 33 clinical trials conducted in the United States with smoked cannabis for the treatment of a variety of conditions.

I sent Mr. Jessen a list, a huge list, of -- what do you call it? -- publications that have come out with that supply of cannabis. What's

interesting is that there has been about ten gold standard placebo-controlled trials conducted with what we call cannabinoid controls where your control group is oral THC pills.

About ten trials have been conducted since 1990 -- since, I think -- excuse me -- since 2001. And all ten trials have shown significant improvement in the cannabis group compared to the control.

These studies were conducted at major medical centers such as UCSF, UC Davis, UC San Diego, Columbia University, University of Chicago, and they were all published in pretty mainstream medical journals such as the Annals of Internal Medicine, Neurology, Journal of Acquired Immunodeficiency Syndrome, Psychopharmacology, Anesthesiology, et cetera, the Journal of Pain, and it's also important to note that we also have one constant style systematic review and meta-analysis evaluating the use of cannabis in chemotherapy-induced nausea and vomiting.

And one meta-analysis that combined 18 studies of cannabis or cannabinoid versus standard NTC meds showed a statistically significant difference in patient preference for

cannabis -- preference for one of the studies in favor of cannabis or its components.

So this is what's called Level 4 evidence, which is the highest form of evidence that's part of the standards of evidence-based medicine.

So as far as -- as far as the question posed whether cannabis has an accepted medical use in treatment in the United States, that is a -- that's what I hope my comments would address.

The question about whether there's an accepted safety for use in treatment in medical supervision, I've also sent to Lloyd a study that was called a Comprehensive Review of the Adverse Effects of Medical Cannabinoids, which was a systematic review of all controlled studies, clinical studies, that have been conducted with cannabis and cannabinoids and demonstrated that -- shows that there were absolutely no adverse -- serious adverse events that had taken place in the trials that have been conducted thus far. And that was published in the Community of Medical Association Journal in 2008.

I guess in general comments, I should mention that cannabis is a very old substance that

was evolved 37, 38 million years ago and has been used widely in many indigenous medical traditions around the world before it came to the United States.

The chemicals in cannabis, there's maybe 500 or so, and there are about a hundred or so cannabinoids in cannabis which interact with the body's endogenous cannabinoid system, which is 300 million years old in biology, and in recent years, recent decades, people were trying to come to understand that the cannabinoid system played a vital role in regulating appetite, mood, memory, inflammation, pain, muscle relaxation, even bone formation, and so it's the -- the system that has impacted cannabis has been validated through our understanding of the mechanism of action of this plant through the endocannabinoid system, and more research is continuing and hopefully will continue to determine the different varieties of cannabis, how they have various impacts in various disease models and conditions.

So I'll pass it over to my colleague, Dr. Carter, and we can talk more. Thank you.

GREG CARTER: Thank you, Sunil.

So I practice neuromuscular medicine.

That's my specialty, and my interest in cannabinoid medicine dates back probably 15 years when I first came up to the University of Washington. There was some other folks that were looking at cannabinoids as neuroprotectants.

And I take care of patients with Lou Gehrig's disease or amyotrophic lateral sclerosis, which you folks are probably familiar with. It's a very bad disease. It presents a unique set of clinical symptoms that's hard to manage.

And I started looking at some of the properties of cannabis, initially looking at the neuroprotective role and thinking maybe it was a disease-modifying agent but then looked more at what actually that produces pharmacologically including drying up the mouth, relieving pain, relieving muscle spasticity, improving appetite, perhaps improving mood. I said, well, this might really help ALS patients, and that's what I've been studying.

Actually, it does, and I published a first paper on that in 2001. We've had a couple of follow-up papers. I still think it also does have some significant potential as a disease-modifying agent or agents, cannabinoids in ALS, and there was

one mouse study done here at the University of Washington where we were able to show that the -- a model of ALS, which is a superoxide dismutation of a mutant mouse, lived 50 percent longer, and actually the process of the disease was delayed significantly in mice that were pretreated with a mix of cannabinoids.

From a practical standpoint, because I think that does count for something, I've probably taken care of upwards of maybe 4 to 500 patients over the years that have been actively using cannabis.

It's important for you to know I never recommend -- I never recommend to my patients to smoke cannabis. I always have them in a vaporizer. The cannabinoids are oil based, 21 carbon terpene compounds that are easily vaporized, aromatized at about 2, 300 degrees Fahrenheit which is considerably cooler than combustion, which is around a thousand degrees Fahrenheit, so you can aromatize the cannabinoids and just inhale them through a hot mist with a device called a vaporizer.

They also are quite active with oral injection. In fact, the half-life has been

slightly longer. I can -- I think Sunil might have some stuff on that he actually included in part of his thesis as well, but dosing versus -- you know, an inhaled versus oral metabolism.

I think it's important as a group of pharmacists to realize that we now know pretty factually how the cannabinoids work. We have CB1 receptors in our peripheral -- I'm sorry -- central nervous system and CB2 receptors in our peripheral nervous system.

They are a -- probably mediated at least in part through cytokine pathways, but it's getting more and more delineated exactly how cannabinoids produce their effect. Clinically speaking, they have about a three- to four-hour half-life if inhaled and maybe a six- to eight-hour half-life if eaten.

Sunil just reviewed a substantial part of my clinic population as part of his thesis, and that was 150 patients?

SUNIL AGGARWAL: 130.

GREG CARTER: 130 -- well, even that criteria, that did not include my ALS patients actually because we had to get a separate IRP for that, but there was no -- no dropouts, no

significant adverse reactions.

It didn't work for everybody, but it worked for the vast majority of people, and certainly my argument has been all along that the federal government schedules dronabinol which is 100 percent THC as a Schedule III, and then it turns around and takes a natural plant which has maybe 20 to 25 percent THC at best and makes it a Schedule I. That makes no sense whatsoever.

And it turns out that THC, which is dronabinol, 100 percent dronabinol, 100 percent pure THC, that is the most psychoactive cannabinoid. Many other -- cannabidiol, dronabinol, those compounds do not -- have not been shown to have significant psychoactive effects.

Our government really is -- you know, will allow physicians to phone in a prescription for the most -- 100 percent of the most psychoactive compounds in cannabis, but it turns around and makes the natural plant a Schedule I.

Now, again, and I've argued with folks from the DEA and what have you, and they say "Well, it's a raw fruit plant." Now, I would argue that, first of all, my personal opinion, I think our country has been taken over by the pharmaceutical

companies.

In the state of Washington last year, accidental overdose deaths from prescribed opiates surpassed deaths from motor-vehicle accidents. Now, there wasn't a single death -- there's never been a single death reported from the overdose of cannabis.

So if you want to look at this thing from a historical perspective back from the Reefer Madness days, Harry Anslinger was the first drug czar. He was in power at that time, and it was that man and his cronies that really led us on the path to opiate-based medicines instead of cannabinoid-based meds. That cost the lives of untold number of people.

I mean opiates -- at least in my practice where I deal with chronic neurodegenerative conditions, opiates cause constipation, respiratory suppression. You could get easily dependent on them, hyperallergies. They're very hard to work with.

Whereas cannabinoids, the dosage schedule is easy. Patient can self-nitrate for an effect. There's very little physical dependency. You can, of course, get psychologically addicted.

In my practice I'm not too worried about people with ALS getting addicted to anything, but the concern over addiction -- and I've debated with addictionologists -- well, sure, there's a point with that.

Unfortunately, you know, a certain percentage of our population is going to be addicted to any substance at any given time, and that's been around since the dawn of man. It exists in the animal world too. I mean creatures that have receptors and can modulate their perception of reality will use substances to alter their perception of reality. That's just the way it works in nature.

No matter what we do, there's always going to be a certain percentage of the population that's addicted, and the addictionologists will always have jobs, unfortunately. Prohibition has never been an effective strategy, never ever. Didn't work for alcohol. It's not working for any drugs.

I mean sadly to say, I think the abject prohibition of marijuana, at least in Washington state now, is to buy heroin for cheaper, and heroin and methamphetamine are considerably

cheaper than cannabis.

So I used to try to stay out of the recreational argument, but I just -- that's my two cents worth as a father of four kids. So I'll leave it at that.

LLOYD JESSEN: Thank you for all of those comments. I have a question for you. Based on your professional medical opinion, do you feel there is current scientific evidence to support the use of cannabis medically?

GREG CARTER: Yeah. I want to be -- I want to be perfectly clear about that, and I will state my reputation, my professional license, my DEA registration number on that.

With my right hand in the air, my left hand on my heart, I will state that in my professional opinion as a physician practicing over 20 years now that the scientific evidence to support the medicinal use of cannabis is overwhelmingly in favor.

SUNIL AGGARWAL: I also would like to concur with that opinion. This is Sunil Aggarwal again. I've actually reviewed the literature in a recent paper that I was first author on in the Journal of Opioid Management and the International

Pain Management Journal.

LLOYD JESSEN: Thank you. Any questions from board members?

BOARD MEMBER BENJAMIN: This is Verne Benjamin. I am chairman of the Board of Pharmacy. During your talk, I heard -- it seemed like I heard you say that your preferred way of using this drug would be through inhaled rather than burned usage because of the temperature differential?

GREG CARTER: Yes, yes. Let me clarify that again. So the vast majority of cannabinoids are found on the flower of the female plant, and they're oils. They are easily aromatized oils like most organic compounds. They're 21 carbon terpenes.

And you can -- at about 200 degrees Fahrenheit, they will go into a mist, kind of like aroma therapy. People who do that in spas and such, they'll put lavender and things and other essential oils into a mist.

You can do the same thing with cannabis, and that -- Donald Tashkin out of UC San Francisco actually looked at pulmonary function testing, and actually he looked at it with smoke as well.

It turns out smoked cannabis really -- I don't like to recommend people smoking anything, but smoked cannabis turns out to be not terribly bad, but I just don't like the idea of telling my patients to smoke. I'm very anti-tobacco, and it just puts me in an awkward situation, so vaporizer completely gets around that. There's no smoke. There's no odor, minimal odor.

And these devices are readily available.

SUNIL AGGARWAL: And sir, I just -- I sent a paper to Lloyd which is a study of the vaporization modality published in the Journal of Pharmacology, an experimental therapeutic.

It was -- it's an FDA-approved drug delivery device and has been studied in clinical trials, and that's one paper I've sent, characterizes the benefit of using this drug delivery device.

And it should be noted, though, some patients do smoke, and combustion -- combustion of cannabis does not produce the same effects on the body as combustion of tobacco. We just can't seem to find the epidemiological link between exposure and cancers as can be found with tobacco smoking.

You also can't find a link to COPD or emphysema, and these studies have been published in major cancer prevention journals, and the author that Dr. Carter mentioned, Dr. Tashkin did a very large retrospective study in the Los Angeles area showing that no link can be found, and a recent study published showed there was actually a decreased risk of cancer that they had in those who smoked cannabis for 10 to 20 years. That was published in Cancer Prevention Journal. I'll be happy to send the references.

But this also makes sense because we know cannabinoids have anti-apoptotic properties. Sorry. They have pro-apoptotic properties for carcinogenic cells and anti-apoptotic for noncarcinogenic cancer cells.

So the science -- there's a lot of interesting science on the cancer end of things, but the risk of smoking, of course, is soot and bronchitis and respiratory irritation, and we would rather circumvent those potential risks for our patients and recommend vaporization.

LLOYD JESSEN: Thank you. There appear to be a lot of problems with programs in states like California and Colorado.

If either of you are familiar with the programs in those states, could you respond to that, and do you have a recommendation as to how you think distribution of cannabis should occur if it is approved in a state?

GREG CARTER: Sure. Well, this is Greg Carter. I can address that. As a physician, it often is somewhat awkward when I give this diatribe on the benefits of cannabis, and then there's the elephant in the room about, well, where do we get the cannabis?

In Washington state we have co-ops that have websites, and so it's actually relatively easy. However, I've pushed hard to get the Department of Health here to take over. In my opinion, as a physician, I would like you all to be involved. I'd like to have the pharmacists on board.

I'd like to have state-authorized distribution where we can send our patients, and they would get, you know, quality cannabis -- and you can measure the content of cannabinoids. You can measure the THC content very easily, and now it's even easier to measure the content of other cannabinoids.

We haven't really gotten into the -- So let me answer your question by saying I'd love to see the government, state government, involved in that, and I would love to see pharmacies involved in that.

So the physician makes a specific authorization. The patient takes that to a state-authorized dispensary, and a pharmacist distributes the medicine in a medicine bottle with a label on it, just like we do other medicines.

And that does occur to an extent. The co-ops out here put it in a -- in a medicine bottle, but there's no pharmacist involved, which I think is wrong. I think pharmacists do play a huge role.

I prescribe a lot of dangerous drugs. I have basically hospice and palliative-level patients, so I'm unfortunately also prescribing a lot of opiates, and I have made good friends with a lot of pharmacists around here, and I depend on you guys to tell my patients, again, "Hey, this is a dangerous substance."

And I don't think cannabis is particularly dangerous, but it's always good to have a pharmacist go over again what they're

getting and how it's used.

And right now that doesn't exist because the patients go to a co-op. Now, some of these people in the co-op, I have to say, are peasant pharmacists, I guess you would call them, people that have picked up quite a bit of biochemistry and pharmacology just from doing this over the years, but I would -- I would be much in favor of, you know, the State controlling this just like it does, you know, State Board of Pharmacy as you all are controlling. Here's Sunil.

SUNIL AGGARWAL: Yeah. New Mexico and Rhode Island are probably the nicest cases to look at. And both of their legislatures have approved state licensing of their medical cannabis dispensary.

Unfortunately, California being the flagship state, '96, did not actually address distribution of cannabis. Neither has Colorado.

So what has happened is kind of a local -- local-level recommendation, and some places are better regulated than others. There was no attempts made at state-level regulation of distribution or what I call delivery sites.

Though that being said, there are some

places in California that don't get a lot of press but do an excellent job. For example, the City of Oakland has licensed just a certain number of dispensaries in their state -- I mean in their city. Excuse me.

And one dispensary called Harborside actually tests all their samples for mold and any other pesticides and does do gas chromatographic testing of their samples and labels the contents with the percentage of THC and in some cases a percentage of CBT, another important cannabinoid.

So they've been able to sort of self-regulate, but we can't always solely rely on, you know, the -- the goodness of dispensers to do this, and I think we should look at states like, like I mentioned, Rhode Island and New Mexico.

New Mexico has already started -- you can contact New Mexico Department of Health if you're a patient, and they will refer you to a state-licensed dispensary where you can go, and they even have a physician on staff as part of the board of these dispensaries. I don't know what role pharmacists play, but I'm sure they play a significant role.

Other countries, of course, have been

doing this for quite some time. Holland, the Netherlands has had a federally -- federally run prescription program where patients can go to pharmacies and fill their cannabis medical prescriptions.

Unfortunately -- their program is quite successful, very safe, but unfortunately patients prefer to go to the coffee shops because of -- likely probably because of access issues and availability.

So there are some models to follow, and California gets a lot of press, mainly because of the hundreds of dispensaries in Los Angeles, and now the City of Los Angeles is trying to kind of cut down the number of the dispensaries and trying to take out some of the real profiteers.

Colorado, I haven't heard that many problems about, but I'm aware that they also have no state-licensed system, but they have a few openly operating dispensaries, and they get thousands of patients, so they're trying to solve the problem as well.

LLOYD JESSEN: Well, thank you very much for all of your comments. I think that will be helpful to what we're doing, and I'll check to

see if either of our board members have other questions.

We don't have any more questions. Thank you very much for calling us today.

GREG CARTER: Sure. I just want to close by saying you're more than welcome, Lloyd, if you could give the board members there our e-mail addresses, certainly I know Sunil and I will be happy to answer any other questions.

And I always seem to think of questions about 20 minutes after the conference, so if there are further questions, we'd be happy to address them by e-mail.

LLOYD JESSEN: Thank you, and we will do that. Thanks.

SUNIL AGGARWAL: Thank you.

LLOYD JESSEN: Yes. Thank you.

SUNIL AGGARWAL: Thank you and enjoy your historic building in Iowa.

LLOYD JESSEN: Thank you. Bye-bye.

GREG CARTER: Bye.

SUNIL AGGARWAL: Bye.

LLOYD JESSEN: It is now noon, and we're going to break for an hour lunch, and we'll be back at 1 p.m., and we have about -- I think 20

to 25 speakers who have indicated they want to talk to us after lunch, so we will see you in an hour.

(Lunch recess.)

LLOYD JESSEN: Okay. Welcome back. I think we're ready to continue, and our next scheduled speaker is Gary Young from the Iowa Elks Association. Gary, are you here?

UNIDENTIFIED MALE: He's right here.

LLOYD JESSEN: Thank you.

GARY YOUNG: It's really set up to address the audience, not the board. Who would you prefer I speak to?

BOARD MEMBER BENJAMIN: We'll listen either way.

GARY YOUNG: My name is Gary Young, and I retired about two and a half years ago after a 35-year career with the Polk County Health Department. I worked as an environmentalist, and I continue to maintain national professional registration as an environmental health specialist emeritus.

I'm here today representing the Iowa Elks Association as a volunteer. The Iowa Elks Association is an association of 33 local Elks lodges in Iowa with about 12,000 members.

The Benevolent and Protective Order of Elks nationally has the largest volunteer youth drug awareness program in the nation. We are committed to help our youth make informed choices about drug, alcohol, and tobacco use.

Recently the Iowa legislature banned tobacco smoking in public places. This action was to protect employees and the public from the harmful effects of secondhand smoke.

Redefining smoked marijuana as a medicine would allow users to smoke in places where tobacco smoking is currently prohibited. If someone is taking medicine, you cannot prohibit them from where and when they take it.

A study published in 2001 in the British Journal of Psychiatry stated "Actions on specific brain receptors cause dose-related impairment of psychomotor performance with implications for car and train driving, airspace piloting, and academic performance. Other constituents of cannabis smoke carry respiratory and cardiovascular health risks similar to those of tobacco smokers."

The study concluded "Cannabis is not, as widely perceived, a harmless drug but poses