IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF PUERTO RICO

TROPICAL CHILL CORP., et al.	:	
Plaintiffs	:	
v.	:	3:21-cv-01411-RAM
PEDRO R. PIERLUISI-URRUTIA, et al.	:	
Defendants	:	

FIRST DAY OF PRELIMINARY INJUNCTION HEARING

Was held Before HONORABLE JUDGE MARCOS E. LOPEZ, U.S. MAGISTRATE JUDGE sitting in San Juan, Puerto Rico, on December 6, 2021 at 9:12 a.m.

APPEARANCES:

FOR THE PLAINTIFFS:

ARTURO V. BAUERMEISTER, ESQ. - (Via VTC)

JOSE DAVILA, ESQ. - (Via VTC)

ILYA SHAPIRO, ESQ. - (Via VTC)

FOR DEFENDANTS:

IDZA DIAZ, ESQ. - (Present in court)

JOSE R. CINTRON, ESQ. - (Present in court)

ELISABET GARCIA, ESQ. - (Present in court)

THE MAGISTRATE: Good morning to all.

MR. BAUERMEISTER: Good morning.

MR. DAVILA: Good morning.

MS. DIAZ: Good morning.

MR. CINTRON: Good morning.

MS. GARCIA: Good morning.

THE CLERK: You may be seated. Civil Case 21-1411. Tropical Chill and other plaintiffs versus Pierluisi Urrutia and other defendants. On behalf of plaintiffs, Counsel Arturo Bauermeister and Counsel Jose Davila. On behalf of defendants, Counsel Idza Diaz, Counsel Jose Cintron and Counsel Elisabet Garcia. Counsel Shapiro is joining the Zoom conference.

THE MAGISTRATE: Good morning, Counsel. As we spoke previously when we had the last status conference, I expect all those witnesses who reside in Puerto Rico to come personally to testify here at the hearing. If there are any witnesses that are not residents of Puerto Rico, I'm willing to make the exception so that we can allow them to testify by video conference.

I strongly urge both sides to be efficient. We have a significant number of witnesses and I can tell you, as I said to you back when we were at the status conference, that this Friday, it doesn't look like we're going to be able to have proceedings related to the Preliminary Injunction

Hearing. So, you need to maximize your time. There are other matters that could affect, even during this hearing, during this week, there are going to be a few interruptions. Not that many but they're going to be a few.

So, I strongly urge you to be efficient and I'm somewhat disappointed that I haven't heard any stipulations reached by the parties but if that's the way it is, that's the way it is and we'll proceed.

So, without any further delay, Mr. Bauermeister, who's your first witness?

MR. BAUERMEISTER: Good morning, Your Honor. Our first witness is Tropical Chill's owner, Jaime Vega.

THE MAGISTRATE: So, please use the lectern.

(The witness was duly sworn)

Whereupon,

JAIME VEGA

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

DIRECT EXAMINATION

BY MR. BAUERMEISTER:

Q Good morning, Mr. Vega. Mr. Vega, where do you currently work?

THE MAGISTRATE: Hold on, Counsel. Your witness for direct examination but it would be good if we start by asking the witness to state under oath what is his name. I

know you introduced him but let's have him introduce himself under oath. What's your full name?

THE WITNESS: Jaime Vega.

THE MAGISTRATE: All right. Could you have one of the microphones a little bit closer towards you so that I can hear you better?

THE WITNESS: Does this work?

THE MAGISTRATE: That's much better. All right. Pardon the interruption. You may now proceed with the examination of the witness. Go ahead.

MR. BAUERMEISTER: Thank you, Your Honor.

BY MR. BAUERMEISTER:

Q Mr. Vega, where do you currently work?

A I am currently the owner of Tropical Chill Corporation.

Q What are your functions and duties in Tropical Chill?

A We own and operate three ice cream parlors known as Maggie Moose and we have three stores in the metropolitan area.

Q Where are those stores located?

A In Senorial in Cupey, in Jardines Reales Shopping Center in Guaynabo and in Plaza Dorada in Dorado.

Q How would you describe the way that Tropical Chill operates?

A Well, we have three locations and those three locations are small locations. The largest one is 1,500 square feet,

the smallest one is 400 square feet and we serve ice cream to our customers, usually delivery, take out in site and drive thru.

MR. BAUERMEISTER: Your Honor, I'm sorry, Mr. Vega. Your Honor, Attorney Shapiro apparently is still having connectivity issues.

MR. SEGUI: We're working on it.

MR. BAUERMEISTER: Okay, we're working on it.

THE MAGISTRATE: Well, we have Mr. Pablo Segui here and he's our audio visual specialist, so hopefully that will be able to be sorted out. I don't know if you want to pause for a moment or you're welcome to continue right on. Okay, can we proceed now?

MR. BAUERMEISTER: Yes, thank you, Your Honor.

THE MAGISTRATE: All right. Very well, go ahead.

BY MR. BAUERMEISTER:

Q Mr. Vega, can you please describe the size of your stores.

A Yes. The San Juan store is 1,500 square feet and has a drive thru. Guaynabo store is around 1,400 square feet, no drive thru and the Dorado store is 400 square feet, obviously no drive thru and those are the sizes basically of the three stores.

Q Mr. Vega, what are the challenges, if any, of being an entrepreneur or a small business owner in Puerto Rico?

A How long do we have?

THE MAGISTRATE: Well, not very long so get to the point quickly.

THE WITNESS: Okay, I will. It's a challenging situation to be a small business owner in Puerto Rico. A lot of regulations, electrical issues, staffing issues, et cetera, et cetera. Those are some of the main ones.

BY MR. BAUERMEISTER:

Q What is your opinion of vaccines in general?

A I think vaccines are a scientific miracle. I strongly believe in them.

Q What about the available Covid-19 vaccines?

A I think again that it's been an amazing process the way they developed them so quickly and I believe in them so strongly. My whole family has their two shots. My wife and I have our boosters and my two children have their two shots.

Q So it would be fair to say that you and your family are strongly pro vaccine.

A Yes, sir.

Q Why are you a plaintiff here then?

A I am a strong believer in vaccines but I am not a strong believer in government overreach. I believe that everyone should get vaccinated but I don't believe that we should force people to put things inside their bodies that

they don't want to.
Q Have you heard of the Executive Orders that have been passed regarding the Covid vaccine mandate?
A Yes, sir.
Q What can you tell us about it?
A I think that the Executive Orders that have been developed in the past 12, 18 months are arbitrary, not solely based on scientific data, not solely based on fact and I think they're -- I don't think they're fair and just to small businesses and I don't think they're fair and just to people who don't want to get vaccinated and I think they're discriminatory.
Q Are you specifically talking about the Executive Order that was passed in August?
A Yes, the last one that was passed in August and revised in November 15.
Q What -- you mean revised in November. What do you mean by revised?
A They sent out a new -- I'm not sure the right terminology, a revision or an actualization of the last Executive Order in August. I am aware of them.
Q In terms of Tropical Chill, what options, if any, did you have -- did the vaccine mandate that was passed in August and November gave you?
A There was two options for small businesses and

restaurants. If you were operating a restaurant, you had either to request a VACU Id, vaccination identification for customers coming in or you could operate at fifty percent capacity.

Q How did this make you feel?

A Frustrated, worried because I didn't -- Tropical Chill's mission in Puerto Rico, our mission statement is to provide the best in class product, our ice cream product, in a happy and family environment and atmosphere. In a nutshell we sell happiness, ten minutes of happiness to our customers.

I didn't feel it was right for me, my employees and my clients, for me to be inquiring them about their private medical issues and data. So, it was very frustrating.

Q Did you choose any of those two options that you talked about?

A I was forced to. So, I chose what I believe was the lesser of two evils and I chose the fifty percent capacity in all my locations.

Q Why do you say lesser of two evils?

A Because even though it's a hassle to allow less customers into your locations, I didn't feel -- I felt it conflicted with our mission statement to provide happiness to my clients and I didn't feel and my employees were not comfortable asking people they didn't know about their

medical data.
Q Just to clarify, are you saying that vaccine Id mandates do not promote like happy environments?
A Okay. I can give you an example. I have two children. One is a 10 year old girl and the other one is a 14 year old boy and we all have our shots and the 10 year old just got her second shot about a week ago and we went to a restaurant and we tried to get in and they asked us for the VACU Id.
My wife and I had it on our cell phones. My son had it on his cell phone and my daughter, she didn't have it. So, they're saying, "oh but she looks older than 10."
It was an uncomfortable experience and after having that experience, I wanted to make sure that none of my clients had to go through that again. So, that's why I chose the fifty percent capacity.
So, it's uncomfortable positions. I've seen it with customers that come into my stores and when the stores are at capacity, they turn away. They don't do the line, so it's an uncomfortable position. I didn't want my clients and customers to go through it.
Q Any other reasons?
A I just felt it was invasive. I felt it wasn't -- it didn't provide the happiness and the happy environment that I'm used to offering my customers.
Q Did you understand the vaccine mandates, how they

worked if you were to require the vaccine Id? Were they clear to you?

A It was a little unclear because the amount of Executive Orders that have been placed change variables constantly. I mean, we've had issues of, first of all, no one could come into a restaurant. It was only take-out or delivery.

The fifty percent capacity, then thirty percent capacity, seventy five percent capacity, one hundred percent capacity. It was a little unclear due to a large number of changes that these Executive Orders should have partake.

Q Did you have any economical expenses if you enforced the --

A Oh, ever -- I'm sorry.

Q No, if you actually decide to check on the vaccine Ids, would that represent additional costs or an expense to you?

A Yes, ever since it all started, well, we've had to incur in expenses, such as sanitizer, masks, deep cleaning purification. The expenses of having an employee verify the vaccination Id would have incurred in each of the additional stores to have one employee just standing at the door to insure that when a customer came in, you could check the VACU Id.

I decided not to do that because it was an additional expense and I didn't think it was justifiable in the P&L of the company.

Q Can you describe the age range of most of your clients or customers.

A We are a family focused company. So, our main target are families and children. Children ages one through 17 and adult ages 18 through 80 and I don't discriminate against old people either. So, if senior citizens want to come in and get their fix of ice cream, you're more than welcome.

Q So, there's a lot of children that come into your store?

A Yes.

Q Did that represent an additional hurdle or challenge in terms of enforcing the vaccine Id requirements?

A Yes and it still does because we have to -- well, since I'm not operating at fifty percent capacity, we don't have to do it, but if we had to do the VACU Id, we have to verify if the children were younger than 12.

Now if they're younger than five and where do you draw that line. I mean, you can have kids -- my oldest boy just turned 14 and he's taller than I am. So, he looks like an adult sometimes but he's a 14 year old boy. My girl is 10 and she looks like she's 13. So, where do you draw that line?

Q Can you please describe Tropical Chill's experience after the first vaccine Id mandate went into effect in August.

A Yes. We -- our sales were doing very well. Our seasonality here in Puerto Rico is not a big issue as it is in the States, that you get your peaks during the summer months and then when it gets colder, sales start decreasing.

Over the past 13 years that I've operated this franchise, our sales decrease due to seasonality probably range from two to four percent but it's usually pretty stable.

Ever since the August Executive Order started, our sales, I did a comparison of sales previous to August 16 for three months and then sales for the three months following the Executive Order. The sales for the previous three months were $235,000. For the subsequent three months after the Executive Order was placed, they were $190,000. So there was a decrease of almost twenty percent in sales for those months.

Q Are you saying or let me rephrase it. How do you know that this decline in sales was caused by the fifty percent capacity limit?

A Well, due to the fact that we've had a track record of thirteen years operating this franchise, as I mentioned previously, seasonality here is not a big issue. The changes range from two to four percent and the only major change that this year has seen is the Executive Order mandate and that's the only major change we can attribute it

to.

Q Can you -- have you had or can you describe whether you've had any burdens on enforcing the capacity limit?

A Yeah, we've had some issues. For example, the Dorado location is a very small store, so at capacity it's only three clients that can go into the store. You get clients that walk in, don't want to do a line outside, so they just leave.

In the San Juan store, we were just operating for a long while on drive thru and deliveries and we opened up and people still -- I don't foresee a lot of people -- when you come to my stores, you want to forget about the world, you want to enjoy a little moment of happiness and lines and verification and hassles when you want to just eat some ice cream with your kids are not something that goes on par with our mission statement.

THE MAGISTRATE: I'm sorry, sir. When you say that in the Dorado location only three clients can enter, are you saying that before or after the Executive Order?

THE WITNESS: After.

THE MAGISTRATE: After the Executive Order of August 16th?

THE WITNESS: Yes, sir.

THE MAGISTRATE: Okay, so are you saying that if it's fifty percent and then normal capacity for the Dorado

store is six customers?

THE WITNESS: Six customers, yes, because it's a small -- for that location particularly, it's a very small footprint and we have tables outside of the location. So, it's like a food court area.

So, we have four tables outside but inside the store there could only be three clients at a time based on the occupancy rate set by the Puerto Rico Fire Department.

THE MAGISTRATE: But you cannot use those four tables outside?

THE WITNESS: They can use those four tables outside but to come in and order the ice cream, there's only three people max capacity.

THE MAGISTRATE: You may proceed.

MR. BAUERMEISTER: Thank you, Your Honor.

BY MR. BAUERMEISTER:

Q What do you think generally of the fifty percent capacity limit?

A I'd love to see the data behind it. I think it's a very arbitrary number. I think it was developed to try to force people to get their vaccines or do the VACU Id process.

Q Why do you say it was arbitrary?

A Because from what we've seen since the pandemic began, numbers have varied. Initially it was just thirty percent,

then it was zero, only delivery and carry-out. Then fifty, seventy five, one hundred, back down to fifty. That's why I feel it's arbitrary. I don't think it's supported by any particular data set.

Q Have there been different capacity limits throughout the Covid situation?

A Yes, as I mentioned right now it's at fifty but it's been at seventy five, thirty and one hundred at different times and zero.

Q Do you think small businesses like yours are more impacted or burdened by the fifty percent capacity limit than larger ones, say a mall for example?

A I don't think so, I know so. It's been a bigger burden on smaller businesses, especially with all the challenges that we have to take on a regular basis to have -- for example, in the Dorado store it's only three percent, three people.

In the San Juan store, it's ten people. So that does limit our traffic. So I do think -- I do believe it represents a bigger obstacle to overcome than for a shopping center or a restaurant with fifty tables.

THE MAGISTRATE: But please explain this to me because, I mean, wouldn't those businesses that have fifty tables, wouldn't the fifty percent rule apply equally to them? So, wouldn't they be suffering at least theoretically

also fifty percent losses?

THE WITNESS: I believe it's a volume game. So, when you have fifty tables at a restaurant, then you can still turn a profit. I believe, I think still turn a profit on twenty five tables versus a smaller location that usually you have the four tables occupied.

THE MAGISTRATE: So, are you operating right now with losses rather than profits?

THE WITNESS: For the past three months I have been partaking some losses, yes. I haven't taken a salary in the past month.

THE MAGISTRATE: You may continue.

BY MR. BAUERMEISTER:

Q What, if anything, will happen to your business in the near future if the fifty percent capacity limit is not lifted?

A We're evaluating options that we need to take to operate the business at a profitable level. Some of the actions that we have partaken as I mentioned, I haven't taken a salary, not a salary, I haven't taken compensation for the past month and we are starting to cut employees' hours and we'll probably have to incur in layoffs if this situation continues.

Q For how much longer do you think you'll be able to avoid having to incur in this or, you know, make these

adjustments such as layoffs or whatever else you mentioned?
A Thirty to sixty days. That's what I think most I can hold out without affecting my staff. I think that's the longest I can hold out. Thankfully our operation has been very steady for the past thirteen years but I don't operate a business to lose money. I operate a business to earn an income.

THE MAGISTRATE: Sure. No problem. You may confer with your co-counsel. In the meantime, while they confer, I will ask you an additional question. When you were giving me the example about restaurants that have fifty tables, how do you know that they can still turn a profit vis-a-vis a small business? How do you know this? I mean, where are you getting these statistics from, this data from, or is this just simply street gossip sort to speak?

THE WITNESS: It's observational based on what I can observe. All my locations are next to other restaurants and I know that they've taken -- I'm not going to say that they haven't taken losses or decreases in their profits but two of my restaurants are next to, all of them, the one in San Juan is next to Moncho Pan, a bakery, very high traffic store.

They're asking for the VACU Id and their traffic has slowed down and Metropol which is next to another one of my stores in Guaynabo also has seen their traffic decrease. My

belief is that if that is happening since they have more than one location or very loyal customers, I think they can survive a little bit longer than those locations with small footprints.

THE MAGISTRATE: But how do you know if big businesses -- I'm asking these questions because you seem to be drawing a distinction between big businesses and small businesses because it seems that you're telling me that small businesses feel the brunt of these Executive Orders stronger with a bigger impact.

So, my question to you is how do you know that these big businesses have not had, for example, to lay off employees because of these Executive Orders?

THE WITNESS: I can't -- I don't know that. I don't know that. It's observational.

THE MAGISTRATE: You may continue.

BY MR. BAUERMEISTER:

Q You mentioned before I think the phrase, volume game. Can you explain that in the context of, you know, your fixed costs and your operation and can you explain if your restaurant works differently from say restaurants with waiters, waitresses? I'm assuming that ice cream shop doesn't have a waiter.

A No.

Q In the way people order food and go in and out of the

restaurant?

A When I mentioned volume game, I was basically, I'm the owner but I'm also the plumber, I'm also the handyman trying to -- I do whatever I have to do at the stores. Where you have a bigger operation, you have more expenses but you have a team that can take care of different things.

If that restaurant wants to partake in having one of the employees, let's say, for example a waiter and there's not that many tables, you can have that waiter stand at the door and verify vaccination Ids.

I don't have that privilege because I run a very tight ship and I, say for example, in the early mornings in the stores, I only have one employee and myself going around the stores but to have another employee would incur in a bigger cost for me on a percentage basis than it would to a bigger operation that has more employees that you can maybe move some employees around to have in the front door and then verify vaccination Ids.

Q Are you making a moral and economic decision or both in deciding to operate at fifty percent?

A It's a, you know, it's difficult, it's difficult. Of course, it's moral because I don't feel comfortable asking and making my clients uncomfortable. I don't feel it's right but it has affected my economical level.

Thankfully I've been very blessed in the past thirteen,

fourteen years, operating my locations and I gratefully have no debt, no major debt on the stores but I can't continue operating at a loss but it's between, it's like being between a rock and a hard place because I don't want to bend my beliefs to get more customers but and I don't want, of course, to lay off any of my employees but I have to -- the purpose of business is to turn a profit. So, it's a difficult judgement call right now.

Q Putting aside the awkwardness or uncomfortableness of the interaction, what do you think of not being able to allow unvaccinated people in your restaurant?

A I believe it's discriminatory because say, for example, someone has a cold, a common cold and that person comes into my store and I have to verify their temperature. They have a fever. I'm like, well, no, how do I know it's not Covid? I think it's a discriminatory practice and especially here in Puerto Rico that from what I understand, vaccination rates are among the highest in the nation.

I don't know all the science behind it but I believe that if the virus doesn't have anywhere to go when you have over eighty percent of the population totally vaccinated, the virus starts decreasing. So, it's a very -- I think it's not -- I don't think it's fair.

Q You mentioned some numbers and some finances. Do you have personal knowledge of those numbers and finances that

you mentioned?
A The ones that -- the nineteen percent decrease?
Q Yes.
A Oh, those are my numbers. I verify the numbers on a daily basis.
MR. BAUERMEISTER: I don't have any further questions, Your Honor.
THE MAGISTRATE: I believe your co-counsel is trying to –
MR. BAUERMEISTER: Thank you, Your Honor. No further questions.
THE MAGISTRATE: Okay. Who is going to be conducting the cross examination of the witness? Okay, do we have -- Mr. Cintron, correct?
MR. CINTRON: Yes and for the record, Attorney Jose Cintron.
THE MAGISTRATE: All right, Counsel. Your witness for cross examination.

CROSS EXAMINATION

BY MR. CINTRON:
Q Mr. Vega, good morning.
A Good morning.
Q In terms of tangible products, you're in the food business, right?
A Yes, sir.

Q What you sell is a food item.
A Yes.
Q Ordinarily even if the Covid 19 situation was not in the
picture, your business is heavily regulated in terms of hygiene, in terms of safety, fire safety, et cetera.
A That is correct.
Q Now, referring to these restrictions that are in place, different restrictions at different times, you refer to them in your testimony, we could say that your competitors operate under the same restrictions. Isn't that right?
A Yes.
Q Who are your main competitors?
THE MAGISTRATE: I'm sorry. I couldn't hear the question.
BY MR. CINTRON:
Q Who are your main competitors?
A Cold Stone Creamery, Senor Paleta and Baskin Robbins.
Q In terms of actual number of visitors in each of your locations, what is one hundred percent capacity?
A Depends on the location. In the San Juan store it's twenty persons inside the restaurant. In the Guaynabo store it's, I believe it's twelve and in the Dorado store, it's six.
Q In terms of hours of operation, in terms of your

operation, let's take for example Dorado. You mentioned that you have tables outside.

A Yes.

Q Does that represent an additional capacity?

A You could say so, yes. It's not inside the store, so I'm only responsible for what the Fire Department says my capacity is inside the store.

Q You mentioned like four tables, if I remember correctly.

A Correct.

Q It seats about four persons each?

A I would say, yes.

Q In terms of your hours of operation, you have peaks and lows, I suppose. You have some hours in which there's heavier traffic, other hours in which there's lower traffic.

A Agree.

Q Is that correct?

A Yes.

Q How often in the normal state of affairs, how often would your business operate at -- would each of your locations operate at one hundred percent capacity?

A Pre Covid?

Q Yes.

A Usual peaks are between 2:00 p.m. and 4:00 p.m. and then again from 6:00 p.m. to 10:00 p.m.

Q Each day?
A Yes.
Q Do you keep any kind of record as to the number of visitors daily at each location?
A I don't have an actual record. It's been mostly learnings from experience because I did work the main store for the first four years of operation but I don't have an actual record of visitors, no.
Q Given these restrictions which are big challenges by you and other plaintiffs in this case, how often have you had to turn customers away from your locations to comply with the fifty percent?
A I can't give you that exact number. I don't have it on me. I want to go back to the previous question. I don't have a number of exact persons but I do have a transaction log that tells me all the transactions that have been done in each of the stores.
Q Yes but the fifty percent capacity is a physical body limit. It's not a transaction limit.
A Yes.
Q Would you say that these restrictions that are in place have received wide publicity in the general population and press, social media, ads by the government?
A Yes.
Q People are knowledgeable about these?

A I think most of my clients are aware.
Q Most of your clients are aware?
A Yes.
Q Would you say most of your clients are aware that this is a situation beyond your control; that this is not an arbitrary measure you're taking as a businessman, as a business person?
A I have always operated lawfully, so I do follow regulations and all laws that are imposed by the government, so, yes, I operate within the boundaries of the law.
Q Yes, but the question was, are your clients aware that these restrictions are not --
A I'm sorry. I couldn't understand your question. Would you repeat it.
Q My question was that are your clients, based on your experience and your day-to-day contact with them, the way you see they react when you have to intervene with them in some way. Are they aware that these restrictions are beyond your control as a business person; that this is a government imposed mandate?
A I can't speak for my clients' thought process but I do believe it's been made public.
Q It is public.
A Yes.
Q It's received wide publicity.

A Yes.
Q Press, media, et cetera.
A Yes.
Q So, if your clients are somewhat aware that this is beyond your control and if your competitors are subject to the same restrictions, so basically these restrictions do not in any way affect your business name or your good will. Do you agree with me?
A No, I disagree because we are a destination business. We are not a need business. I mean, you go get ice cream as a reward, as a treat, as something to look forward to. So, it's not like they -- you don't need to go get ice cream. It's a want.
Q Yes, but if or when they go to your competitors, they face the same situation they face when they visit your place. Isn't that correct?
A Depends if they're doing, asking for the VACU Id.
Q Well, we can only suppose that they're complying.
A Of course, they are doing A or B.
Q You state in your testimony that you choose the fifty percent limit as the lesser of two evils. Is that right?
A Yes.
Q In terms of chronology, when approximately did you make that decision?
A As soon as the Executive Order came out, I conferred

with my spouse. She's my biggest counselor. I do take her counsel very seriously and I said, "look, I don't feel comfortable doing this, asking people for medical information. So, I believe I'm going to take the fifty percent capacity as my option" and I'd say within the 24 hours that it was announced, I made that decision.

Q In terms of dates, can you give a somewhat precise date as to when that you choose to have that restriction, operate under that restriction as opposed to the other option?

A One day after the Executive Order was announced, August 16, 17.

Q August of this year?

A Yes.

Q You made reference in your testimony to personal experience you had went to a restaurant with your family and your daughter felt somewhat awkward. I take it from your testimony that his happened fairly recently.

A Probably in September, two or three months ago.

Q Was it around the time the fifty percent limit went into effect?

A Yes, it was afterwards.

Q Your decision was based on that incident or you had made that decision prior to that incident?

A My decision was made prior to that.

Q Prior to that incident?
A Yes.
Q You mentioned that the Executive Order, the one currently placed, I think you described it in general terms as big. There are things you don't understand. It seems they are somewhat ambiguous.
A No, I actually -- I read the Executive Order. I'm not a lawyer and I mentioned that it's unclear and ambiguous because there's been so many changes to each Executive Order that sometimes normal business people might get confused.
Q Did you seek legal advice?
A On fifty percent versus --
Q On the meaning of the Executive Order and how it impacted your business.
A Oh, yes, I did.
Q You did?
A Yes, from ASORE, the Restaurant Association.
Q After that, what you did not find clear, became clear?
A Yes.
Q Would you agree with me that in light of the Covid crisis, even if the Executive Orders were not in place, even if this limit we've been discussing were not in place, customers to some extent would refrain to visit your place and similar establishments to avoid the risk of contagion?
A Not at this moment. I don't agree with the statement.

Q So, if the Executive Orders were not in place, you would be operating under normal numbers in terms of visitors? Is that your testimony?
A I do believe that if the Executive Order was not in place, I would probably have higher traffic and higher transactions.
Q All the way up to normal?
A Not probably normal but I'd say closer to 2-4 percent versus 19 percent.
Q Those figures are based on information on operation and the totality of the experience --
A No, no, sales figures, sales.
Q Sales.
A Hard sales.
Q Income, you mean?
A Sales.
Q Sales, not number of visitors.
A Sales.
Q You testified about your business being a small business and that bigger businesses and in somewhat better position to face this situation without as much impact on the sales. Are you advocating for some kind of preference for your type of business?
A No, no.
Q So, we're in agreement that both your size of business

and bigger size would operate and that should operate under the same restrictions.

A I agree.

Q Have you considered the option of adding outside tables to your other locations, other than the Dorado location and increasing your capacity to have visitors stay in your place and enjoy your experience?

A I have added outside tables in one of the locations where it's physically possible. I can't add a lot of tables because it's a hallway but in my other store it's not physical possible. It's in the parking lot and I can't do it.

Q You have added outside tables where?

A In the Guaynabo store.

Q Guaynabo and not in the San Juan store?

A No.

Q Guaynabo is located in a shopping center.

A In a strip mall, yes.

Q Strip mall.

A Yes.

Q As opposed to San Juan.

A San Juan is in a stand alone.

Q It's a stand alone.

A Yes.

Q How many have you added in Guaynabo?

A Two.
Q Has that increased your capacity to comply with the fifty percent restriction in terms of number of visitors?
A The two tables they have to be right next to the wall, so it's two tables that can't hold four persons. They can only hold two. So, it's a smaller footprint. So, instead of eight additional customers, I can only add four.
Q Has that improved your situation in terms of sales?
A No.

MR. CINTRON: Your Honor, I'm going to confer with co-counsel.

THE MAGISTRATE: Sure.

MR. CINTRON: No further questions, Your Honor.

THE MAGISTRATE: I would like to ask some additional questions. Sir, I'm assuming but correct me if my assumption is wrong. The people who walk into an ice cream parlor can, sometimes they would prefer to eat it at the store and sometimes they just simply buy it to go.

THE WITNESS: That's correct.

THE MAGISTRATE: My question to you is the following. If say -- if you have people walking to your store. I'm not talking about drive thrus, I'm talking about actually entering the store, does the fifty percent cap apply to those who are buying to go or does it apply only to those who are going to sit in there to eat?

THE WITNESS: The cap applies to any person that comes inside the location.

THE MAGISTRATE: So, if for example, for whatever reason there's no drive thru or I don't want to use the drive thru, if there is one and you already have maximum capacity occupying the store because you agreed to the fifty percent limit, what do you do? Do I have to wait literally outside the store until the customers that you have inside the store finish eating their ice cream?

THE WITNESS: My employees have been instructed to as soon as we reach capacity to not let anyone else inside the store and instruct the customer that is trying to get into, please wait outside until one person comes out.

THE MAGISTRATE: Even if that customer tells you, "look, I'm not going to eat it inside. I'm just simply going to buy it to go"?

THE WITNESS: I comply with the law, so even if it's just to go, you have to wait outside.

THE MAGISTRATE: But if I go to the grocery store to buy ice cream to go then I don't have any problem, right? There's no fifty percent cap.

THE WITNESS: You said it. I didn't.

THE MAGISTRATE: No, I'm asking you. I'm not the one testifying. I'm asking you. Can I do that? Can I go to a grocery store and buy ice cream to go and there is no

fifty percent cap there?

THE WITNESS: You can go to the grocery store, the gas station and buy ice cream with no capacity and the grocery store.

THE MAGISTRATE: Oh, I can do that also at the gas station.

THE WITNESS: Yes.

THE MAGISTRATE: But not in an ice cream parlor, even if I tell your employees, "look it's to go."

THE WITNESS: Yes.

THE MAGISTRATE: Are there any other questions for this witness? If you're going to ask any other questions on redirect, please use the lectern. If you're going to do any redirect.

MR. BAUERMEISTER: No, I know, Your Honor. I'm just thinking whether we're going to --

THE MAGISTRATE: Well, take a moment. Consult with your co-counsel. Do you want to redirect?

MR. BAUERMEISTER: Quick redirect, Your Honor.

THE MAGISTRATE: Go ahead.

MR. BAUERMEISTER: Thank you.

REDIRECT EXAMINATION

BY MR. BAUERMEISTER:

Q Mr. Vega, can you explain if there's a difference and what is it between ordering a custom made ice cream like the

one you sell or regular ice cream somewhere else?

MS. DIAZ: Objection, Your Honor, outside of the scope of cross examination.

THE MAGISTRATE: Well, I have to admit that I don't recall on cross examination anybody asking about the types of ice creams and qualities but I will allow you some leeway but let's get quickly to the point. All right. You may answer the question but let's get quickly to your point.

THE WITNESS: My ice cream, I have a marble slab that I mix the ingredients that the customer wants to order. So, say if you want a cookies and cream ice cream, I get the basic vanilla ice cream, put it on the slab and then put the cookies and cream.

I don't have those ice creams pre-made so I have to make each order as it is ordered by the clients.

BY MR. BAUERMEISTER:

Q Would it be fair to say that most people don't call in to order an ice cream and pick it up?

A No, it would be fair to say that. Most people go to the location to get their ice cream.

Q As opposed to say burgers, you know, you agree with that?

A Yes.

Q Brother counsel asked you about your opinion on mandates, whether they should be imposed the same way on

large or small businesses. Are you -- from what your testimony what you said was that they shouldn't apply to any of them, right? You don't mean to get a special treatment as a small business.

A I don't mean to get special treatment. I want fairness to be distributed equally.

Q But in practice, would you agree with me that the impact is different?

A Oh, of course.

Q Okay. Can you talk about briefly about your fixed cost and your variable costs and to explain to the Judge how that affects your numbers.

MS. DIAZ: Objection, Your Honor. Once again outside of the scope.

THE MAGISTRATE: Counsel, there were a few questions regarding his numbers and decrease, so I'll allow, I'll allow. Contrary to your first objection, I will acknowledge that the previous one did have merit. I will acknowledge that but this one I believe that there is, there were some, at least one or two questions on cross that would merit this kind of question. Go ahead.

THE WITNESS: Fixed costs versus variable, here fixed costs are very high. Rent is something that's all throughout the Island has been increasing steadily for the past ten years. So, those are -- that's the main fixed

cost.

Variable costs are employees and you know that with a minimum wage going up, that's a huge challenge right now. Electricity costs are insane in this Island and I belong to an Ice Cream Council for the franchise and when they hear our energy costs here, they go crazy. Also the food cost, they're continuously increasing.

So, when I say that I think it's a bigger challenge for small businesses, I mean that I don't have as deep pockets to say a corporation that owns one hundred restaurants. So, me owning three stores, it does provide a bigger challenge since I don't have the cash flow and funds that other corporations might have.

Q Just a last question. Brother counsel asked you about you adding new outside tables to one of your stores.

A Uhum.

Q Can you explain and I might have asked you about this but just to clarify, the fact that you have more tables necessarily equals more sales and put differently, does everyone who order an ice cream sits on the table?

A No.

Q Okay.

A Those tables that were added in the Guaynabo location, I had to get a special permit from the owners of the strip mall to put those tables on. So, whenever they decide that

they don't -- I'm the only establishment with the tables outside, so whenever they decide that they don't want my tables outside anymore, I'm probably done.

Q Just to clarify the obvious, they can't order from that table outside.

A No, they have to go inside to order.

MR. BAUERMEISTER: No further questions.

THE MAGISTRATE: You're excused, sir. Thank you.

THE WITNESS: Thank you. Have a good day.

THE MAGISTRATE: Likewise.

MS. DIAZ: Your Honor, if I may I have a --

THE MAGISTRATE: Oh, you want to do recross?

MS. DIAZ: Yes.

THE MAGISTRATE: Yes, okay, go ahead but I'll say this. I'll give you leeway this time simply because I did not announce this previously but I have what you can call one player behind the home plate rule, which basically means if Mr. Cintron did the cross, then he would be the one making the recross.

MS. DIAZ: I understand.

THE MAGISTRATE: Just like if Mr. Bauermeister did the direct, he's the one doing the redirect. So, but I had not announced that previously. So I'll give you the break this time but from the next witness onward, we'll apply the one player behind the home plate rule.

Of course, you can still confer with your co-counsel. I have no problem with that. The one player behind the home plate rule does not preclude you from conferring with your co-counsel for purposes of any questions that you want to ask. So, you may proceed and do recross. Go ahead.

RECROSS EXAMINATION

BY MS. DIAZ:

Q Attorney Idza Diaz Rivera from the Department of Justice for defendants, for the record. Mr. Vega, to previous questions both from counsel and from your attorney, you stated that your sales had gone low, have been lower since the Executive Orders requiring fifty percent of occupation put in place, correct?

A Yes.

Q To questions of the Judge you clearly testified that if you had three people, for example, in your Dorado store consuming inside, no one else could go inside to purchase even if it's to go.

A I'm sorry. Could you -- I'm a little confused with the question. Could you repeat it.

Q Yes, of course. To questions from the Judge, you testified that if you had three people consuming inside your Dorado location, if someone else wanted to purchase an ice cream and there were already three people, he could not go inside to purchase even if it was to go.

A That is correct.
Q You also testified that you're losing sales because people sometimes won't stand outside in a line and they would just leave.
A That is correct.
Q Okay and the fact is that you could have more sales should you implement that your clients -- your employees, if your Dorado store is full inside, can take the order from the customer outside and deliver it and they don't have to go.
A They can't take the order because the order is taken on a POS system and the POS system is within the store.
Q So, your testimony is that they cannot get a piece of paper and write down the order.
MR. BAUERMEISTER: Your Honor, objection.
THE MAGISTRATE: No, no, it's cross. Let's allow the witness to -- or recross I should say. Let's allow the witness to answer.
THE WITNESS: It could be done but it leads to further mixups and I like to keep my systems in check to minimize mistakes.
BY MS. DIAZ:
Q So, you're clear. The employee cannot get a clear order from the customer in order to deliver the correct order outside and so you can have more sales?

A It could be done. I don't do it because I like to keep my systems in place to minimize mistakes.
Q But it's an option that you have available and you simply choose not to do it.
A Yes, I choose not to do it because I like to keep my systems in place.
Q You are aware that that would help you increase your sales.
A No, I am not aware of that.
Q You do not think that right at this moment, that implementing that simple procedure can give you more sales and more income?
A I'm not aware of that, no. I don't believe that.
Q You don't believe that?
A No.
Q Selling to more clients that are not willing to wait in line will not increase your sales?
A That would incur in me having additional employees going outside to take orders.
Q The same employee that is inside not attending customers because your store is already full cannot go to the door to take an order from a client that is waiting.
A Usual if I have -- in that store I have a maximum of two employees because I can't have anymore. If I have two employees taking care of three customers inside the store,

how am I going to get one of my employees to go outside and take care of a customer and not taking care of the one inside.

Q From the ones that are sitting down already eating?

A Sorry?

Q From the ones that are -- your clients that are already inside eating.

A No, they're not inside because that place does not have tables inside. So, the clients that order have to go outside to consume their ice cream. So, if I have two employees, I would have to incur in an additional employee and that's additional cost of having that employee outside of the store taking orders on a piece of paper and pen.

Q Would you agree with me then the losses that you testified earlier are way bigger than what you would have to invest in an additional employee taking orders from the people that are waiting outside?

A I can't foretell the future of situations that haven't --

Q I'm not asking you to foretell the future. I'm just asking you number wise. You're a businessman, number wise. Comparing the losses that you testified that you have, versus an additional employee that you would have to pay a minimum wage.

A I don't pay minimum wages.

Q You would have to pay less than ten dollars now, right? Taking orders outside that employee would make your more than ten dollars an hour.

A I don't agree. In the Dorado store, the largest losses partaking in all the three stores are in San Juan. The Dorado store is the one that has had the less sales loss because it's a small store and the two employees can manage it pretty well.

Customers have turned away when there is a line outside but I do not agree that if I have an additional employee outside paying him, him or her, ten dollars an hour, I would probably incur in bigger sales. I disagree with that statement.

Q So, the fact is that the Dorado store is not your biggest problem even if you only can have three customers inside.

A Dorado is not my biggest problem.

Q The one that you would have a bigger problem is the one in Senorial.

A The one in San Juan, yes.

Q The one that only has well, about two parking spots in front of the store.

A It has three parking spots in front and five parking spots in the back. So, I have a total of eight parking spots, one handicap.

Q You do not have drive thru?
A I do have a drive thru there, yes.
Q Even if you have a drive thru that the people do not have to go inside, that is the one where you're having the bigger losses.
A That is the one that I've had the biggest losses, yes.
Q Even if the people choose to go through the drive thru, practically those amounts of people do not have to comply with the fifty percent.
A No.
Q So, it's a matter of sales, not a matter of availability of going inside the store.
A Well, it's again as I mentioned previously, it's a destination experience. People do get their ice cream in the drive thru but people do enjoy taking their kids or their grandparents to go eat an ice cream cone in a store.

It's who here hasn't gone on Sunday after mass or after a family reunion, "let's go get an ice cream cone" and they go to the place and mostly eat it there.

MS. DIAZ: I have no more questions, Your Honor.

THE MAGISTRATE: You're excused, sir. Thank you.

THE WITNESS: Thank you.

(Witness excused)

THE MAGISTRATE: All right. Mr. Bauermeister, is your next witness going to testify in person or by Zoom?

MR. BAUERMEISTER: Via Zoom, Your Honor. May I ask Attorney Shapiro if Dr. Hay was able to -- oh, there he is. Okay, I think that answers my question.

THE MAGISTRATE: Okay, well, I can see Mr. Shapiro in a very big screen but the witness in a very small screen. Now, no offense to Mr. Shapiro but I would --

MR. SHAPIRO: Yes, Dr. Hays is much more important than me, Your Honor.

THE MAGISTRATE: I would prefer this to be inverted. I would prefer to have the witness in a big screen and Mr. Shapiro in a small screen simply because I would like to be able to observe the witness better. Mr. Rodriguez, what can be done about this?

MR. RODRIGUEZ: I'm calling Mr. Segui to see if we can fix this.

THE MAGISTRATE: All right. Well, okay.

MR. SHAPIRO: In the meantime, Your Honor, my co-counsel, Mr. Davila, has some exhibits that he's marking and wants to -- that would help me with my examination.

THE CLERK: This is a technical issue. Maybe it's when the on-mute is on that's when the screen maximizes. Could we perhaps give it a try just -- well, I mean whatever works is fine with me. Let's see. I also can't hear the witness.

THE WITNESS: If I talk does my face get bigger?

THE MAGISTRATE: Okay, there you go. All right. Okay, maybe that's just simply a matter that whoever is talking gets the bigger screen.

MR. SHAPIRO: Yes, Your Honor.

THE MAGISTRATE: Okay, all right. Okay, so who is going to be conducting the direct examination of the next witness.

MR. BAUERMEISTER: Attorney Shapiro.

MR. SHAPIRO: I will, Your Honor.

THE MAGISTRATE: All right. Well, go ahead. You may call your next witness to the witness stand.

MR. DAVILA: Your Honor, I'm just marking the exhibits. It's just a quick -- can you give me like two minutes and I will be done, let's put it this way.

THE MAGISTRATE: Okay. Of course, I'm assuming that you have shown these to opposing counsel.

MR. DAVILA: No, but I can.

THE MAGISTRATE: Well, please do so. Please show any documents to opposing counsel.

MR. SHAPIRO: In the meantime I think, Your Honor, we can call Dr. Joel Hay and have him sworn.

THE MAGISTRATE: Excellent. Good idea.

MR. SHAPIRO: We'd like to call Dr. Joel Hay.

THE MAGISTRATE: Let's place the witness under oath.

(The witness was duly sworn)

THE MAGISTRATE: Doctor, could you please state your full name for the record.

THE WITNESS: My name is Joel Walker Hay.

THE MAGISTRATE: Okay. Well, we're ready to pursue with our examination but I want to give Mr. Davila an opportunity to finish with his identifications. I don't know if Mr. Shapiro, if you want to get started or if we should wait one more minute to give Mr. Davila an opportunity to finish pre-marking the exhibits.

MR. SHAPIRO: I won't be using the exhibits for a little while, so I think in the interest of time we can probably get started.

THE MAGISTRATE: Excellent.

MR. SHAPIRO: Your Honor, we're going to be offering Dr. Hay as an expert in Health Economics. So, my first line of questioning will establish his background in that regard before we formally offer him.

THE MAGISTRATE: All right.

Whereupon,

JOEL WALKER HAY

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

DIRECT EXAMINATION

BY MR. SHAPIRO:

Q First of all, Dr. Hay, starting with your education, please tell us your background and qualifications in Health Economics.

A Sure. I graduated with a Bachelor's degree in Economics and Math from Amherst College, summa cum laude. I then went to Yale to get a PHD in Economics, which I got in 1980. My first job was Assistant Research Professor at the University of Southern California from 1978 to 1980.

Then I was a tenure track Assistant Professor at the University of Connecticut Health Sciences Center as a health economist for a couple of years. Then I moved on and went to a think tank in the D.C. area for health policy called the Center for Health Affairs. I was there for about four years.

I then went to another think tank at Stanford University called the Hoover Institution. I was there for eight years. Ever since I've been a Tenure Professor and founding chair of the Department of Pharmaceutical Economics and Policy.

Q What is your relationship to the American Society for Health Economics?

A I would say Founding Board Member and Member of the American Society for Health Economics.

Q What is your publication record of scientific or economic papers?

A I have over six hundred peer reviewed scientific citations, sorry, publications and over eleven thousand citations in the peer reviewed scientific literature.

Q I've certainly reviewed your CV and there's lots of journals there that I've never heard of before because I'm of course a lawyer. Have you published in journals that even lawyers have heard of?

A Well, certainly New England Journal of Medicine, JAMA, Lancet, Gen Intro Medicine, things like that.

Q Okay. What's the difference between your expertise and what medical doctors study?

A That's an excellent question. I'm not a Clinician although I've taught thousands of clinicians on my methodology and research, including doctors, nurses, in the course of the last 33 years.

Thousands and thousands of Doctors of Pharmacy since my main appointment is in the USC School of Pharmacy with the joint appointment of Department of Economics. I also have an appointment as a Senior Fellow at the Shafer Center for Health Policy and Economics at USC.

The difference between the way we look at data in the Healthcare field to make policy recommendations and to decide which treatments work and which treatments don't work, which treatments have value, which treatments don't have value, is through the use of big data.

Physicians look at patients one by one and they are somewhat trained in statistics but most of them have minimal statistical training. My training and my teaching for the last forty years is a branch of statistics that economists call Econometrics and the reason that we use this is because we can rapidly use real world data from huge administrative data bases like insurance claims, Medicare, Medicaid, the VA, state programs, prison programs.

We can look at millions, literally millions of patients as they submit claims through the system and we can derive insights from those millions and millions of claims that simply cannot be derived from clinical trials --

THE MAGISTRATE: Pardon the interruption, Dr. Hay. I don't know. Does somebody have a cell phone on or something to that effect?

THE WITNESS: Actually, Your Honor, I think that's my watch, the SIRI on my watch. Let me take it off.

THE MAGISTRATE: Okay, well brave new world we're living in where watches, you know, interject in courtroom proceedings. You may proceed, Dr. Hay.

THE WITNESS: All right. So, we can use these big data sets and we can find rapidly the value of treatments, vaccines, diagnostics, interventions of all different types. The drawback of using real world data is it often can have problems of internal validity because what happens in the

real world is people get treatments based on aspects of either them; that is their own personal medical history, their genetics, other personal characteristics or aspects of the doctor in terms of the doctor's own preferences, the doctor's own training, the doctor's own experience and so what we see is very different from what the doctor sees.

We don't see all those unobservables but what we have developed in Econometrics over the last fifty years are very powerful methods to both detect what we call unobservable confounding bias or selection bias and so we can be very confident that our conclusions are highly valid and we actually think that in many cases we can provide much better insights into treatments, outcomes and derive conclusions for medical policy that may actually have great additional value to what the doctors can give us.

Q Do you have experience working with or advising or presenting to public health authorities?

A Absolutely. I've presented to the CDC on the Aids epidemic about four years ago. I've presented to the FDA several times. I've presented to the California Medicaid Program.

I've presented to the San Diego County Health Department, the Homeless Program of Sacramento, the government of Hungary, the government of Hong Kong and many other perhaps less formal presentations to other government

agencies.
Q Have you ever been an expert witness in legal cases?
A Yes, I've written hundreds of legal expert reports. I've been deposed over one hundred times in legal proceedings, including Ireland, Canada but mostly U.S. and I've ben in dozens and dozens of trials.
Q What have you been asked to do by our legal team?
A I've been asked to comment, evaluate and comment on the trends of Covid 19 cases, hospitalizations, deaths and outcomes in the Commonwealth of Puerto Rico during the lockdowns and to comment on the effectiveness of the vaccine mandates.
Q Are you being paid for your time or your work in this case?
A No, I'm doing this pro-bono.
MR. SHAPIRO: Your Honor, we offer Dr. Hay as an expert in Public Health Economics.
THE MAGISTRATE: Any objection?
MS. DIAZ: No, Your Honor.
THE MAGISTRATE: Admitted as an expert in Public Health Economics.
MR. SHAPIRO: Thank you, Your Honor.
BY MR. SHAPIRO:
Q Dr. Hay, let's start by talking about vaccination rates in Puerto Rico. So, starting with the time when the

original Executive Orders requiring vaccination mandates went into effect and in the intervening months, what can you tell us about vaccination rates and trends?

A Vaccination rates improved dramatically this year from spring until September, achieving well into the eighty percent of those eligible for vaccines in the Commonwealth of Puerto Rico.

The vaccine status is pretty well saturated and since the latest Executive Order in mid November, there's been only about .7 percent increase in vaccines in the Puerto Rican population but Puerto Rico is either the highest or second highest vaccinated state or territory in the United States.

Q Was that the case before the vaccine mandate went into effect?

A Yes.

Q What impact do you think that the vaccine mandates have had on the rate of vaccination in Puerto Rico?

A It's negligible. It's fairly detectable. Like I say it's between .4 and .7 percent.

Q How can you tell that? How do you know what the account or factual would have been without having the mandate in place?

A Well, I mean the vaccine rate can't go down, so if it's already I believe around eighty three percent of those

eligible prior to this latest Executive Order, it's unclear that it could have gone -- I mean, it would have gone up I would think by .4 to .7 percent even without a mandate.

I'm sure there's enough people out there that are concerned about the Delta variant and the Omicron variant. So, it's unclear that the mandate had any effect at all counter factually.

Q Okay, Dr. Hay, I'd like and Your Honor, I'd like to refer the Court to the first three exhibits, A, B, C. I assume they're A, B, C. Maybe Mr. Davila will mark them 1, 2, 3. But the first three charts.

THE MAGISTRATE: Well, we usually have plaintiffs mark with numbers rather than letters. Did you choose numbers?

MR. DAVILA: Numbers.

THE MAGISTRATE: Great. So, have you shown these to opposing counsel? Yes?

MR. DAVILA: Yes, Your Honor.

THE MAGISTRATE: All right.

MR. DAVILA: I may need to help brother counsel to project.

THE MAGISTRATE: Oh, that's fine. I don't have any problem with that. I understand. You know, that's part of this hybrid hearing that we're holding. I don't have any problem if you project them in the document projector,

that's fine. So, you're showing now Id 1, Id 2, Id 3.

Now, again, I don't know if the parties -- I'm assuming, unless you indicate to me otherwise, that these are merely Ids and not exhibits yet admitted into evidence.

Now, again, if the parties have reached stipulations as to admissibility, then we can just simply mark them as Ids, excuse me, as exhibits.

Okay. All right, so right now what we have is Id 1, Id 2, Id 3. You may, if you need to place a document in the projector, you can go ahead and do that. I don't know if Dr. Hay, can you see that? In my screen it's very tiny to be very candid with you, so I don't know if -- okay, now that's better.

MR. SHAPIRO: He should have his own copies with him anyway.

THE MAGISTRATE: Okay.

THE WITNESS: I can see it. I can see it pretty well.

THE MAGISTRATE: All right. Okay, so this would be Id 1, correct?

MR. SHAPIRO: Yes.

THE MAGISTRATE: All right, go ahead, Mr. Shapiro. You can go ahead and proceed with your examination of the witness.

MR. SHAPIRO: Thank you.

BY MR. SHAPIRO:

Q Dr. Hay, this re-encapsulates, I think, things that you've just said but can you just describe what this chart shows.

A Yeah, this chart is the Covid 19 vaccination coverage by age group in Puerto Rico. So, we have in the first column to the left, we have the age 5 to 19. Then it's broken out basically by decades all the way up to 80+ and in every group except for the 5 to 19 year olds who are, of course, the least effected by the severe impacts of Covid.

The vaccination rate is well over 85 percent. If you look at the blended overall vaccination rate in Puerto Rico, I believe it's about 78 percent, which according to most experts, is sufficient to have herd immunity.

Q You mentioned, you testified that you call the vaccine saturation. What do you mean by that and what percentage reaches, constitutes saturation and why do you think the percentage can't go higher all the way to a hundred?

A Well, I think it's going to be increasingly difficult and burdensome. Once you've already achieved such a high saturated rate of vaccine, we've already seen it, the Executive Order on November 15, we've only seen a tiny increase from that mandate.

There's no evidence that as we will, I think, show with some of the future slides, there's no evidence that

increasing the vaccine rate as has been done since September and marginally since November 15, has done anything at all to the hospitalization rates, death rates and other things in the Commonwealth of Puerto Rico and as we'll also point out, there are other mitigating ways of dealing with Covid, particularly in an island like Puerto Rico, where egress and people coming in is much harder than other states.

So, you will -- it's just there are other ways to do it and it's pretty clear that even though Puerto Rico has the highest vaccination rates in the country, you're just going to get more and more additional burdens to try and get a few more people vaccinated and there's no reason why you are going to do that given the other data we'll look at.

MR. SHAPIRO: Your Honor, I move to admit Id 1 as Exhibit 1.

THE MAGISTRATE: Any objection?

MR. CINTRON: Your Honor, the document does not contain a date. We do not, we cannot see exactly at what point in time that the document referred to. So, it may be yesterday or a year ago.

MR. SHAPIRO: It was December 1, when we last pulled this data.

THE MAGISTRATE: Okay, so --

MR. CINTRON: Not from the face of the document.

THE MAGISTRATE: Okay, I'm sorry, but let's hear

from the witness. Dr. Hay, is this a chart in Id 1 that is based on data that you retrieved on December 1 of this year, 2021?

THE WITNESS: Yes, sir.

THE MAGISTRATE: All right. I think that clarifies. I understand, Mr. Cintron, that the document itself may not have the date but the witness has clarified the date. So, on those grounds, I will overrule the objection and admit it as Exhibit 1.

(Plaintiff's Exhibit 1 was admitted into evidence)

MR. SHAPIRO: Thank you, Your Honor. I think the rest of our exhibits I think do have the date there and that leads me to, yes, to ask to show Id 2.

BY MR. SHAPIRO:

Q Dr. Hay, could you please just quickly tell us what this represents.

THE MAGISTRATE: I'm sorry, pardon the interruption. Just for your benefit when you're testifying, I can't read a thing from the screen of what's below each one of these columns. So, I'm just simply -- okay, now I can see a little better.

Okay, so I'm just simply, just -- you might want to keep that in mind when you're testifying. I don't know. I mean, I can -- it looks like there are names of certain

states, what it appears to be but you might just simply want to keep that in mind. All right. So, you may go ahead with your examination. Go ahead.

MR. SHAPIRO: Your Honor, would it be possible to have photocopies of all of these for distribution both to Your Honor and to opposing counsel?

THE MAGISTRATE: Well, maybe so but not right now. I mean maybe that can be done in a recess, in a break but we're trying to maximize right now the time and I'm trying to keep at a minimum the interruptions on the testimony.

So, can that be done, yes but maybe whenever we take a break or a recess might be a good moment for that. Okay.

MR. SHAPIRO: Understood, understood. Thank you.

BY MR. SHAPIRO:

Q So, Dr. Hay, understanding that most people who are going simply by viewing the screen can't read the little type, can you just describe what this chart shows.

A Sure. This chart shows the number of vaccine doses administered per one hundred thousand residents across all the states and territories of the United States and as you said, the columns each represent a different state and territory by the number of doses of vaccine per one hundred thousand residents and you can see that Puerto Rico as of December 1, remained as it has for several months, second in doses administered only to the State of Vermont.

Q Just to be clear, Puerto Rico was, you know, first or second or anyway at or near the top even before the vaccine mandate went into effect?

A Absolutely.

MR. SHAPIRO: Your Honor, I move the admission of Id 2 as Exhibit 2.

THE MAGISTRATE: Any objection?

MR. CINTRON: None, Your Honor.

THE MAGISTRATE: Admitted, Exhibit 2.

(Plaintiff's Exhibit 2 was admitted into evidence)

MR. SHAPIRO: I'll ask my co-counsel to put Id 3 up.

BY MR. SHAPIRO:

Q Dr. Hay, once he puts it up, please similarly describe what it is and explain its significance.

A Yes. This slide represents the percentage of the total population that is fully vaccinated, i.e. has had two doses of the Moderna or Pfizer vaccine or one dose of the J&J vaccine and here you can see that Puerto Rico ranks number one of all states and territories. So, Puerto Rico is the most vaccinated, fully vaccinated region of the United States.

Q Was that the case before the vaccine mandates went into effect?

A Yes.

MR. SHAPIRO: Your Honor, I move the admission of Id3 as Exhibit 3.

THE MAGISTRATE: Any objection?

MR. CINTRON: None, Your Honor.

THE MAGISTRATE: Admitted, Exhibit 3.

MR. SHAPIRO: Okay. I'll ask my co-counsel to put up Id 4.

BY MR. SHAPIRO:

Q Again, Dr. Hay, understanding that people can't really read the small script, could you please explain these two charts.

A Sure. These charts are the percentage of people in Puerto Rico as of December 1, with at least one dose of vaccine over the age of five, five or older, and of course, the approval for people 5 through 11 is still not official.

There's an emergency authorization for the vaccine use in people age 5 through 11 but the FDA has not approved officially the vaccines for that age group.

Nevertheless, the rate at which people have been vaccinated, as you can see from both of these charts and let me explain that the first chart is the cumulative number of people that are vaccinated and you can see that it's over eighty percent and seeing the second chart, which is the rate of change of vaccine coverage with at least one dose.

You can see that the vaccine trend as we've already said is very, very slow and has not been impacted by the mandate at all because if you look at the second graph, it's basically flat.

The number of people newly getting vaccinated hasn't changed before or after the mandate.

Q So, just to be clear on that second chart, which is called first difference of percentage 5 plus years with at least one dose. You're saying that when that line is increasing then that is an increase in what and conversely when it's decreasing or flat, what does that signify?

A When it's increasing it's like you're pushing the accelerator on the gas peddle on your car and it's going faster and faster. Obviously when it's decreasing, that means you're putting on the brake and if it's flat, you're just coasting.

Q So, again, with the first mandates going into effect in mid August and then the latest one in mid November, what does this first difference line tell us?

A That there is no negligible -- there's no impact at all or negligible impact of mandates on vaccine coverage in Puerto Rico for those five and older.

MR. SHAPIRO: Your Honor, I move the admission of Id 4 as Exhibit 4.

THE MAGISTRATE: Just to be clear, Dr. Hay, when

you testified that, when you say five years and older, I just want to make sure that you're not referring only to the group of five through 11. You're referring to literally five and older, so that includes adults.

THE WITNESS: That's correct, Your Honor.

THE MAGISTRATE: All right. Any objection?

MR. CINTRON: None, Your Honor.

THE MAGISTRATE: Admitted, Exhibit 4.

(Plaintiff's Exhibit 4 was admitted into evidence)

BY MR. SHAPIRO:

Q Before we go to the next subject area which is about testing and positivity rates, you mentioned again, I want to refer to this concept of saturation and we see these very high percentages of vaccination with Puerto Rico, you know, at or near the very top among U.S. jurisdictions. How do those concepts relate to herd immunity?

A Well, it's known from many sources, including the CDC but also the Puerto Rico Health Department, that the anybody levels of the Puerto Rican population is in the 90 percent level and I don't think anyone questions at 90 percent or higher is enough to give you herd immunity; that is to give you protection for the entire population.

Now, keep in mind that these vaccines are not approved to reduce transmission of the virus and, in fact, even Dr.

Fauci has said that the viral load among people that have been vaccinated and among people that have not been vaccinated is the same.

So, the vaccines do not stop transmission. What they do stop is serious hospitalization and death and so, the vaccines are a very good idea if you want to protect yourself against hospitalization and death but they will not and they're not FDA approved to reduce the transmission, particularly Delta or Omicron.

Q Okay. Let's move to testing in Puerto Rico and positivity rates, case rates. What can you say about these metrics before we start looking at charts and case statistics. How useful are measurements of testing and positivity rates?

A All right, there are many, many problems with the testing system for Covid both in Puerto Rico and everywhere else. First of all, there are some concerns about the quality of many of the PCR tests.

There are concerns with the way in which the tests are operated, in particular the cycle thresholds for the PCR tests. Basically PCR is a method where you pull a sample, you cycle it, then you cycle it again and each cycle you try and extract the purified fragments of the Covid virus and this goes up exponentially so that the recommendations of the major virology centers in the world are that you not

cycle more than thirty to thirty five times.

If you go past thirty five times, you may be picking up contaminants from the air. You may be picking up tiny fragments of dead virus that have nothing to do with anything and so, unfortunately in Puerto Rico and many other jurisdictions they're cycling thirty five to forty times and even higher and if you cycle higher than forty, some people have even said you can find Covid at and the batter's face.

Q So, just to be clear, you're saying that the way tests are being performed creates a lot of false positives?

A Absolutely and what also creates a mis-perception of the amount of positive people in Puerto Rico is two-fold. One is that people that show up at a testing center have a reason to show up at a testing center and so it's well known that people that get tested in Puerto Rico and other jurisdictions are more likely to be sick, more likely to have Covid.

I mean, why would you go to a testing center if you feel perfectly healthy? It's either because you have to fly somewhere or you feel sick and you want to know what's causing the illness.

So, it gives a false sense of how bad the disease is because you're going to have a much higher positivity rate in a self selected population that feels sick than you will in a random sample of the Puerto Rican population.

What makes that specially worst in the Commonwealth of Puerto Rico is that unlike every other jurisdiction that I'm aware of in the United States, people generally have to pay for these tests out of their own pockets and so, again, you're not going to just go out and spend $100 or more on a PCR test unless you're either really rich or you're really sick.

So, again, it tends to skew the population of those being tested towards the sickest.

MR. SHAPIRO: Thank you. I'll ask my co-counsel to put up ID 5 now, please. I apologize. There's a typo at the top in the title. Territory is misspelled but --

BY MR. SHAPIRO:

Q Dr. Hay, could you please describe what this chart shows and again, given the small font, what the various jurisdictions are.

A Yes. This is again, it's got a bar chart with the states and territories on the X-axis going across from left to right and the number of tests per hundred thousand residents and what you can see is that Rhode Island has the highest rate of testing per hundred thousand residents with essentially five PCR tests for every resident of Rhode Island and again, as you might expect, based on what I said about people in Puerto Rico having to pay out of pocket unlike other states and territories, Puerto Rico actually

has the lowest rate of testing per hundred thousand residents.

I believe it's less than one per hundred thousand, per person or something along that line. So, it's five times less than Rhode Island.

Q Just to be clear, what's the significance of Puerto Rico having a very low level of testing?

A Well, again it means that people in Puerto Rico unlike other jurisdictions are not going to get tested because it's not free and so they're only going to get tested, they're only going to shell out that money for the testing if they feel that it really might be beneficial because they're, let's say, very sick.

MR. SHAPIRO: Your Honor, I move the admission of Id 5 as Exhibit 5.

THE MAGISTRATE: Any objection?

MR. CINTRON: No objection.

THE MAGISTRATE: Admitted. Exhibit 5.

(Plaintiff's Exhibit 5 was admitted into evidence)

MR. SHAPIRO: I'll ask co-counsel to put up Id 6.

BY MR. SHAPIRO:

Q Dr. Hay, could you describe what this chart shows.

A Yes. This shows another selection bias in the testing results in the Commonwealth of Puerto Rico. This is the age

distribution of Puerto Ricans with Covid 19 testing as of December 1, 2021 and what you can easily see from this chart, these are different age groups going from the youngest in the bottom portion of the graph to the oldest in the top portion of the graph.

It's well known that the older you are, the greater the risk of bad outcomes, like hospitalization, critical care, ICU and death is highly correlated with age and so what you can see is that from the start of the lockdowns in March of 2020 right on through November of 2021, there's been a marked increase in the percentage of those tested being the youngest people in the population, 0 to 9, 10 to 19 and these are the people that are the least likely to be hospitalized or have bad outcomes with Covid and so the mixture of the tested population is even though as we already said, there's a bias in favor of severity, there are other biases based on age and you can't just say that what the population of Puerto Rico looked like in terms of Covid 19 last year or January or March of this year.

It's not the same as it is now and it's skewing younger and younger and thus healthier.

Q Does that mean that positivity rates from this testing is becoming more useful, less useful, the same as it's always been?

A Well, I would say less useful for all the reasons we've

mentioned and also the reason that because it's not a random sample. If you really want to know what's happening to Covid in the Puerto Rican population, you have to get a random sample and that's not what this is as is obvious from this chart.

MR. SHAPIRO: Your Honor, I move the admission of Id 6 as Exhibit 6.

THE MAGISTRATE: Any objection?

MR. CINTRON: None, Your Honor.

THE MAGISTRATE: Admitted as Exhibit 6.

(Plaintiff's Exhibit 6 was admitted into evidence)

THE MAGISTRATE: Dr. Hay, can I interject here and ask you a question? Would it make any difference if you were to know that in Puerto Rico some schools are doing random testing sampling of students?

THE WITNESS: No, because those schools themselves are self-selected. They might be Catholic schools. They might be private schools. They might be public schools and some schools are going to offer those and some schools aren't and so even if you random sample the people in a particular Catholic school, it may be very different from a school that doesn't participate or a public school.

THE MAGISTRATE: So, it would only be something valuable if every single school is doing it?

THE WITNESS: Well, I would -- I mean, I wouldn't even limit it to schools. I would say you have to do a random sample of the pediatric population and, in fact, a random sample of the entire population of Puerto Rico if you want to have an accurate assessment of what is happening to trends of Covid.

Again, just because a school decides to participate and they elegantly randomize within that school, there's a bias still because who went to that school?

Now, using the methods that I mentioned, the econometrics, we can overcome those biases if we're asked to by counsel but the way it exists now, I don't see any way that that could be feasible.

THE MAGISTRATE: Mr. Shapiro, you may proceed with the examination of the witness.

MR. SHAPIRO: I'll ask my co-counsel to put up Id 7.

BY MR. SHAPIRO:

Q Dr. Hay, could you describe what this is going to show shortly and its significance to what you've been talking about.

A Yes. Again --

Q Hold on, it's not up yet. There we go.

A It is burdensome to get the tests, particularly burdensome in Puerto Rico because they have to pay for it

out of their own pockets in most cases. It's also burdensome because you have to travel to a testing center and that imposes the greatest burden on poor people, people with little job flexibility and they can't leave their jobs.

People that have family duties and burdens. It's difficult to travel within Puerto Rico. There's not that many testing sites and in particular if you want to get -- the first graph shows all the testing sites in Puerto Rico.

The second graph shows the testing sites that can give you results in one day and in both cases it's going to involve lots of travel time and travel costs and perhaps loss of work, baby sitters, other things, to get these tests at these sites.

MR. SHAPIRO: Your Honor, I'll offer Id 7 as Exhibit 7.

THE MAGISTRATE: Any objection?

MR. CINTRON: No objection.

THE MAGISTRATE: Admitted, Exhibit 7.

(Plaintiff's Exhibit 7 was admitted into evidence)

MR. SHAPIRO: I'll ask co-counsel to put up Id 8.

BY MR. SHAPIRO:

Q Okay, Dr. Hay, what does this chart show?

A Okay, this is the rolling average, weekly rolling average of confirmed Covid 19 cases since April 1, 2020,

which is about when the lockdowns began in most jurisdictions so after they began in California and so, seven day moving average is the technical term for a weekly rolling average.

You want to have seven days because not all testing sites, not all vaccination sites, not all hospitals -- well, hospitals are open but lots of the surveillance activities don't take place with equal intensity every day of the week and so we do a seven day rolling average, seven day moving average and so this is the rate of confirmed Covid cases in Puerto Rico since April 1, 2020 and so you can see the first big peak in the winter of last year and this year, January.

You can then see another peak in March and April. You can see the Delta peak in August which rapidly declined and this is a theme with most infectious agents.

Over time the virus or the infectious agent, in this case virus could be bacteria, could be parasite but a new virus such as Covid adapts to the host, becomes less lethal over time and so each of these peaks will get smaller and smaller and smaller, and that's a natural phenomena.

You see this in jurisdictions like Florida which don't vaccinate and don't mask and don't have any mandates or lockdowns, you'll see exactly the same declining peaks in case load and what you can see is that over time these peaks get smaller and smaller.

Now, the next question is what was the affect of the mandates on these peaks and I think the next slide highlights that.

Q Before we get to the next slide though, Dr. Hay, what would happen -- so, you're saying, I don't want to put words in your mouth, so correct me if I'm misstating what you're saying. You're saying that there are a series of waves of declining height in terms of how Covid works and in terms of other viruses, again, correct me if I'm misstating anything.

What would be the effect on this pattern if the vaccination rate never increased from what it is today?

A Well, again, let me tell you. These are cases, this doesn't distinguish between severity or death or anything, these are just cases and it's well known. In fact, the FDA admits that the vaccines do not prevent transmission. So, the vaccines have no effect on number of cases.

Whether you're vaccinated or not, you still have the same viral load, at least with Delta and the evidence is so far also with Omicron. What happens is through the natural process of you might even call it evolution, the virus changes and becomes less lethal and more infectious.

This is called Far's Law. William Far, an epidemiologist long ago showed that this pattern exists in essentially every infectious disease and they were all (Inaudible) inverse correlation between the falidy and

transmissibility.

So, Omicron which just popped up all over the world in a matter of days, despite masks, despite vaccination, despite social distancing, despite lockdowns and it's popped up just as fast because as the FDA say, the vaccines don't stop it.

There's a very, very strong possibility, particularly if the population is as vaccinated as Puerto Rico, that Omicron will have absolutely no effect on hospitalization, ICU and death but it will transmit rapidly within Puerto Rico once it gets there, if it even has.

Q So it sounds like -- are you saying that the measures of cases isn't relevant or is no longer relevant to our dealing with the pandemic?

A Yes and I can show that in several other ways with some of the future slides.

MR. SHAPIRO: I'll then move now to admit Id 8 as Exhibit 8.

THE MAGISTRATE: Any objection?

MR. CINTRON: None.

THE MAGISTRATE: Admitted, Exhibit 8.

(Plaintiff's Exhibit 8 was admitted into evidence)

MR. SHAPIRO: I'll ask co-counsel to put up Id 9.

BY MR. SHAPIRO:

Q Dr. Hay, please explain this chart.
A Yes. This chart is the tail end of the last chart. So, it's just this is what's happened in Puerto Rico in terms of confirmed cases since November 15 and you can see that the mandates have had no effect on confirmed cases. They're basically flat.
MR. SHAPIRO: I move the admission of Id 9 as Exhibit 9.
THE MAGISTRATE: Any objection?
MR. CINTRON: No objection.
THE MAGISTRATE: Admitted Exhibit 9.
(Plaintiff's Exhibit 9 was admitted into evidence)
MR. SHAPIRO: I'll ask co-counsel to put up Id 10.
BY MR. SHAPIRO:
Q Please describe this chart, Dr. Hay.
A This is the number of cases per one hundred thousand residents by state or territory. Again, there's a misspelling on territory and Puerto Rico is highlighted in red as of December 1, 2021 and you can see that Puerto Rico as happens to us on the map because they have the lowest number of cases per hundred thousand residents of all U.S. states and territories, except for the Marshall Islands.
Q But you said that case numbers no longer matter. So, should we care that Puerto Rico has, at least according to

the testing with the problems that you identified, has a low rate of case prevalence?

A Well, it's, yeah, it's not -- even I've fallen into the trap of thinking that this data is highly meaningful. It's not because as you just said, the case selection is biased and it probably has different biases in different states and different territories but nevertheless, even accepting this data at face value with all its biases, I think it's better that Puerto Rico is at the bottom of the list than being, let's say, at the top of the list.

MR. SHAPIRO: Your Honor, I move the admission of Id 10 as Exhibit 10.

THE MAGISTRATE: Any objection?

MR. CINTRON: No objection.

THE MAGISTRATE: Admitted, Exhibit 10.

(Plaintiff's Exhibit 10 was admitted into evidence)

BY MR. SHAPIRO:

Q What are the lessons that we can draw, Dr. Hay, from case rates and what you're saying with the waves and what not that you talked about from Delta, from the Delta variant?

A Could you repeat the question? I don't understand.

Q Sure. Well, just to explain to everyone I guess where I'm going with this is the last, the first mandates went

into effect in partial response to the spread of the Delta variant. So, what have we learned from the Delta variant and Puerto Rico's experience with it?

A What we've learned is that cases declined rapidly according to the testing methodologies that they used and did not appear to be mediated whatsoever by demand (Inaudible)

THE MAGISTRATE: I'm sorry, the audio broke a little bit and I was able to hear Dr. Hay say cases declined rapidly but then I was not able to hear what he said afterwards. Could you please repeat what you said after that?

THE WITNESS: Yes, Your Honor. Cases declined rapidly after the peak of the Delta variant and that decline was not mediated by the vaccine mandates in Puerto Rico.

BY MR. SHAPIRO:

Q Why do you say that?

A For several reasons but if you go back to the previous chart, you can see that they were flat since the latest Executive Order was implemented and you can also see that the decline was prior to I think some of the previous mandates and it follows very similar trends in every other state and territory, including those that had no mandates at all.

MR. SHAPIRO: I'll ask co-counsel to put up Id 11

and I'm going to move to talking about hospitalization and the burdens on the healthcare system from Covid 19.

BY MR. SHAPIRO:

Q Dr. Hay, can you describe Id 11, the first chart I think there's two charts there, is that right? Okay, can you describe the first chart and the trends and the data on hospitalization since the beginning of this chart.

A Yes, I consider these next few charts to be extremely informative on the value of any of the mandate measures because these charts, the first one shows hospital bed utilization by Covid 19 status since August 1, 2020.

So, we're going back deep into last year's lockdown prior to even the development of the vaccines or even the release of the emergency authorization used to the vaccines.

This goes way back before then. Now what you can see is that neither the vaccines themselves nor any other measure that took place over that entire time frame had any impact whatsoever on hospitalizations due to Covid and why do I say that, well, okay, the bottom area of this hospitalization graph are the Covid cases in hospital and again you can see those waves and you can see the Delta wave which peaked around the beginning of September and rapidly declined.

So, it's almost invisible in this chart from about November 1 through now. It's almost negligible but what's

also very interesting if you zoom out on the whole chart is that almost every time you see a spike of Covid cases, every time you see that little upward bump in Covid hospitalizations, there is a one for one decline in hospitalization for other reasons and the overall rate of hospitalizations in Puerto Rico is pretty flat.

Now, it's a spiky little line which could be weekly admissions and discharges but it's pretty much flat. There is no trend in Puerto Rico. It looks like hospitals have stayed at about sixty percent occupancy for the entire time period and every time there's a Covid spike, it's offset by a decline in other hospitalizations.

So, what that tells me again is the testing may not be very reliable because maybe they're picking up false positives in these spikes. There's no clinical explanation for why Covid doesn't move the needle on changing the utilizations of hospitals in Puerto Rico and one of the major justifications that Public Health officials use for the lockdowns and the vaccine mandates is we have to preserve capacity in our hospitals.

Well, you can see that the capacity is forty percent vacancy pretty much the whole time, pretty much flat.

Q Just to be clear, are you saying that Puerto Rico's hospital system has never been threatened with overload capacity of being overwhelmed?

A That's what the chart shows. You can see that I don't think the numbers have ever gone up to seventy percent over this entire time period.

Q Just to be clear, what is the second chart on that page?

A Yes, the second chart is identical statistics and even more telling because now we're looking at even more serious cases. These are people that are admitted to the ICU. We all remember the horror stories of people in ventilators and not having enough ventilators and people, you know, waiting to get into hospitals.

That has never happened in Puerto Rico and it's never happened in the intensive care units, the critical care units of the Puerto Rican population and here you can see that again there is a one to one offset. So, every time there's a spike of Covid ICU cases, there's an equivalent offsetting reduction in non-Covid ICU cases and again there is no trend with respect to Covid, with respect to ICU admissions, it's flat.

It never gets above about 75 percent and so we've got a 30 percent excess capacity during the entire Covid epidemic all the way back to the 1st of August and every Covid ICU admission is offset by a reduced other patient admission.

Of course, the most likely explanation is you don't die of Covid. You don't get sick in the ICU with Covid. You

don't go to the ICU with Covid, due to Covid.

You do it because you've got underlying medical conditions, diabetes, obesity, heart disease, cancer, asthma, COPD and sometimes those are labeled Covid cases and sometimes they're labeled something else but the overall case load doesn't change.

Q What about at the height of the Delta wave, were hospitals or ICU utilizations ever threatened at being over capacity?

A No, you can see that the Delta wave starts in about August of 2021 and continues through October of 2021 and so you can see that Delta wave clearly on the ICU chart but if you look above, you can see it had no effect on capacity because every case was offset by reduction in some other case.

Q You testified that vaccination helps -- doesn't affect transmission but affects how severe someone's experience with Covid is. If that's the case then what is the relationship between the increasing vaccination rate during this whole period, at least since vaccines became available and the hospitalization and ICU rate?

A Well, what I can tell you as a health economist is that even though the FDA has approved these vaccines specifically to reduce hospitalization, ICU treatments and death, in the real world, at least in Puerto Rico, you don't see that at

the population level.

Now, I'm not challenging anything about the label for the Covid vaccines, I think the FDA is correct when they labeled those vaccines as reducing hospitalizations and deaths.

However, you don't see that benefit at the population level. Certainly not in Puerto Rico nor with (Inaudible) Well, I'll just leave it at that.

You don't see it in the population. I'm not disputing the FDA's claims and indications for the vaccines on the label but you don't see the benefits in the population.

Q What about the mandates as distinct from vaccination generally?

A Well, if the vaccines aren't changing deaths, ICU or hospitalizations in the Puerto Rican population, then the mandates won't either. Then again, we keep saying that the vaccines don't stop transmission.

MR. SHAPIRO: Your Honor, I move the admission of Id 11 as Exhibit 11.

THE MAGISTRATE: Any objection?

MR. CINTRON: None, Your Honor.

THE MAGISTRATE: Admitted, Exhibit 11.

(Plaintiff's Exhibit 11 was admitted into evidence)

MR. SHAPIRO: I'll ask my co-counsel to put up

Id 12.

BY MR. SHAPIRO:

Q Really quickly, Dr. Hay, because I think this re-encapsulates in a kind of a different view of other things that we've seen. Could you describe what this shows.

A Yeah, this shows essentially what we've already seen, the waves drop in severity and each wave is increasingly smaller. These are the waves of new admissions. Each wave is increasingly smaller over time and now we're pretty much down to negligible levels of hospital admissions and, of course, as we've seen from the last two slides, if you place the other admissions on top of this, it's a one for one offset.

MR. SHAPIRO: I move the admission of Id 12 as Exhibit 12.

THE MAGISTRATE: Any objection?

MR. CINTRON: No objection.

THE MAGISTRATE: Admitted Exhibit 12.

(Plaintiff's Exhibit 12 was admitted into evidence)

BY MR. SHAPIRO:

Q Okay, let's move to deaths. I'll ask co-counsel to put up Id 13.

A Yes. Okay, this is the same pattern of -- this is the number of confirmed Covid 19 deaths since April 2020. You

can see the waves. In terms of deaths, it does look like Delta is a little bit higher than prior waves but not as high as the first wave and after the Delta wave rapidly declined. It's now gone down to extremely low levels. The current death rate in Puerto Rico, the weekly moving average is less -- it's 0.6 per day.

Q What does the second chart on that page show?

A Yeah, let's put up the second chart. Okay. This is again like that other one, we blew up the last tail end of the previous chart and so this is from the beginning of November, November 13 through December 1, and you can see that it's negligible.

It's one or two per day occasionally. Lots of time zero deaths in Puerto Rico and it's not impacted whatsoever by the mandate.

Q What's the overall trend with deaths from Covid in Puerto Rico?

A Negligible. It's like I say, it's one or two or zero per day and given all the testing biases and testing issues that we've already discussed, obviously this would be an upward bias but it's still negligible.

Q How is that related to the trend lines that we've discussed with respect to cases and hospitalizations?

A It's similar. Cases have rapidly declined, hospitalizations have rapidly declined, at least for Covid

but they haven't declined for other things and so the overall hospital rates are the same and deaths have rapidly declined to essentially negligible. I mean, the number of car fatalities in Puerto Rico I'm sure is much higher than one or two per week.

Q Can we, you know, we've talked about these waves and these peaks. Can we expect to see more of those whether with Omicron or future variants that might come about?

A I think we may see increases in cases but particularly with such a high vaccine rate in Puerto Rico, I don't think we're going to see any increases in hospitalizations, ICU admissions or deaths.

MR. SHAPIRO: I'll move to introduce Id 13 as Exhibit 13.

THE MAGISTRATE: Any objection?

MR. CINTRON: None, Your Honor.

THE MAGISTRATE: Admitted, Exhibit 13.

(Plaintiff's Exhibit 13 was admitted into evidence)

MR. SHAPIRO: I'll ask co-counsel to put up Id 14.

BY MR. SHAPIRO:

Q Just to follow up on the last thing you said, Dr. Hay, based on your econometric analysis, is Covid becoming more or less lethal?

A Unquestionably it's becoming less lethal.

Q But more contagious?
A Yes. Far's Law, it says, "if you're less lethal, the trade off is you're more contagious because the virus has revolutionarily figured out how to evade the biological systems that want to kill it because it wants to kill them.
It's like they become more civilized. All germs become more civilized as they get older because actually as do humans. If you remember the barbarians back two thousand years ago.
Humans become more civilized, too, but germs become more civilized over time and they become more polite because if they want to survive, they don't want to do very much to you.
Q What do either vaccination rates or vaccination mandates, what effect would they likely have on this dynamic that you've described?
A Zero because they don't change transmissibility to the (Inaudible) whether you're vaccinated or not.
Q Could you describe Id 14.
A Yeah, this is the deaths per one hundred thousand residents by state or territory and Puerto Rico, as we said, we're down to negligible one or two less per day. It is at the very low end of the reported Covid deaths.
These are the states and territories again on the X axis and Puerto Rico is fifth from the bottom based on this

ranking of Covid deaths as of December 1, 2021.

MR. SHAPIRO: I'll move the admission of Id 14 as Exhibit 14.

THE MAGISTRATE: Any objection?

MR. CINTRON: No, Your Honor.

THE MAGISTRATE: Admitted, Exhibit 14.

(Plaintiff's Exhibit 14 was admitted into evidence)

MR. SHAPIRO: I'll ask co-counsel to put up Id 15.

BY MR. SHAPIRO:

Q Dr. Hay, what is this and this is the first time that we've talked about differentiating different kind of case and death statistics. So, please just make sure we're understanding what's going on here.

A Yeah, okay. This is a chart of confirmed and probable deaths in Puerto Rico as of December 1, 2021 and what you can see, first of all, let me explain the difference between a confirmed case and a probable case. A confirmed case is a case that is PCR positive.

We said there are still lots of problems with a so called confirmed case because PCR has a lot of testing biases.

Nevertheless, probable cases are people that are tested with the Antigen test, often rapid Antigen test, and the reason they are said to be probable is because if you test

positive in an Antigen test, it doesn't mean you have Covid.

It means you may have once had it and you still have antibodies against it and these antibodies are highly persistent. They can last as far as we know, well over a year and there's evidence, there's very strong evidence that natural antibodies; that is antibodies that are acquired through naturally catching Covid and then having your body naturally eliminate it are much more robust and effective against preventing additional cases than are vaccinated people.

What you can see is a sort of a troubling trend. At the very beginning, all the way through September, one hundred percent of the cases were PCR confirmed, so they are confirmed cases but over time they can't get as many cases with the PCR test as they used to be able to.

So, they're kind of goosing the system by adding in all these Antigen positive cases, which could be people that were infected a year ago and got over it a year ago. Lots and lots of people know that they've had it.

They know when they had it because they got sick. They might have even gone to the hospital but now they have a robust immunological protection that lasts much longer than the vaccines. We know the vaccines only last about six months at best and that's why they're pushing for boosters now and they'll probably be pushing for boosters even more

because artificial immunity from vaccines is not nearly as robust as natural immunity from being exposed to the actual virus and those countries like Sweden that never used vaccines or masks or lockdowns or shut down the schools, have a much lower death rate than we did, even though they don't use those methods and they have much more robust antibody protection.

Q We'll get to the natural immunity shortly but can you just for the record describe the colors and the forms of the lines in this chart.

A I would like to except I'm color blind. Let me take a second. The line on the top, the dash of yellow or green line says confirmed cases.

So, those are PCR positive cases. The dash line that starts out on the bottom is probable cases and you can see until September there were zero probable cases. They were all confirmed.

The I believe is blue line, is confirmed deaths and I think the red line, probable deaths. Now, one of the first things you can see from this chart that makes no sense at all is one hundred percent of the cases were confirmed but only I think forty percent of the deaths were probable.

Now, how can you have a probable death if all the cases are one hundred percent confirmed? There's some kind of statistical error there or logic error there and what you

can also see, which I say is also troubling for the Covid statistics in Puerto Rico, is they're relying more and more and more on probable cases, which could be people that were infected years ago and have gotten over it and have moved on and they're actually better protected than the vaccine people.

MR. SHAPIRO: I move the admission of Id 15 as Exhibit 15.

THE MAGISTRATE: Any objection?

MR. CINTRON: No, Your Honor.

THE MAGISTRATE: Admitted, Exhibit 15.

MR. SHAPIRO: I'll just state for the record and I should have said this with the first slide but for each of the exhibits, the data sources are indicated at the bottom of each respective exhibit. I'll ask co-counsel to put up Id 16.

BY MR. SHAPIRO:

Q What does this show, Dr. Hay?

A Okay, this is the weekly rolling average of daily confirmed cases since October 1, 2021 comparing Puerto Rico versus Florida. Now, as an economist, as a health economist, we don't have the luxury of doing randomized trials.

So, we use real world comps, real world comparison, just like a real estate agent trying to tell you what your

house is worth. They look at other houses, they look at what they're doing in those other houses, what the attributes are of those other houses and then they use that to come up with answers for you.

We use comps to say well, which health policies are the most effective in both reducing the burden of Covid 19 and not causing additional burdens by making people get tests, making people get vaccines, making people stay home from work, making people lose their jobs, et cetera.

Now, Florida and Puerto Rico could not be more different in how their health policy has approached Covid and yet Puerto Rico and Florida share many characteristics. They're both tropical territories of the United States. They're, I think Florida is the closest state to Puerto Rico.

Physically they both are in the Caribbean and yet you can see in Florida where Governor DeSantis has outlawed mandates, outlawed masks, outlawed any -- not outlawed masks but said, "you cannot tell anybody, even if you're an employer, even if you're a government agency, even if you're a school district, you can't tell anybody to vaccinate, you can't tell anybody to mask, you can't tell anybody to social distance" and Florida now is living -- they don't think three nanoseconds about Covid.

Their life is normal. It's the way it was before the

lockdowns and yet where you can see from this graph -- you know, everyone said, "well, Florida, if you don't do all these things that we tell you to do with masks and vaccinations and other social distancing measures, you're going to have an exploding rate of deaths from Covid."

It's just the opposite. Florida is living normally before the lockdowns and yet the number of cases in Florida is declining so that it's now negligibly different from that in Puerto Rico.

So, what that tells you is that the mandates are completely unnecessary to get you down to the levels of Puerto Rico, which as we said according to the stats on testing, is one of the best in the country.

Florida got down there doing nothing and living normal lives. So, again, and this just shows that the mandates are completely unnecessary. I would take it a step further and say Florida is going to out perform probably Puerto Rico but certainly many, many other states because they have robust protection. They have natural herd immunity.

Q Okay, let's talk about --

MR. SHAPIRO: Oh, I'll first move the admission of Id 16 as Exhibit 16.

THE MAGISTRATE: Any objection?

MR. CINTRON: No, Your Honor.

THE MAGISTRATE: Admitted, Exhibit 16.

(Plaintiff's Exhibit 16 was admitted into evidence)

BY MR. SHAPIRO:

Q Okay, so let's talk about natural immunity.

A If I could follow up on the herd immunity thing.

Q Sure.

A Okay, just briefly a comparison that I've been looking at since the lockdown is Sweden versus Norway. Sweden and Norway are almost identical countries. They share a thousand mile border. During the entire lockdown period, Sweden was made an example by the rest of the world as being totally irresponsible because they didn't mask, they didn't vax, they didn't shut the schools.

As of today, there are almost no pediatric deaths even though they've gone to school every day and even more importantly, in the last month during the time period when Norway is essentially highly vaccinated and Sweden is almost negligibly vaccinated, the rate of Covid cases is shooting up in Norway right now because we don't have the robust protection of natural herd immunity and it's low and flat in Sweden.

Q But you testified that Puerto Rico's whatever statistics we've been talking about, whether it's case numbers, hospitalizations, deaths, have compared very

favorably to other U.S. jurisdictions and at the same time Puerto Rico has also had very high vaccination rates compared to other U.S. jurisdictions.

So, why don't we attribute Puerto Rico's success to that high vaccination rate?

A Because as we can see in the Florida versus Puerto Rico, they've achieved the same thing without vaccine mandates and I would argue going forward, the protection you get from vaccines is less robust and so I think Puerto Rico and other jurisdictions with very, very high vaccine rates will end up with much higher Covid case rates and potentially hospitalizations and deaths than the jurisdictions that allow natural immunity to take place and again, there are many studies and literature showing much better persistence of natural immunity.

The immune system persists (Inaudible) again Covid and for over a year where we know vaccines are only for six months and we believe the protection will be more robust because the vaccine hits specific targets like the spike proteins and it's known that robust protection is going to -- it's available from natural immunity but the spike protein of immunity you get from the vaccines is easily evaded by the next variant, like Omicron.

Q Okay, we'll have an Epidemiologist and Immunologist testify about the significance of natural immunity and those

kinds of viral processes but as a health economist, what is your evidence that natural immunity is better than vaccination rates or should be considered in public policy making? Is it this comparison of Sweden and Norway? I mean, what else have you studied to suggest this?

A Yes, it's these comparable jurisdictions and Sweden and Norway is a great one. Another great one is Vermont and New Hampshire. They share a border along the entire Connecticut River and New Hampshire doesn't vaccinate nearly as much as Vermont.

We already saw Vermont is one of the highest in the country. Vermont is much -- New Hampshire is much lower and yet the case rates and case pathology rates are better in New Hampshire. Florida versus Puerto Rico. You can find examples of these everywhere.

Q What about new therapies that have been and are being developed or new variants that come along, how do you disentangle those factors from the impact that either vaccination rates or natural immunity might have?

A Well, that's another topic which I think also suggests that vaccine mandates are unhelpful and not productive. It's now -- we have at least two antiviral therapies, one from Merck and one from Pfizer that are approved by the FDA. There's I think 467 other antivirals in development.

Many will be released over the next few months but it's

already the case that if you do get sick and you get serious symptoms with Covid, if you take this Merck, antiretroviral or if you take the Pfizer antiretroviral or when these other ones come on line in weeks and months, you will reduce your risk of death by even more than with the vaccine and so rather than vaccinating everybody and having to deal with vaccine side effects and costs and burdens of vaccines, if you wait until people have symptoms and give them one of these antiretrovirals, deaths and hospitalizations should go to zero.

I mean, they are already negligible in Puerto Rico but if anybody does get sick, they should be taking these antiretrovirals.

Q Is Covid endemic now? What does it mean for a virus to become endemic?

A Absolutely. Covid is endemic. Certainly the Covid family of viruses has been around for thousands if not millions of years. We all remember Sars from a decade ago. That was corona virus 1.

They were all very similar and I think that shares 80 percent or higher of the genetic components of Sars Covid 2, Covid 19. These viruses can all be attacked with any retroviruses, any retrovirals in a way that doesn't deal with the spike protein and, therefore, if they mutate the spike protein to evade the vaccine, the antiretrovirals will

still work.

So, in terms of whether or not it's endemic, biologists have found Covid in nearly every animal species that I'm aware of. It's certainly in dogs. It's in cats, rat, bats and I just learned this morning that two hippopotamuses in the Belgian zoo tested Covid positive.

So, even if we mask and vaccinate every human being on the planet, which is not possible within my lifetime, not with current technology nor with political culture around the world, even if we do that, we're going to have a huge reservoir of Covid 19 in birds, cats, rats, fish, hippopotami and it always will jump back to the human population and when it jumps, it will jump in a way that evades vaccines.

Q So, just to be clear, what does endemic status mean? Does it mean widespread, does it mean jumping between animals and humans, does it mean something we don't have to worry about? What does endemic mean?

A Endemic means that it cannot be eliminated with existing technology from all human and animal species. It can't. You're not going to vaccinate every bird. You're not going to mask every hippopotamus. You're not for a dog.

By the way, it's ironic that people walk around with masks on their faces but don't have a mask on their dogs face. If you really want to halt this dead in its track on

the planet earth, you're going to have to mask and vax every living organism.

Q So, what are some examples of other endemic viruses because SARS is no longer, right? We don't talk about Sars anymore, so that got eradicated somehow.

A Well, I'm not sure that that's true. I'm not sure that there isn't some reservoir somewhere of Sars. We're not testing for it. We're not seeing outbreaks of it.

Maybe there's enough natural immunity to Sars Covid 1, that it has in fact dropped out of the human population, only to be replaced by Sars Covid 2, which has 80 percent of the same genes or some genetic material and Sars Covid 3 could have 80 percent of Covid 19's genetic material.

So, it's going to keep mutating and we're never going to stop it with vaccines, particularly if the vaccines aren't given to all the animals and if the vaccines themselves don't stop transmission, which we know according to the FDA, they do not.

Q So, is the flu endemic? Is the common cold endemic. I mean, what -- you know.

A Yes, we have learned to live with the flu. Guess what, we call most flus, Avian flu type such and such because they come from birds. They transmit across the animal species barrier from birds to humans or from rats to humans or from bats to humans and that's never going to end.

Every year there are slight differences in Avian flu or bat derived flu. The same with the common cold which is ironically a type of Corona virus in many cases. The common cold we've learned to live with and it would not surprise me if people who are very, very sick with underlying conditions, some of them might even die from the common cold but we don't hope to (Inaudible) to stop the common cold or the common flu.

Q So, is your argument that vaccine mandates aren't helping stop the spread of Covid or the severity of Covid or that they're not -- whatever they're doing is not worth other costs that they're imposing?

A I think both. We've certainly seen in the Covid data in Puerto Rico on hospitalizations, ICU admissions and deaths that vaccines are having no affect on human outcomes and I think we're just going to have to learn to live with this plus if we have all these new medicines, antivirals that treat very, very serious cases, the vaccine mandates are totally burdensome and not useful.

Q Just to tie up something that you said earlier to what you just said, what effect have the vaccine mandates in Puerto Rico since the first ones went into effect in August, had on the rate of vaccination, as best you can tell?

A Negligible. I think that the rate of vaccination was about the same and the counter factual is that there might

be a slightly lower number of vaccinated people but maybe one percent, something like that.

Q How did you go about performing your analysis?

A I took data from the Puerto Rico Health Department as well as the U.S. Centers for Disease Control and as you say, all the references for all of the data that I presented today are listed at the bottom of each of these charts.

Q Why are your analytical methods for coming to all of these conclusions superior to what Public Health authorities are arguing and we're going to have -- the Puerto Rico government is going to present their expert witnesses and they're going to say that vaccine mandates are helping and are justified. Why is your analysis -- why are your methods superior?

A Because I think I'm looking at the big picture with, you know, the best data that's out there and I think I'm drawing the right conclusions from those data.

Q But why is it relevant what an economist would have to say about a pandemic as opposed to an Immunologist or an Epidemiologist? If you're not really understanding this disease, wouldn't those sorts of experts know better than you what's justified and what's not?

A No, absolutely not. I mean, there's a reason why health economics has grown from when we first started the International Society of Pharmacal Economics and now comes

research. In 1995 we only had thirty members.

We now have I think over twenty thousand members of that society globally. I don't know how many Epidemiologists there are but there might not even be that many Epidemiologists in the world and the reason why we are so popular and all of my students get snapped up the moment they get their PhD is because everyone knows that what we do is extremely valuable in order to understand how drugs work, how they work in the real world as opposed in the clinical lab and we have the ability to analyze that data and assess the value of different interventions and that's what we're taught to do and that's what we do research on. That's what I've been doing for 40 years and my services have always been highly sought after and so it's pretty clear that society sees a very high value for the kind of work that me, my students and my colleagues are doing.

Q Are you saying that when Public Health authorities are dealing with pandemics they should just listen to economists and not doctors and scientists?

A Absolutely not. I think every expert has their place. What I would love to see is a lot more health economists in the Puerto Rico Department of Health, in the departments of health of every state and territory, in the NIH, in the CDC, in the federal government because unfortunately this valuable perspective of health economics and analyzing big

data with econometrics is not in the skill set of the people making these decisions.

Q Are you saying Epidemiologists, Endinologists, public health scientists all universally lack what econometric training or some other kind of methodological training that you possess?

A No, they don't all lack it. I'm saying that we are not adequately represented at the table when these public health decisions are made. Just for example, Professor Van Der Willy at Harvard is an Epidemiologist, world class, and he invented a lot of the techniques that I use. I'm not saying Epidemiologists can't do this stuff.

Some of the best work in this area is done by Epidemiologists but some of the best work is also done by health economists.

MR. SHAPIRO: I think I'm done, Your Honor.

THE MAGISTRATE: Okay, well, it's almost noon, at least here in Puerto Rico and we have been almost non-stop for almost three hours. So, I think that this might be a good time for a break. So, Counsel, I understand that -- unfortunately right now we don't have any cafeteria in the facilities. So, this is going to -- if you want to have lunch, unless you're fasting, if you want to have lunch, this is going to mean that you're going to have to exit the building.

So, it might force me to have to give you a little bit of a longer break than otherwise we would have had to give. So, how about if we reconvene at a quarter after one p.m., Puerto Rico time. Puerto Rico time. Right now in Puerto Rico is almost 12:00 p.m.

So, this would give us an hour and fifteen minutes. So, if you want to take advantage of part of this break, although it's not my intention of depriving you of your lunch time but if you want to take time to mark any exhibits for whatever or for any future witness, of course, you can take advantage of that opportunity as well.

So, Dr. Hay, you're not excused yet because we have to proceed with your cross examination but we're going to take a break of one hour and fifteen minutes because we have been already non-stop for the past three hours.

So, and it's also noon here in Puerto Rico, so I'm going to provide everybody with a lunch break. So, we're going to reconvene at 1:15 p.m. Puerto Rico time.

Dr. Hay, I'm going to respectfully ask that during this recess, you do not talk with anybody about matters related to this case or matters related to your testimony as you're still in the middle of your testimony.

THE WITNESS: Yes, Your Honor.

THE MAGISTRATE: All right, Counsel. Any exhibits that have already been admitted into evidence should remain

with the Courtroom Deputy Clerk. I'll see you -- of course, if the defense needs these exhibits for cross examination, of course, they're available to you as well.

So, that will be all for the time being. We'll see each other again at 1:15 p.m. As we say down here in Puerto Rico, Buen Provecho or Bon Appetit. The Court is in recess.

(Court adjourned at 11:59 a.m.)

AFTERNOON SESSION 1:16 p.m.

THE MAGISTRATE: Good afternoon, Counsel.

MR. BAUERMEISTER: Your Honor, just a quick housekeeping matter, Your Honor. Did Your Honor say that Friday now it's a no go, right, not just during the --

THE MAGISTRATE: It looks -- right now, let me put it to you this way. Right now my entire Friday is booked with hearings. So, unless something unexpected arises, which you're free to ask me on Wednesday again, you know, like last minute request for continuance of hearings or that for whatever reason needs to be vacated, at this moment I'm not anticipating having proceedings this Friday related to this case.

MR. BAUERMEISTER: Thank you, Your Honor, just because we might need to re-arrange some witnesses as we have one on Friday in the afternoon but we should be fine. I just wanted to confirm.

THE MAGISTRATE: Well, again you're free to ask me once again if you'd like on Wednesday. You know, my calendar is a live calendar. It keeps changing, you know, lawyers file motions everyday. So, as of right now, the answer is, no. We're not going to be able to have proceedings on Friday related to this case, as of right now.

My Friday is completely booked. Could it change, I suppose so but it's hard for me to speculate. All right?

MR. BAUERMEISTER: Thank you, Your Honor.

THE MAGISTRATE: Okay. We'll proceed now with the testimony of Dr. Hay. I believe that we are going to proceed now with his cross examination. So, Mr. Cintron, your witness for cross examination.

MR. CINTRON: For the record, Attorney Jose Cintron Rodriguez.

CROSS EXAMINATION

BY MR. CINTRON:

Q Dr. Hay, good afternoon.

A Good afternoon.

Q Dr. Hay, towards the end of your testimony and answering questions by Attorney Shapiro, you stated that your general aim was to have the perspective of the health economist be given a greater weight in this kind of policy decisions. You used the phrase "placed at the table", is that correct?

A Yeah, I think better the decisions would have been made about the public health measures on Covid if Health Economists like me or even an Epidemiologist would understand the methodology.

I'm not saying health economists are the only people that understand this methodology but I think there are a lot more health economists. I haven't done a formal survey but I think there are a lot more health economists that

understand these methods than most Epidemiologists.
Q You do not intend to minimize in any way the role or the statistical tools of Epidemiologists, immunologists to other kinds of health professionals?
A Of course not. I think expertise has it's own perspective and adds something to the table.
Q Dr. Hay, as you may remember, we met back in September in this same court that you testified in a case that was somehow related to this one. Is that correct?
A I'm not sure I understand what you mean by somehow related.
Q Well, the issues were in some way similar even though the facts and the plaintiffs have different allegations but the issues, at least the scientific issues were in some way similar. You remember --
A Yes, there were some similarities.
Q Yes. Do you remember that you rendered a written report on that case?
A Yes.
Q Do you remember the contents of that report?
A I don't have it memorized.
Q All right. Dr. Hay, I'm going to read a passage from that report, and specifically from page 8, paragraph 15 and it reads as follows and from here on I'm quoting you.
"For this reason only Econometricians can piece out

causal relationships in real world data and be confident as to whether an observable variables could overwhelm the findings from existing data. Recent advances in machine learning and artificial intelligence have dramatically grouped our abilities to generate valid and reliable results from insurance claims and other administrative data bases."

My question is this, is your statement on variants with that statement contained in your written report?

A No, I find that statement to be still one hundred percent correct and I will also tell you that one of the reasons I'm so confident that we can accomplish what I said in that sentence is because of the pioneering work of Epidemiologists like Van Der Willy. Dr. Van Der Willy at Harvard who has shown us some additional, even more powerful methods to add to the methods we have.

So, I think, you know, having Epidemiologists and Health Economists work together could be a tremendous thing.

Q Van Der Willy is not an economist, is that right?

A No, he's an Epidemiologist at Harvard.

Q He's not a Health Economist?

A No, he's an Epidemiologist at Harvard.

Q But from the passage I just read to you and for these reasons only Econometricians can piece out causal relationships and you stated that you still stand by the truth of that statement as you wrote it back then.

A I don't think I said all Econometricians. I'm sure there are some Econometricians who may --

Q All Econometricians, that's what it says.

A Epidemiologists may not be able to do this.

Q Dr. Hay, in this kind of policy determination, there may be a legitimate debate as to the role, the proper role and the proper scope of the input to be furnished by health economists or by economists.

My question is this, does that debate belongs properly in the scientific debate or is that a debate that belongs in a courtroom?

A No, but -- I don't, yeah, certainly debates of that type do not belong in courtrooms directly. They belong in the research literature but when there are methodologies that are not being applied because of for whatever reason, that could be provided in this epidemic and in other situations, then I think it's important that Judges and juries and people in courtrooms understand that we have very valuable advance methods that are not being used by many of the people that are making public policy decisions.

Q Are you familiar with the concept of causal inference?

A Yes. In fact, a colleague of mine at UST San Diego, Clyde Granger, won a Nobel prize for demonstrating Granger causality with econometrics. That's like I said, economists have been doing causality with real world data and

developing techniques, including Nobel prize winning techniques, for decades if not close to 100 years.

Q Is that an area of statistics or econometrics that can identify causal relationships from a real world data?

A Granger Causality, I just told you. It's used real world data. He won a Nobel prize for showing how to demonstrate causality with real world data.

Q Mr. Hay, who are the leaders in this field from economists standpoint?

A Well, I just gave you one. I consider myself to be if not a leader, certainly an avid acolyte. I would consider Professor Van Der Willy at Harvard, even if he doesn't flat out say that's what he's doing. In some sense, that is what he's doing.

Q Are you familiar with the work of James Robbins?

A I think I've heard the name Robbins, yeah.

Q In this field?

A Is he an Epidemiologist?

Q I understand he's not an economist.

A Yeah, I don't think he's an economist.

Q Julian Pearl. Are you familiar with that name at that work?

A Not specifically, no.

Q Donald Rubin?

A Yes.

Q Is he an economist?
A No, he's an Epidemiologist and I would say that what Rubin and Rosenfeld did with their development of the propensity score, is in fact the exact opposite of causal inference with real world data because their methodology which is now been, is used by widely by almost all Epidemiologists.

It's taught in all Schools of Epidemiology and by the way, I taught Epidemiology at the Yale School of Public Health when I was on the faculty at the University of Connecticut.

Rubin and Rosenfeld developed something called the Propensity Score which explicitly makes it impossible to derive causal inference. So, most of what Epidemiologists have been doing, under Rubin and Rosenfeld is, in fact, incapable of using real world data to develop causal inferences, unlike what Van Der Willy is doing and what Granger is doing and what I've been doing.

Q So, are you telling us that Epidemiologists are not capable of piecing out causal relationships with concrete evidence, taking into account an observable variable?
A No, in fact, I just told you that Professor Van Der Willy does exactly that and I learned a lot of what I do from him but not everyone in the Epidemiology field even knows what Van Der Willy is doing.

I can tell you that because if you look at the papers he's written, he complains a lot about the fact that they're not picking up his methods.

Q Let's move on to another subject. As you testified in the contents of the different exhibits and answering questions of Attorney Shapiro, you provided or you made reference to the vaccinated individuals, to the vaccinated segment of the population.

Can you broadly define what would be a vaccinated person? Would that be a person with one shot, two shots, three shots?

A Well, I think in the set of slides that I presented, we clarified whether we were talking about people with one dose or full vaccination. Yeah, so that's what we did.

Q So, one or two, that's your answer?

A Yeah, it's a little complicated because unless you know that their vaccinated with, you don't know whether they had a complete vaccination. For example, with Pfizer and Moderna, you need two plus a booster shot has recently been authorized, I believe, under emergency use. Authorization I don't think it's fully officially approved, certainly not for all age groups but what I can tell you is that at the level of detail we had, we couldn't tease out whether how many were Johnson & Johnson vaccines where you only need one and how many Pfizer but we still show that the number of

people with two doses, which is full vaccination under either Pfizer or Moderna vaccinations is extremely high in Puerto Rico, if not the highest.

Q So, it's a broad definition that doesn't account for these differences. That's what you're telling us?

A No. We separated it out versus one dose from those with two doses. We have graphs on both and they're both extremely high in Puerto Rico.

Q So, some graphs are based on the definition based on one dose and others on two doses.

A Yeah, and it's clearly marked on each chart.

Q So there is no consistency in the different (Inaudible), is that right?

A Yes, it's totally consistent. If it's one dose, we say one dose and if it's two doses, we say two doses.

Q All right, moving on. You testified as to difficulties in testing in Puerto Rico and you specifically spoke about the issue of costs, during your testimony. Is that correct?

A Yes.

Q Are you aware of the fact that the Puerto Rico Department of Health runs free testing sites in various parts of the island?

A Yeah, I think I'm aware of that.

Q Are you aware that some municipalities also run free testing sites?

A Not specifically, no.
Q Did you seek or obtain information on that regard during your process of investigating this matter and formulating your conclusions?
A Only to the extent I needed to. It's absolutely clear that for many Puerto Ricans, time and waiting delays of going to a free testing site may outweigh even the $100 cost out of pocket of buying a test yourself.

So, for many people just getting there and doing that is not all that feasible particularly if your employer won't let you out of work.
Q Isn't it true that these are two different matters, one of them the particularly a problem?
A Can I finish my answer, please?
Q Go ahead.
A Yeah, the cost burden may actually be even less than the time and waiting burden of going to a free clinic but in any case, the testing in Puerto Rico is the lowest in the country as I've shown in my graphs.

So, whatever they're doing in the municipalities and in these Public Health testing sites is not enough to get Puerto Rico above the very bottom of U.S. in terms of number of tests per thousand or one hundred thousand.
Q But is that an issue that goes to the availability and the existence of pre-testing sites or is that an issue that

goes to another matter?
A Well, whatever free testing is going on in Puerto Rico is not enough to get them out of the bottom wrung of the number of tests per one hundred thousand residents.
Q Moving on to another chart, Dr. Hay. Taking into account the Delta variant, currently, what is the percentage at which herd immunity can be achieved?
A Well, I'm not an expert on what the threshold is for herd immunity. Having looked at the literature, I think almost everyone agrees that if you get up to 80 percent, you'll have herd immunity and so I kind of accept that.
Q You made reference in your testimony to testing in schools in Puerto Rico. You described it as random testing and you said that it tends to throw some doubt on the true picture of the situation. Am I correct and did I understand your testimony correctly?
A No. The Judge mentioned random testing in schools and so I pointed out that even if you randomly tested within schools, unless you randomly test the people that don't go to school, unless you randomly test people in every school, it's not a random sample.
Q Are you familiar, did you become familiar in the course of investigating this matter with the school protocols and the school methods for testing, in school testing in Puerto Rico?

A No, because it wasn't necessary for my testimony.
Q Are you aware or do you know to what extent those protocols and those guidelines are consistent with CBC guidelines on this subject?
A No, because it wasn't necessary for my testimony.
Q You've been critical of random testing. Let me ask you, what would be an alternative, an acceptable alternative for that, mandatory testing?
A Actually I'm not critical of random testing if you have a random sample of the entire population. I think that's exactly the kind of testing that would be reliable. So, I think random testing would be a reliable way to test. What I'm saying or what my testimony was, was that the testing they do is highly selectively biased because the people mostly have to pay for it out of their own pockets and they're not going to do it unless they're really sick.

So, you're going to get a very biased and exaggerated view of how many people in Puerto Rico have a positive Covid if you're only looking for people that are not random but just show up at the testing center.
Q Dr. Hay, when you described your method and the methods used in your particular discipline, your field of expertise, you testified about the ability of economists to look, examine and to reach conclusions based on what you call big data. Am I correct?

A Yes.
Q Have you compared and made a contrast with the method used by physicians who look at issues one by one of the patients, of the incidents of one by one instead of the big picture you referred to?
A Yeah, I think that's generally true. I think some physicians are also trained in epidemiology. Some are trained in statistics but again, if their statistical or epidemiological training doesn't include the kind of methods that Professor Van Der Willy uses or that I use, then I wouldn't consider them to have the same understanding that I have about big data and I think it's generally true that a physician that is in practice as their main job, so they're treating patients on a daily basis one by one, I think that gives them a very different perspective than someone like me who's looking at big data.
Q When you described the advantages of big data, you stated that it allows the economist to derive insights from claims, the study of claims and the trends they show. Am I right?
A Yes.
Q Isn't it true that in many instances, many situations in which an individual has to go and seek medical treatment regarding this condition or any other condition, does not necessarily generate the claim?

A Um, it's -- I would say the opposite. I say most of these actually do generate claims. There's very few people in Puerto Rico for whom there isn't some electronic record or electronic health record or electronic claims record or billing record.

I think it's very unusual even in Puerto Rico that you would not have some kind of big data on patients of Puerto Rico.

Q Have you had access to statistics or information in that regard as to what specific percentage generates or does not generate a claim?

A Only to the extent that I've reported, you know, the big data statistics in the evidence that I presented.

Q So, you cannot tell us about the actual figures or even in a closer proximity.

A Of what?

Q Of what fraction of the situations in which an individual has to seek medical attention generates a claim.

A Oh, well, look I've looked at Puerto Rican data for thirty years at least in Medicare, in Medicaid, in insurance claims, data bases, in legal cases and in those thirty plus years of looking at Puerto Rican data in big data basis, no one has ever told me that Puerto Rico is unique because some large percentage of patient information never exists in electronic files.

Q So, is it your testimony that this lack of information and disregard of what part does not generate claims, that does not in any way limit your insight or your ability to reach conclusions? Is that your testimony?

A No. I mean, I've been very clear about the data sources I've relied on, which are mostly in this case, the Puerto Rico Health Department and the United States Centers for Disease Control and Prevention and again, having used those data for more than three decades, I'm not aware of any specific Puerto Rico problems on those data sets.

Look, we have guidelines and certifications and data transmission protocols and things that have been standardized since the 1960s on insurance, on Medicare, on Medicaid, on employer based insurance policies and in those three decades or more, no one has ever told me, "oh, you got to watch out for Puerto Rico because it's so different. It doesn't follow these data transmission guidelines, it doesn't follow the data variable element definition characteristics or acquisition of these records."

All these things are standardized nationwide and I'm not aware of any evidence that Puerto Rico is failing to follow these data collection and transmission standards.

Q In answering questions by Counsel Shapiro on the purpose of what you are requested to do and to evaluate for purposes of your testimony in this case, you stated that you

were asked to comment on the trends of Covid 19 cases in Puerto Rico with the lockdowns and the effectiveness of the vaccine mandates. Am I understanding you correctly or is that your testimony?

A Yeah.

Q You were requested to carry out that task strictly from an economic standpoint, is that correct?

A What do you mean by that?

Q Limited to your field of expertise.

A Of course, I evaluated it from the perspective of me being a professor of Health Economics having taught well over 150 PhD and Masters students in health economics, having taught thousands of physicians, nurses, pharmacists, dentists and many, many others on some of the statistical epidemiological and econometric techniques that we use. So, I bring all of that expertise to the task for which I was asked to provide testimony.

Q You mentioned during your testimony the concept of saturation and you stated, according to my notes, there is no evidence that increasing vaccination has done anything to lower hospital and death rates and there are other mitigating ways. Was that your testimony?

A I think it could be characterized to include those elements, yes.

Q As regard to those other mitigating ways, exactly what

were you talking about? What are you referring to?
A Travel bans, if you're worried about some new variant. Puerto Rico is an island and it would be much easier on an island to implement travel bans than in a contiguous continent like North America or South America or Europe or Asia. That would be one.

Number two, as I said, there are two highly effective anti virals approved by the FDA, one from Merck, one from Pfizer, that essentially dropped the death rate to zero. I believe in one of the drugs, there was zero deaths in the treatment group. Maybe both of them, I don't remember but if you can get the death rate to zero with any retrovirals that are used only on the patients that are sick, first of all, it's more efficient. You're not out there vaccinating everybody because you don't need to. They're not all sick.

You target the treatment to the people that need it and the treatment is one hundred percent effective or very close to one hundred percent effective in preventing death from Covid.

So, that method in my view would be A, much more effective, B, much cheaper, and C, you don't have the burden of having people get these vaccines.
Q Are those medications already in the market for individuals who are not receiving treatment in a hospital?
A Those treatments are in the market and I believe

they're available to people that have signs and symptoms of Covid disease.

Q Are they available over the counter?

A I don't believe so but the other nice thing about these treatments is they are pills. All you have to do is go to the pharmacy and pick them up. You take them home. Everyone knows how to take pills, unlike vaccines which have to be stored at an extremely low temperature. I don't remember the exact temperature but it's got to be in a very special freezer and it will be damaged if it becomes unfrozen.

So there's a huge supply chain logistics problem with these frozen vaccines. They're extremely low temperature. The pills just sit there in the pharmacy or you take them home and you don't even have to put them in the refrigerator and you can take them yourself.

You know how to take a pill. So, I don't believe in mandates generally but I would be much more favorable to a pill mandate if you got really sick than a vaccine mandate to everybody on the planet.

Q Would general use of those medications and availability of them over the counter, would that have to be FDA approved?

A They already are FDA approved and there's 467 other antivirals that are in development and they will be coming

in on line probably on a weekly basis within the next several weeks and the other point I want to make about the pills rather than the vaccines, the vaccines are targeted at the surface spike proteins on the Corona virus and if the Corona virus mutates and changes its spikes, the vaccine doesn't work or it doesn't work as well.

The pills don't target the spike proteins and there's no way the vaccine is going to mutate to overcome these pills, certainly not as easy as they have, as we've seen with Delta and Omicron with the vaccines.

Q Dr. Hay, at the end of the day, isn't it true that whether the availability of this medication is an effective alternative to vaccination, it's a clearly judgement, it's not an economic judgement.

A No, it's a big data judgement as well because we know the pills work, we know they prevent essentially all deaths from Covid. The vaccines we know do not prevent all deaths from Covid. They don't prevent all hospitalizations, they don't prevent all intensive care unit stays and they have zero effect on transmissibility of the virus as Dr. Fauci said.

Q You also referred in your testimony when you were discussing the general subject of testing problems and testing difficulties which, by the way, you described as being problems in Puerto Rico and everywhere else. Is that

correct?

A Yes, the testing problems for the technology of the test themselves is no different, is no worse or better in Puerto Rico. What is worst in Puerto Rico is the fact that so many people have to pay for the test out of their own pockets. They have to lose -- they have to take time out off from work, take time off from their families and it's very burdensome.

In other jurisdictions, that's not nearly as true which is why Puerto Rico has either the lowest or nearly the lowest rate of testing in the U.S. population.

Q You testified as to the quality of the PCR tests and the high possibility of these tests reflecting false positives.

A Yes.

Q Isn't it true that this goes to the clinical aspect of that particular tool, of that particular method, that is therefore outside your field of expertise?

A No, because again you can look at the big data and you can see that despite the fact that Covid has come in waves, according to the PCR tests in Puerto Rico. You had the first wave, you had the second wave, you had the Delta wave. Each wave, by the way, getting smaller and smaller.

What you see is that hospitalization rates don't change. ICU rates don't change. Deaths are now negligible.

So, the tests are not picking up anything that is relevant for the purposes of public health, such as hospitalizations, severe hospitalizations, critical care unit admissions or deaths.

So, if the tests are not useful for those things, they're not very useful.

Q That's the situation not only in Puerto Rico but everywhere else?

A Yeah, I think that's generally true but then Puerto Rico is one of the key places that has -- can I finish my answer? Puerto Rico is one of the few places in the country that has such strict mandates on the population.

Q So, those difficulties, those technical difficulties regarding testing are true in Puerto Rico and other jurisdictions with numbers far different from Puerto Rico in terms of (Inaudible), contagious, hospitalizations, et cetera?

A Could you repeat the question, please.

Q So, those technical difficulties in testing which you refer to, which you indicated in your testimony that are the same in Puerto Rico and in many other places.

A Yeah, the technical difficulties of the tests are going to be the same wherever it's used. Now, whether you --

Q It will be the same wherever it's used. Even in places whose numbers are very different in Puerto Rico?

A Can I finish my answer? Whether you amp the cycle threshold over thirty three, which is irresponsible according to the scientists I've read and the Cope Institute in Germany, which is their Public Health Epidemiology, the most prestigious Epidemiological Institute in Germany, probably in Europe.

They advise, do not go over thirty three cycle thresholds and I'm sure in Puerto Rico they're doing that.

Q But I go back to my question. Those technical problems regarding testing, you find them in Puerto Rico and in other jurisdictions whose numbers are very different from Puerto Rico. Is that correct?

A Well, I don't know that -- I'm sure in Germany they don't cycle more than thirty three cycle thresholds whereas in Puerto Rico they do. So, no, there's still even more differences.

Q You indicated in your testimony that new virus adapts to (Inaudible) and gets more lethal over time.

A No, I said the exact opposite. I said it gets less lethal over time.

Q Less lethal over time. Again, isn't it true that that's a clinical judgement which belongs outside of your field of expertise?

A No, I look at the big data and I can see that.

Q Dr. Hay, you testified on Exhibit Number 10, I don't

know if you have the documents in front of you.

A Which exhibit is that?

Q 10.

A Yeah, but I don't know the exhibit numbers. What's the title?

THE MAGISTRATE: Could you please place that on the document projector, please, because I want to make sure that Dr. Hay is looking at the document that you're actually referring to and also for the benefit of the Court.

So, if you could please place exhibit 10 in the document projector, I would appreciate that. The same goes for any other exhibit that you might want to show Dr. Hay during your cross examination.

MR. CINTRON: I'm not quite sure how to turn this on.

THE MAGISTRATE: Well, Mr. Rodriguez will give you a hand on those matters.

MR. SHAPIRO: If I can be of help, Dr. Hay, it's I believe Exhibit 10 as the chart says, "Cases per one hundred thousand residents by state, territory." There we go.

THE MAGISTRATE: Okay. So, Mr. Rodriguez, could we please have -- what about Dr. Hay? I can't see him now on the screen.

THE WITNESS: Yes, I can see the screen clearly. I can see "Cases for one hundred thousand residents by state,

territory, Puerto Rico."

THE MAGISTRATE: Okay. Can you see Dr. Hay, the exhibit?

THE WITNESS: Yes, I can, sir.

THE MAGISTRATE: All right. Mr. Cintron, you can proceed now with your cross examination.

BY MR. CINTRON:

Q Yes, in answering questions regarding this exhibit, you stated that even at face value Puerto Rico is at the very bottom in terms of what the graphic shows, cases per one hundred thousand residents.

A Yes.

Q The graph shows, in fact, it shows a declining trend. Is that correct?

A No, sir, this has nothing to do with time. This is by state and territory, as of December 1. So, what it's saying is that throughout the epidemic, at least as of December 1, 2021, Puerto Rico has the lowest number of Covid cases per hundred thousand except for the Marshall Islands, Palau and the Republic of the Marshall Islands.

The Northern Marshall Islands and the Republic of the Marshall Islands and Palau are the only states or territories that have lower Covid cases per hundred thousand as of December 1.

Q You understand that this low figure has nothing to do

with the vaccination mandates?
A It has nothing to do with the vaccination mandates at all and that's what my testimony said.
Q Are you familiar with the contents of the mandates of the other jurisdictions to which the graph makes reference?
A Not all of them. It's public information and at some point I'm going to analyze every state and jurisdiction but all the evidence that I've examined thus far for all the jurisdictions I've looked at thus far show that the vaccine mandates have no impact on serious events, hospitalizations, critical care admissions and deaths.
Q You stated at various points in your testimony that vaccination does not reduce transmission.
A I'm just telling you what Dr. Fauci has stated. The viral load is identical between --
Q Is that the official CDC position?
A Well, he's the official health advisor to the President on Covid and so, if it was inconsistent with CDC, I'm sure someone would have said so.
Q But he strongly recommends vaccinations, is that correct?
A To prevent serious outcomes, to prevent death, to prevent hospitalization but he does not recommend it nor does the FDA by that matter and they're the official decision makers about what the vaccine is allowed to claim

in its label and the FDA says, there is no benefit on transmission as does Dr. Fauci.

Q Preventing deaths and hospitalizations are legitimate public health objectives?

A Not really because people have their own personal incentives to not die from Covid or to not get hospitalized from Covid. In other words, if Covid was very lethal for somebody, let's say an elderly immunocompromised patient with other co-morbidities, then they would have their own incentives to get the vaccine to prevent their own death, to prevent their own hospitalization, to prevent their own admission to the ICU.

So, we don't need a public health person telling them, "oh, you don't want to die, do you?" because the public health aspect is to contain the virus and these vaccines do not contain the virus.

They do not stop transmission in any shape or form. So there's no public health benefit. There's a private health benefit. You know, if I could prevent my own death with a vaccine or a drug, I've got a pretty good incentive to do that but I'm not preventing transmission. So, there's no real public health benefit.

MR. CINTRON: Your Honor, may I confer with fellow counsel for a minute?

THE MAGISTRATE: Of course, of course.

MR. CINTRON: Your Honor, we have no further cross examination questions for Dr. Hay. Thanks very much, doctor.

THE MAGISTRATE: Okay. Well, may we excuse Dr. Hay?

MR. SHAPIRO: I just have a couple of questions on redirect if that's okay, Your Honor.

THE MAGISTRATE: All right, briefly.

MR. SHAPIRO: Yes.

REDIRECT EXAMINATION

BY MR. SHAPIRO:

Q Dr. Hay, you were just talking about the relationship of vaccination to viral transmission. That's not, what you were talking about there was not based on your research or your expertise. You were repeating what you're reading from other scientific sources, is that correct?

A And from the fact that I've been carefully examining FDA labels and indications for over three decades and I know what -- if there's something that's indicated there, I know what that means. If there's something that's not indicated there, I know what that means and the FDA has not indicated that these vaccines reduce transmission of the virus.

Q But your role as -- your expertise, your long history in public health economics, that doesn't teach you about identifying viral pathways and other kind of clinical diagnosis of individual patients with regard to their

presentation of diseases, is that correct?

A That's correct.

Q So, you're making your conclusions, not based on individual cases but on what you read from the data more broadly based on what doctors report, based on what labs report, that sort of thing. Is that right?

A And also the FDA itself.

Q Okay and finally, the colloquy that you had with Mr. Cintron about the testing and the numbers of cycles that potentially have false positives from cycling too many times, if there are errors of that sort in Puerto Rico, that means that Puerto Rico's case reporting is, even though it's already low with respect to U.S. jurisdictions, in reality it might be lower still. Is that right?

A Yes.

Q Regardless -- this is my final question. Regardless of any public benefit from vaccines, is there a point of having, is there any point of having a mandate for vaccines given Puerto Rico's high vaccination rate and low level of viral spread, hospitalization and death?

A No, for all the reasons I've said in my testimony.

MR. SHAPIRO: Nothing further, Your Honor.

THE MAGISTRATE: Thank you, Dr. Hay for your time and your testimony. You're now excused.

THE WITNESS: Thank you, Your Honor.

(Witness excused)

MR. BAUERMEISTER: Your Honor, a housekeeping matter, I said I'm shifting some of the witnesses' testimony. I was wondering what time does Your Honor expect to end the Court session today?

THE MAGISTRATE: Well, although ordinarily I would run from 9:00 to 5:00, in all candor, because of the number of witnesses and because I have already given a heads up to the attorneys that next week I'll be handling on call emergency duty matters here in the courthouse, I might push it a little bit after five. Okay.

So, but certainly we're not going to be here after 6:00 p.m. That I can assure you of.

MR. BAUERMEISTER: We have one of our witnesses, Your Honor, lives in California. That's a four hour difference which, of course, it makes it a little hard for us to coordinate in terms of the Court's schedule for Puerto Rico time.

THE MAGISTRATE: Well, let me put it to you this way as politely as I can. Whatever inconvenience may cause to your witness in California, I'm sure it's much less than having to force him or her to get on a plane and get over to Puerto Rico.

MR. BAUERMEISTER: Yes, I agree, Your Honor.

THE MAGISTRATE: So, either your witness wakes up

early in the morning or we have to hold court at 3:00 a.m. in the morning and guess which one is my decision.

MR. BAUERMEISTER: Well, Your Honor, I guess what I was bringing -- he would be available today and again at 4:30. We have another witness before him.

THE MAGISTRATE: Fine, fine. I mean, you decide how you call your witnesses. I'm sure that you probably have a better idea than I do more or less of how long do you think those witnesses' testimony is going to be.

So, let's get on with your next witness. Who do you want to call first or second or third, that's really, that's your decision. All I can tell you is I don't mind going a little bit past five. I don't have any problem about that but I can assure this.

We're not going to go past 6:00 p.m., Puerto Rico time. That I can assure you.

MR. BAUERMEISTER: Perfect, Your Honor. Thank you. That will be enough for me to coordinate. Our next witness will be Dr. Andy Boston and if Your Honor could give us a two minute break so I can confer with Attorney Davila.

THE MAGISTRATE: Is this by video conference or is this in person?

MR. BAUERMEISTER: Yes, Your Honor.

THE MAGISTRATE: By video conference?

MR. BAUERMEISTER: Yes, Your Honor.

THE MAGISTRATE: Okay. I'm not sure then I follow you. Why is it that you need to exit the courtroom? I mean, if he's available by video conference.

MR. BAUERMEISTER: No, no, to get Attorney Davila; that he's in the Attorney's lounge and tell him to come here and he's not answering my text.

THE MAGISTRATE: Okay, well, go ahead and do that but I'm going to wait for you right here. I'm not even stepping out of the bench. We need to get the ball rolling. We still have a long list of witnesses here.

All right, you may go. I'm going to wait, I'm going to wait right here.

MR. BAUERMEISTER: Do you know if Dr. Boston is connected?

THE CLERK: Not yet, Counsel.

THE MAGISTRATE: Mr. Davila.

MR. DAVILA: Yes, Judge.

THE MAGISTRATE: You're ready?

MR. DAVILA: Almost. Could I borrow a stapler real quick?

THE MAGISTRATE: You can ask Mr. Rodriguez for those matters. You can call your next witness. Is your next witness available? I was told that your next witness is available by video conference, so.

MR. DAVILA: Yes, he's supposed to be logging in

shortly. I mean, he's already told me that he received the link.

THE MAGISTRATE: Okay. Well, Counsel, again I'm going to stay here in the courtroom but I'm just going to stretch my back for a moment. You don't need to stand up. I'm just simply stretching my back while we get the next witness called.

If you have any additional Ids, please pre-mark them so we don't waste time and show them to opposing counsel. What's the name of your next witness?

MR. DAVILA: Dr. Andrew Boston.

THE MAGISTRATE: Dr. Andrew Boston. All right.

THE CLERK: I had a guest in my Zoom page but the guest disconnected.

THE MAGISTRATE: Well, I'm assuming that he was given the link, right, to connect?

THE CLERK: Yes, Your Honor. It said Zoom account named Andy.

MR. DAVILA: Yes, that's him, Andy.

THE CLERK: I assume this is the witness. He's no longer in the waiting room.

MR. BAUERMEISTER: Your Honor, since we're on housekeeping matters, I know Your Honor mentioned that we have a lot of witnesses. Just to inform that we're not -- there won't be that many witnesses.

THE MAGISTRATE: I believe you had announced more or less but feel free to correct me if I'm wrong. I believe you had announced about eight.

MR. BAUERMEISTER: Right and the factual witnesses or total. There will be three less factual witnesses.

THE MAGISTRATE: Okay. Well, again, it is not my wish to rush you unnecessarily. I want to give both sides a reasonable opportunity to present their case.

So, I'm just simply, frankly the reason why I'm trying to be as efficient as possible with the use of time is, more than anything else, out of courtesy to you, your opposing counsel and the witnesses because next week I'm going to be dealing with emergencies on call and as I said, that's going to cause interruptions and delays for reasons beyond my control.

So, I'm trying to maximize as much as we can the presentation of the evidence this week and if we can get started with the defense presentation of the evidence this week, all the better but having said that, I don't want to unnecessarily rush you.

I want to be reasonable in giving both sides a fair opportunity to present your evidence.

MR. BAUERMEISTER: Thank you, Your Honor.

THE CLERK: Counsel, your witness is connected but

he's connected on tomorrow's VTC link. He needs to connect to the VTC link of today, that we sent for today. I know that I sent you earlier --

MR. DAVILA: I know but I sent you a correct one. Sorry, I just got it now. Okay, I'm sorry.

THE CLERK: I sent a new one a couple of minutes ago.

MR. DAVILA: But that's not the correct one.

THE MAGISTRATE: Every day has a different link. Even though it's the same case, same proceedings but every Zoom link is going to change day by day.

MR. DAVILA: I sent it to him and to you the correct one. I don't know what else to do.

MR. DAVILA: To him to?

(Off the record)

MS. DIAZ: Your Honor.

THE MAGISTRATE: Yes.

MS. DIAZ: I made arrangements for an interpreter for Monday but on Friday, my secretary to see if there's any interpreter available for this Thursday just in case.

THE MAGISTRATE: Yes. Well, again my -- I would suggest that you at some point confer with opposing counsel because they can perhaps give you an idea more or less of the number of witnesses that they'll be calling and how long they think it's going to take but let me put it to you this

way. If we can get started with the defense presentation of the evidence this Thursday, I'll get started with it because we're going to -- I think it's going to benefit all sides if we maximize the time that we have available this week.

MS. DIAZ: Yes, Your Honor, I understand. I asked it for Monday because I was expecting the entire list of witnesses but Counsel Davila gave me an order which just changed.

THE MAGISTRATE: Okay.

MS. DIAZ: So, I'm asking my secretary to find me an interpreter for Thursday.

THE MAGISTRATE: Great, great.

THE CLERK: I have their witness, Your Honor.

THE MAGISTRATE: It looks like the witness has connected. All right, who's going to be conducting the direct examination, Mr. Davila?

MR. DAVILA: Yes.

THE MAGISTRATE: All right, Mr. Davila. Who are you calling now formally on the stand?

MR. DAVILA: The plaintiffs call Dr. Andrew Boston as a witness.

THE MAGISTRATE: All right. Let's go ahead and place the witness under oath.

(The witness was duly sworn)

THE MAGISTRATE: Dr. Boston, could you please state

your full name for the record.

THE WITNESS: Dr. Andrew Boston.

THE MAGISTRATE: Your witness, Mr. Davila for direct examination.

Whereupon,

DR. ANDREW BOSTON

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

DIRECT EXAMINATION

BY MR. DAVILA:

Q Thank you, Mr. Boston. Can you state your name for the record, please.

A Andrew Boston.

Q Dr. Boston, you were asked here to declare as an expert, as an Epidemiologist. Can you please let the Court know what are your qualifications, education and experience as an Epidemiologist.

A Yes, I'm a trained Internist, Board Certified in Internal Medicine and I also have a Master's from Barry University in Epidemiology. My background is in clinical trials and epidemiologic studies for the past thirty years.

Q Thank you.

MR. DAVILA: The plaintiffs move to qualify Mr. Boston as an expert in Epidemiology.

THE MAGISTRATE: Any objection?

MS. DIAZ: No, Your Honor.

THE MAGISTRATE: Admitted as an expert in Epidemiology.

BY MR. DAVILA:

Q Mr. Boston, given your experience as an Epidemiologist, can you let us know how do you properly measure the efficacy of a vaccine?

A Yes, like any other, like any other therapeutic, whether it's a drug or vaccine or so called nutraceutical, it has to be evaluated within randomized placebo controlled trials to properly measure the efficacy and it should include, although this is problematic, it should include not only short term prevention in the case of the vaccine of infections but whether or not within the randomized trial design you can demonstrate prevention of hospitalizations and deaths.

Q What outcome should be measured in the randomized placebo control trials?

A So, if we're talking specifically about Covid vaccines, for example, it's important to look at the short term prevention of infections but it's also important to look at hospitalizations that are specific to Covid and deaths that are specific to Covid and in addition, in terms of monitoring for potential adverse effects, all course of mortality would be important to evaluate as well.

Q Okay. Do you know of any randomized control trial measuring the efficacy of the vaccine?

A Oh, yes, there are randomized control trials which were short term and looked at the prevention of infections, particularly with the MRA vaccines but with other vaccine platforms as well. The annual virus specter vaccines and they did indeed show that compared to placebo injection, over the short term, so typically two to three months, there was a significant reduction in infections and symptomatic infections.

What's glaringly absent from all these trials are comparable data showing that the vaccines prevented, again within the randomized control trial design, you have other forms of evidence, but within the randomized control trial design, what's glaringly absent are any data on whether or not the vaccines prevented hospitalizations and deaths.

In fact, there was extended follow-up of the two largest trials, the Pfizer MRA vacs trial and the Moderna MRA vacs trial. In those, the six month follow-up data did monitor for all cause mortality and when you pool the data from those two studies, so you're now dealing with close to seventy thousand subjects, there was actually no difference between the placebo group and the vaccinated group in terms of all cause mortality.

So, a good inference from that is that there was no excess of all cause mortality, so within the confines of these two trials, it doesn't look like there was an untoward number of adverse events that resulted in death.

The flip side to that, however, is that there was no improvement in mortality despite the fact that both trials were conducted, you know, in the middle of a pandemic. So, that it leaves unaddressed whether or not within a randomized control trial design and again, the most, the gold standard design, whether the vaccines actually prevent death. That's all we can conclude.

MR. DAVILA: Should I continue or --

THE MAGISTRATE: You may continue. At least I can see the witness well and I can hear him well.

BY MR. DAVILA:

Q Do you think that unvaccinated people spread Covid 19 more than vaccinated people?

A There may be a period where that's true. In other words, if you're comparing in time, peak vaccinated people to comparable individuals who are matched and unvaccinated and I think the randomized trials showed us that. That for a short period of time at peak vaccination, that may be true.

However, in the real world, you know, we're now confronted with the so called, the parameter with so called

break through infections which accelerates after about two months and really increases dramatically at about six months and beyond.

So, again, it depends how you're defining, you know, the protection but there's no question that within the randomized control trials for a short period of time, it looked as if the vaccinated people certainly got less infections.

There's less known even in those trials about their ability to spread but you can infer that if the less likely to get infected, that they'd be less likely to spread, but again, we have to realize the limitations of this data. They're short term data.

Q Are you aware of a prison study where CDC funded a study on -- I'm sorry about that. So, do you know of -- when you talk of viral loads, do you know any study that says that vaccinated and unvaccinated individuals with Covid have the same viral loads?

A I believe you are alluding to a study that the CDC or sponsored through the CDC in the prison system which suggested that the viral loads certainly is measured by a surrogate called the cycle threshold were comparable and seemed to decay at roughly the same rate as people convalesce, as people got better in the vaccinated and unvaccinated persons.

I'm not -- I don't believe that that study actually looked at what's called secondary, you know, transmission during the course of the study but the inference was that, well, if the viral loads are peaking about the same level and then they decay at about the same level, that there's probably not a big difference between infections spread by the vaccinated versus the unvaccinated once both groups are infected.

Q When you mention decay, what do you mean by that?

A Decay in terms of the robustness of the immunity that the vaccine is providing or conversely in the case of a natural infection. It tends to wane over time particularly when the wane is fairly acutely with the vaccines, they confer a fairly narrow spectrum of immunity.

Q Did the study mention anything about how long does a person that's vaccinated versus non-vaccinated has Covid?

A Are you talking about the prison study?

Q Or may transmit Covid. Yeah, about that study.

A I don't think that -- if I recall properly, I don't believe that that study addressed that specific issue. It really just looked at how the viral loads were comparable at peak infection and seemed to decline at about the same rate.

Q Okay. I just wanted to clarify that. All right. How does natural immunity compare to vaccination?

A So, we have some direct comparison data. Probably still -- it's a few months old now but the best data we have come out of Israel. They looked -- they were really covering the Delta period, the period where the Delta variant became the predominant variant in Israel and these data were originally published at the end of August and the reason I think this is a very important study is it came from a very rich health maintenance organization data base in Israel. I believe it was Maccabi and they did a lot of matching on the vaccination status, the prior infection status and they were able to adjust for very important comorbidities which could contribute to the outcomes, particularly infection hospitalization.

So, that kind of made it unique and with matching the previously infected versus the vaccinated individuals for the time of the first event, which means when they were first infected fully vaccinated. So, matching for that time period, there was a thirteen fold increase risk for asymptomatic infection, just testing positive again in or testing positive period in those who were vaccinated versus those who were not vaccinated but had a prior infection and there was a twenty seven fold increase risk for clinical or symptomatic infection and an eight fold increase risk for hospitalization.

So, the point was that with this very careful matching,

it looked like a prior infection or so-called natural immunity conferred a significant reduced risk for asymptomatic infection, clinical or symptomatic infection and hospitalization and these were very significant differences again. Thirteen times reduced for asymptomatic infection, twenty seven times reduced for clinical or symptomatic infection and eight times reduced for hospitalization.

They did a less matched analysis, so in other words the person could have been infected going all the way back to say one of the earlier waves in Israel versus vaccinated individuals who obviously were vaccinated in a later period without matching for this time of first infection, first vaccination and even there, while the benefit conferred by natural immunity was reduced, they were still one sixth as likely to have asymptomatic infection, one seventh as likely to have a clinical or symptomatic infection and about six and a half times less likely to have hospitalization.

So, I think these are very significant data. There's more recent data from healthcare workers in the UK just looking at recent infection which doesn't have the same sort of, you know, careful matching but which basically says that having a previous infection and not being vaccinated, if you're a healthcare worker, you know, healthcare workers are constantly exposed.

There was really no benefit to vaccinating those people that they could demonstrate and certainly compared to vaccinated but infection naive people, they did at least as well.

Q Thank you, Dr. Boston. You just mentioned started from the UK healthcare workers. I'm going to show you a document on the screen. Let me know if you can see it.

THE MAGISTRATE: Which Id is this?

MR. DAVILA: That would be 17 Id, right?

THE MAGISTRATE: Mr. Rodriguez.

THE CLERK: Yeah, it should be. The next exhibit is number 17.

THE MAGISTRATE: Well, it's going to be an Id. It hasn't been admitted yet. Okay, so, Id 17.

BY MR. DAVILA:

Q Okay, is that the name of the study that you mentioned?

A Yes, this is in the UK healthcare workers. Yes, it's a recently released pre-print from something called the Siren Prospective Cohort.

Q All right. I'm going to show you another page.

THE MAGISTRATE: What's this, page two of Id 17?

MR. DAVILA: Your Honor, it's the last page. I didn't include the whole study. It's only the results or part of the results, the relevance and the abstract of the study but what we're interested is in the results.

THE MAGISTRATE: Okay, so all right, so this is not really -- Id 17 is not the entire study, just some selected pages.

MR. DAVILA: Selected pages. It's the title, the abstract and the results.

THE WITNESS: Okay, so, I'm seeing now table 3. Okay, so what I was referring to was you always have to have a reference group or (Inaudible) group and if you go down and it says unvaccinated and then you see naive, that's the group that it's being compared to for all the subsequent comparisons.

So, those people were not vaccinated. Eventually the entire cohort pretty much gets vaccinated but over the various segments of follow-up, time follow-up, initially you have this group that you can refer to as unvaccinated with no history of prior infection and that's the reference group for all these comparisons and what you see is that if you look at people who were like them at the outset except had a history of prior infection, there is significant reductions in their tendency to contract new infections, you know, absent any vaccination.

Then they break down the data according to whether the healthcare workers were vaccinated with a single dose, with a full dose regimen and you can see that in the vaccinated who have no history of prior infection, they're clearly not

doing any better than all the various groups of the unvaccinated who have a history of prior infection which dates back longer and longer in time.

So, the point is that, I guess the overall take home message is that regardless of what we're looking at, whether it's, you know, a cohort data like this, whether it's data coming in from a dashboard in my state of Rhode Island or in your territory of Puerto Rico, if we simply compare, you know, the unvaccinated, whether or not you pooled them with a partially vaccinated to the fully vaccinated, we're missing a really critical piece of evidence, which is what is the impact in all those groups, not just the unvaccinated, not just the vaccinated, in all those groups, the unvaccinated, the partially vaccinated, the fully vaccinated.

What is the impact in each of those groups of having a prior infection? You're really in the dark if you're simply, you know, making these lump comparisons between vaccinated and unvaccinated in the absence of knowing whether or not there was a history of prior infection in people also referring to that as natural immunity. That's really the critical point here.

I've seen this firsthand in my own state of Rhode Island where I've been getting updates through the Department of Health of the -- during the Delta wave peaks

up here and the updates have been completed from July to October and what I can tell you is that in those four months, we had a total of 1,470 hospitalizations.

Now they don't break them down. They're lumped together with or from Covid. Similarly the deaths are with or from Covid. In other words, it's just a positive test. It doesn't necessarily mean that the admission was truly for Covid.

It could be an incidental positive but regardless, those are the data that we have and if you look, if you look at the groups and look at the fully vaccinated versus the not fully vaccinated, by the way, that's the way they partition things. They only separate -- if you're partially vaccinated, you're considered unvaccinated. You were not fully vaccinated.

If you look at the outcomes, particularly for hospitalizations and deaths, you can see that it's almost irrelevant if the person was vaccinated or not relative to the information you gleaned from knowing whether or not they had a prior infection.

So, just to quickly summarize, there is one seventh the rate of hospitalization and one tenth the rate of death. Comparing those with natural immunity to Covid 19, regardless of vaccination status to those who are fully vaccinated.

Q Dr. Boston, just to make sure. You're referencing the exhibit, the Id, you're not, right, right now?
A No, no, no. I'm talking specifically about -- I'm not referring to this study. I was just sort of using it as a segway to how important it is to understand regardless of whether you're looking at vaccinated or unvaccinated people, whether or not they have a history of prior infection or natural immunity, giving you example from raw data from my own state.
Q Okay, yeah. I just wanted to ask the Court to admit the exhibit before you continue your testimony.
MS. DIAZ: I have an objection, Your Honor. This is not the entire document and based on the totality of the evidence, the Court should be able and we should be able to examine the entire document if it would be admitted as an exhibit.
MR. DAVILA: I have the entire study. I could present it as well.
THE MAGISTRATE: Well, then if you have the entire study, then why don't you mark as Id 17 the entire study and then we'll have that one admitted into evidence. Okay. Please show it to opposing counsel and then what we'll do is rather than having a document that has only a few pages of the study, let's have the one that has the complete study marked as Exhibit 17. Once that's done, admitted as Exhibit

17, the one that contains the whole study.

(Plaintiff's Exhibit 17 was admitted into evidence)

THE MAGISTRATE: So, in a nutshell, Counsel Diaz, your objection is sustained but now that the full study has been provided and is being replaced, has replaced what was originally submitted as Id 17 and admitted as Exhibit 17.

BY MR. DAVILA:

Q So, Dr. Boston, you were mentioning about the situation in Rhode Island right now. I think, was it through infections as well? If you can mention your knowledge about that.

A Yes, yes. So I was reviewing data that ended at the end of October and the focus was, you know, just for emphasis was on the clinical outcome, the relevant clinical outcomes, the hospitalizations and the deaths. Again the caveat being that we don't get it broken out unfortunately whether these are hospitalizations or deaths with or from Covid. They're just lumped together.

You know, we can assume that the majority of them are from Covid but we don't have, we don't have the actual breakdown but what my point was that it looked like, again if you're simply trying to compare the vaccinated and the unvaccinated or the fully vaccinated and the partially vaccinated plus the unvaccinated pool, you're missing a lot

of information, critical information without knowing whether they had a history of prior infection and I could tell you that the most recent data from the Rhode Island Department of Health website, which you can extract right off the website, covered the period of the week ending November 27 and during that week, forty one percent of the infections were coming from the fully vaccinated pool in Rhode Island.

So, again it's -- and that information we don't have any update yet on how do you break that down further by whether or not there was a history of prior infection. But judging from what happened in the four months preceding, you would say that a very small percentage of those infections would be occurring amongst people with a history of prior infection regardless of vaccination status.

So, that was just the points -- those were just the points I wanted to make.

Q Dr. Boston, I'm going to show you another Id.

THE MAGISTRATE: Id 18?

MR. DAVILA: Yes.

BY MR. DAVILA:

Q Are you able to read that?

A It looks like. Is this input, yes, okay, so I know this website. Okay, so that's reassuring. Yes, this is the Covid Austin website, which is for background it's actually a very useful site. It was supported by the CDC but the

data or actually inputted and analyzed by Epidemiologists from Harvard, Yale and Stanford, so, you know, respectable institutions and they try and give estimates to various infection related indices and this one from what I can gather is the percent ever infected. Now, I'm assuming, I can't see it. Is this for Puerto Rico?

Q Well, you can see here, up here it says PR, so, yes.

A Okay. That would be Puerto Rico.

THE MAGISTRATE: Maybe you can zoom in if you'd like to try to make it easier on the witness so that he can see -- I believe that -- Doctor, I believe that counsel is trying to direct you to the upper left-hand corner, there is like --

THE WITNESS: Yes, I see it. It says \PR, so that's Puerto Rico. Okay.

BY MR. DAVILA:

Q It's really verifiable that it says Puerto Rico. The thing is that it was a print screening and I'm having issues with the -- okay, so look at the percentages that are in the left side and now please look at the line --

A Right, so it looks about a third or thirty percent based upon their estimate in Puerto Rico are assumed to have been infected at one point during the pandemic. So, that's a sizeable number.

Q Okay. Does this number, does the amount of testing in

a given jurisdiction could affect this number?

A Oh, certainly, yes. So, in other words, my state is obsessive compulsive about testing. So, I can tell you. I've become very familiar with the data from my state. On the same scale and you can, if you wanted to, you can do it in real time and just go into the website.

The last I checked I believe that about sixty three or sixty four percent of Rhode Islanders are believed to have contracted Covid at one point and there are, you know, states like Florida is even higher, especially after the big Delta wave they had over the summer.

So, yeah, if the territory of Puerto Rico is less compulsive about testing and I'm not saying that they should be more compulsive about testing, then, yeah, you can significantly affect your ability to detect infections and then add them into this matrix and come out with a result.

MR. CARDONA: Before we proceed, Your Honor, plaintiffs move to admit this as Exhibit 18.

THE MAGISTRATE: Any objection?

MS. DIAZ: Your Honor, other than the upper left part, maybe "que se puede estimar" that is from Puerto Rico.

THE MAGISTRATE: I'm sorry, I need you. You're on the record. I need you to address the Court in English.

MS. DIAZ: Maybe tries to suggest that this is from Puerto Rico. There's no indication that the data used here

comes actually from Puerto Rico.

THE MAGISTRATE: Well, this sounds to me like that's fair grounds for cross examination and you may address the witness as to that particular matter.

MS. DIAZ: Yes.

THE MAGISTRATE: Admitted, Exhibit 18.

(Plaintiff's Exhibit 18 was admitted into evidence.)

MR. DAVILA: Regarding that particular matter, Your Honor, it's easily verifiable if you go to the website.

THE MAGISTRATE: Well, again but you're not testifying, the doctor is. So, next question. Having said that, however, Counsel Diaz, fair grounds for you to address the witness with questions regarding that particular concern.

BY MR. DAVILA:

Q Now we're going to show you another exhibit. It's a print screen from the CDC website which is going to show you here. Can you read that on top?

A It looks like it's saying Cumulative tests performed per one hundred thousand.

Q Yes, by state, territory, right?

A Right. I see Rhode Island. Yeah, well, not surprised that my state is at the top.

Q Yes, it is at the top. So, you were right about that.

Now, let's go to the bottom. So, would it be correct from the states that are reporting or territories, Puerto Rico is the last one?

A Right.

Q Is that what it says there?

A That's what I can see.

MR. DAVILA: Your Honor, we move to Admit this as Exhibit 19.

THE MAGISTRATE: Any objection?

MS. DIAZ: No objection.

THE MAGISTRATE: Admitted, Exhibit 19.

(Plaintiff's Exhibit 19 was admitted into evidence)

BY MR. DAVILA:

Q So, Dr. Boston, considering the discrepancy or not a discrepancy, the difference in testing between Rhode Island and Puerto Rico, which are first and last, how do you think that would affect the estimate in the previous exhibit with the Covid estimate for Puerto Rico?

A I think it would raise the prevalence of a prior infection in Puerto Rico potentially by a lot. Now, my state is very densely populated but there are small rural areas.

I assume, you know, Puerto Rico also has areas of dense population and rural areas but I think it is, it is

largely going to be -- not largely, it is going to be a significant function of testing, particularly when you see, you know, a striking discrepancy like that between the most heavily tested state per capita and Puerto Rico being basically at the bottom list of the U.S. states and territories.

Q So, but do you think that that could affect the estimate of percent of people infected, meaning could that maybe if there would be more tests, perhaps the Covid estimate would show higher?

A Oh, absolutely, absolutely, yeah.

Q That would mean that more people have natural immunity.

A Right, so I would take the roughly thirty percent, roughly one third as kind of a low ball estimate for Puerto Rico. It could be considerably higher. It could be forty or fifty percent easily.

Q Okay, when assessing quantitatively the risk benefit reachable for any therapeutic intervention, what numerical standards are employed?

A So, we have these concepts, the number needed to treat and the number needed to harm, to provide quantitatively estimates and, so, you really can take their ratio to estimate benefit risks or risk benefit ratios.

So, the number needed to treat is telling you how many people have to be treated or we could call it a number

needed to vaccinate if you wanted to in terms of vaccines. The number needed to vaccinate to prevent one case, in this case a Covid or if you had the data to look at how many you would need to vaccinate to prevent one hospitalization due to Covid but, you know, typically, you know, certainly from the randomized trial, we don't have the latter information.

We don't have the hospitalization information. We don't have the death information for Covid but we do have the number, we can calculate the number needed to treat in terms of preventing infections and then the number needed to harm would be, you know, how many adverse reactions, the serious ones that you get when you vaccinate a certain number of people and the only way these values have any meaning is when you have for either, for harmful benefit, is when you have some sort of a control group.

So, you can't just, you know, you have to be able to say how many people were treated and you prevented an infection versus a control group, how many were vaccinated and you had an adverse event with a comparison control group and you look at the absolute differences and that's how you calculate these things.

You can't calculate any of these things in the absence of having a control group but they're based on absolute differences between the groups and so when you go back to say to the Israeli data, to prevent an asymptomatic

infection relative to, compared to the vaccinated and the previously infected, you'd need -- they did have a sub-group where they were able to look at people who had a previous infection and then were vaccinated or not.

It was in their data set. You could look at that and it turned out that in that group, if there's any benefit at all, it's really minute but if there's any benefit at all, you would need to vaccinate 833 people to prevent one asymptomatic infection. That's because the absolute risk reduction was so low.

They didn't have any data on hospitalization. Okay, so you would have to -- if everyone had a history of a prior infection, you'd have to vaccinate 883 to prevent one asymptomatic infection. It's also of dubious value.

If you look at the data on healthcare workers from the United Kingdom, it's an earlier study than the one that we discussed. They were looking here specifically at healthcare workers who were vaccinated, who had a history of prior infection versus those who did not and it turned out that there was an increase risk for having moderate to severe symptoms if you had a history of prior infection and you were vaccinated.

So, if you look at the number needed to harm there in terms of vaccination, it was about eleven. So, again it's kind of mixing and matching but if you want to look at a

number needed to treat and compare it to a number needed to harm and you compare the two studies, the Israeli study and a prior study of UK healthcare workers, it would basically just be, you know, 833 divided by eleven.

So, what that's telling you is that to prevent one asymptomatic infection, you might cause eighty moderate to severe symptoms, including fever, fatigue, myalgia, arthralgia and lymphadenopathy.

The caveat to this I would say is that, I mean it's important, that these are important data to give us perspective but they're coming from basically healthy populations. This is really HMO cohort. This UK healthcare worker cohort but it does emphasize a critical point where you have a low risk overall population.

The number needed to treat over the number needed to harm ratio and the benefit risk ratio becomes problematic, you know, again basically in these healthy cohorts you're looking at causing eighty, you know, moderate to severe reactions as a cost of preventing one asymptomatic infection.

Now this whole calculus might be entirely different if you simply were looking at, for example, a nursing home population where, yeah, they may have more adverse reactions to the vaccine given their burden of comorbidity and just their age.

However, the risk of dying from Covid is so much higher than the general healthy population that you could have an entirely different risk benefit ratio but I think, you know, the lack of this kind of data being applied to real world situations is a glaring deficiency of what we have before us.

In other words, we're applying these broad strategies without stratifying, without narrowing down to the particular populations where the risk is highest and, therefore, the risk of Covid, serious Covid is highest and, therefore, any adverse affects of the vaccine would be likely to be outweighed.

So, I just think there's a very useful way in general to look at rational strategies for applying the vaccine.

THE MAGISTRATE: So, Doctor, would it be a rational strategy then to impose a mandate only on selected high risk portions of the population?

THE WITNESS: I would put it to you this way, Your Honor. I have a mom who's 95 years old now and, you know, we've been managing with her outside of a nursing home but if we felt that it was just no longer tenable and she had to go into a nursing home in Florida where she lives and that nursing home said, "you know, we'd love to house your mom but she's not getting in here without a vaccination." To me, that would be, you know, an understandable policy along

the lines of what your question is getting at, at least the way I understand your question.

THE MAGISTRATE: So, for example, going along the lines of the example you have given, then would it be rational to have a government mandate to require vaccination on nursing homes?

THE WITNESS: That, again, I can only answer the question in terms of whether it's reasonable for a nursing home given the high risk of that population and the potential benefits of the vaccine for the nursing home to say that that's their policy.

It's a whole separate question which is, you know, beyond me as a non-lawyer, non-politician to say that the state should require that. In other words, it might be equally effective to leave that up to the nursing home. I'm just trying to be honest. I just can't answer that.

I think it's perfectly reasonable for a nursing home to have that policy, whether it needs to be mandated by the state is a whole separate, you know, legal, ethical question that I don't really feel, you know, capable of addressing and I can see different points of view.

THE MAGISTRATE: Next question, Counsel.

BY MR. DAVILA:

Q So, just for our final questions, just assume these stats are, the ones that I'm going to tell you are correct.

When the population over 12 years old, more than eighty percent has been vaccinated, if admissions to hospital are three in the, around three in seven day moving average and there's ample and there's more available beds in hospitals or the bed availability in hospitals has remained around forty percent throughout the whole pandemic, you think the risk benefit analysis for Puerto Rico would justify a mandate?

A A vaccine mandate for the remaining small percentage of people who are not vaccinated, it doesn't sound like it but again I'd also like to know what percentage of the population who aren't vaccinated have a history of prior infection.

You know, my philosophical vent is not to mandate if at all possible but I also think that you're shooting in the dark when you simply use these crude, you know, vaccinated, unvaccinated metrics.

I really would like to know what the actual immune status of the person is, you know, and you know to make that -- to even begin to address that question.

Q I agree completely with you that I believe the Puerto Rico Health Department should make that information available.

MS. DIAZ: Objection, Your Honor. Objection, he's not the witness.

THE MAGISTRATE: Counsel.

MR. DAVILA: I apologize.

THE MAGISTRATE: Sustained. I believe you know that that sort of statement is improper. You're here to ask questions.

MR. DAVILA: I apologize, Your Honor. I'm trying to show the witness a document that has already been admitted.

THE MAGISTRATE: Fine, if you need to retrieve any of the exhibits, feel free to approach the lower bench and retrieve any exhibits from the Courtroom Deputy Clerk. So you can use them. You may approach the lower bench so you can use whatever exhibits you need.

BY MR. DAVILA:

Q Dr. Boston, this is an exhibit that was admitted. It shows the Covid vaccination coverage by age group. Can you look at it, evaluate it and then answer the same question but taking into consideration this exhibit.

A Right, so it looks like there's very high vaccination coverage. Is this full vaccination, partial vaccination?

Q I believe it is full vaccination.

A Full vaccination, right, so it's very high coverage. I don't see what's going to be accomplished by pushing it any higher than this and again, certainly in the absence of knowing those who are unvaccinated who may have at least as

robust if not more robust immunity from natural infection.

MR. DAVILA: All right, nothing further, Your Honor. Thank you very much, Doctor.

THE MAGISTRATE: We're going to proceed now with the cross examination. Counsel Diaz, if you need any of the exhibits for your cross, feel free to approach the lower bench and retrieve any exhibits that you may need.

MR. DAVILA: Actually, Your Honor, may I ask one last question?

THE MAGISTRATE: Well, technically you concluded your examination but fine, go ahead and ask your question.

MR. DAVILA: I'm sorry, it's just hard to confer with brother counsel in this situation. Thank you.

BY MR. DAVILA:

Q One last question. Do you believe that we have reached herd immunity with the vaccination coverage that we just showed you?

THE MAGISTRATE: Who is we?

MR. DAVILA: Puerto Rico.

THE WITNESS: It's very hard. It's very hard to say because it's a subtle balance that could be upset, you know, by a new variant, by vaccine waning. I think in terms of what you're -- if I'm recalling correctly, your current metrics are in terms of hospitalizations and deaths, I think you're at a reasonable equilibrium.

It doesn't seem as if certainly the society is being overwhelmed but, you know, the idea of herd immunity on the basis of vaccine or vaccine plus natural immunity is evolving. You know, in the original definition of herd immunity prior to the mass vaccination year, going back to the 1920s, it was cause conditions were far worst then quite frankly in the face of a pandemic, particularly the more recent 1918 flu pandemic which was infinitely worst than Covid.

The metric for "achieving herd immunity" or the metrics, had to do with people not dying in the street and the hospitals limited as they were, not being overwhelmed and once you reach that point, you are considered to be, you know, at herd immunity.

So, it depends what your standard for herd immunity is but at least in terms of hospitals being overwhelmed and mass death, you could say you're at a reasonable equilibrium now.

MR. DAVILA: Thank you, Doctor.

THE MAGISTRATE: All right, Counsel Diaz, your witness for cross. As I said, if you need any of the exhibits feel free to approach the lower bench and retrieve any of the exhibits that you need.

CROSS EXAMINATION

BY MS. DIAZ:

Q Good afternoon, Dr. Boston.

THE MAGISTRATE: You may proceed.

MS. DIAZ: Attorney Idza Diaz Rivera for the record, Your Honor.

BY MS. DIAZ:

Q Good afternoon, Dr. Boston.

A Good afternoon.

Q Dr. Boston, you were testifying regarding natural immunity of those people who already have been infected with Covid 19. My question is, is it your testimony that people with natural immunity are better protected from Covid 19 than those who have immunity from the vaccine?

A Yes, clinically I think that's pretty well established now based on the data that we have coming out of Israel, coming out of Kuwait, coming out of UK. As I mentioned, I see some evidence of that here in Rhode Island.

Q For a longer period of time than the immunity obtained by the vaccine?

A Yes, it looks to be more enduring, more flexible, more robust and broader. In other words, and the rationale for that, apart from the clinical and epidemiologic data, the rationale for that is that the immune response is to the whole virus. It's not just to the spike protein which is what's being presented via vaccination.

So, it makes sense. It's also exactly what is the

experience with flu epidemics and pandemics and seasonal outbreaks, which is that the immunity conferred by gradually developing resistance to various flu strains through infection is more robust and more controlling in terms of preventing future masks, outbreaks and pandemics.

So, the outbreaks and pandemics then flu vaccination campaigns. So this is pretty well established in clinical infectious disease medicine.

Q That would be natural immunity by itself, correct?

A Oh, yeah.

Q Okay. Brother counsel showed you some documents from a study that had been admitted as Exhibit 17 and this would be the study posted pre-print in December 1, 2021.

A I don't see anything. Is there anything up there?

Q I'm going to show you.

A Okay, sorry, yes. I see that, so you're referring to the UK Healthcare workers study?

Q Can you see that Dr. Boston?

A Yes, this is the UK Healthcare workers study.

Q Okay, right here is Dr. Boston, I'm going to refer you to conclusions by this study that you make reference to, that Counsel gave you.

A Yeah.

Q It reads, "infection acquired immunity boosted with vaccination prevents high over a year after infection." So,

taken into consideration your testimony, this conclusion would be wrong.

A No.

Q No?

A No, absolutely not. What they're saying is that you --

Q Let me finish the question.

THE MAGISTRATE: Hold on.

THE WITNESS: You can attempt to boost someone who's been previously infected and you get a marginal increase in their immunity but the only outcome they look at is recurrent testing positive for mild symptomatic infection where in the Israeli study, they actually looked at hospitalization and in that study there was no advantage to being both infected and boosted. I'm sorry, not boosted but vaccinated and so, you know, it's impossible to tell without having a clinical outcome.

That's why I think just looking purely at infections is inadequate and that's also what I'm seeing in Rhode Island, is that the real difference between natural infection and vaccination has to do with clinical outcomes like infection and death.

Q So, to continue with my question. Your previous testimony as to natural immunity by itself being more effective than vaccination, according to this study is not correct.

A No, you're misinterpreting the study. They're talking about natural immunity in people who are also vaccinated. You're making the incorrect comparison. I'm sorry, Counsel, you're just making a mistake.

The comparison that I highlighted because I think it's more relevant than the subtle differences between vaccinating people who are previously infected or not. Again because the whole thing comes down to whether or not the person was previously infected.

If you go back to the table that was presented, you will see that if you look at vaccinated people who are infection naive. In other words infect people who were vaccinated but didn't have a previous infection, they're doing worst than the people who were unvaccinated but had a previous infection.

So, you're sort of cherry picking out a statement which I think frankly is of dubious relevance and missing the forest for the trees.

Q So the conclusion of this document is of dubious relevance. Is that your current testimony?

A No, you're just not representing it properly. I'm sorry to have to go over this. They're talking about -- I'm talking about comparing infection naive vaccinated people to unvaccinated people who have a history of prior infection. That's the comparison that I was talking about. They're

talking about the potential marginal added benefit of vaccinating people who have a prior infection. That's a different and very controversial kind of argument.

Q But doesn't natural immunity come from people with previous infection?

A Yes, but they're talking about vaccinating people with a previous infection and getting a marginal and thus far clinically irrelevant improvement in their outcome.

Q I'm showing you what has been admitted as Exhibit 18.

A So, these are the percent ever infected, yeah. So, this is a Covid estimate. This is the Puerto Rican data on their estimate of who is possibly having an infection over the course of the pandemic in Puerto Rico and I believe the estimate came to about thirty percent or so.

Q The fact is that you understand it's from Puerto Rico because counsel told you it's from Puerto Rico. You haven't seen this data before.

A Yeah, I actually have seen the data before. As a matter of fact, I sent them to counsel.

THE WITNESS: Your Honor, is there any ability -- I know we're Zoom but this could be resolved very quickly by going directly to the website in real time. Is that possible or impossible? I don't understand.

THE MAGISTRATE: Well, I don't know the answer to your question from a technical point of view but regardless,

we don't have live exhibits. You see, courts are behind the times when it gets to technology. So, we need fixed exhibits that could be printed website pages, that could be sometimes recorded videos, et cetera, but to go to a live web page, well, the problem with that from an evidentiary point of view and I don't want to bore you with legal technicalities.

THE WITNESS: No, no, that's fine.

THE MAGISTRATE: It's basically that although I am sure that you're trying to suggest this with the best of intentions, the problem is that web sites can be -- the information on a web page can change. You know, web page can be added, can be deleted, can be modified, can be amended, can be supplemented and by going to a live web page right now, then we would not have a fixed exhibit on the record.

So, I'm sure that you mean it with the best of intentions, Doctor, but unfortunately I don't think we can do that from an evidentiary point of view. Whether from a technical point of view that can be done in the courtroom, I don't know but from an evidentiary point of view it creates issues.

So, I'm going to respectfully decline but if you want to elaborate as to how is it that you know, what is your familiarity with the data, of course, you're free to do so.

THE WITNESS: Okay, I understand, Your Honor. It was more of curiosity because sometimes I hope you like to see the ability to resolve these issues in real time but I understand the limitations.

My familiarity with that web site is really more in reference to my own state, so they update every couple of days and I'm always interested in seeing how they're recalculating the number of people or the percentage of my population that's been infected and so for the purposes of today's, you know, testimony, just this morning I looked and saw what the data was for Puerto Rico and I referred counsel to the entry for Puerto Rico, so that's how I'm familiar with it.

THE MAGISTRATE: Okay. Very well. Thank you. Next question.

BY MS. DIAZ:

Q I'm showing you what has been marked as Exhibit 19. You testified regarding the amount of tests performed and Puerto Rico's location among those states, correct?

A Yes, if I -- yes.

Q The fact is that as we can see --

A Can you just read me the numbers for Rhode Island and Puerto Rico?

Q I have a different --

THE MAGISTRATE: Well, I'm not sure. Counsel, do

you want the witness to see Exhibit 19 or not?

MS. DIAZ: No, it's that I have a different document, what was given to me.

THE MAGISTRATE: Well, I don't know. I don't know about that. I don't know what was given to you. All I know is what has been marked as an exhibit.

MS. DIAZ: Which is which?

MR. DAVILA: I'm sorry, they look alike.

MS. DIAZ: We have the wrong exhibit marked.

THE MAGISTRATE: Well, I'm sorry but you cannot un ring a bell. You know, if the witness testified already with an exhibit, well, that's the exhibit. If you want to seek to admit a new exhibit into evidence, well, you can do that if you want to.

MS. DIAZ: Your Honor, I was going to cross examine him regarding a specific fact in the document but I see that what I was given is a different document. So, my question is moot, Your Honor.

THE MAGISTRATE: Okay. All right. Go ahead, Counsel.

MS. DIAZ: We have no further questions, Your Honor.

THE MAGISTRATE: Okay. All right. Do you want to redirect? Is that a yes or a no?

MR. DAVILA: Yes, yes. Can I confer with counsel

please?

THE MAGISTRATE: Briefly. Just give us a second, bear with us, Doctor. The attorneys for plaintiffs are conferring between themselves to see if they want to ask you any additional questions. If not, then you'll be excused. If yes, then you may have -- there might be a few additional questions for you.

So, do you want to redirect?

MR. DAVILA: Yes.

THE MAGISTRATE: Go ahead.

REDIRECT EXAMINATION

BY MR. DAVILA:

Q To questions of brother counsel or sister counsel, when she was showing you the study, you asked to be shown the table. I'm going to do that for you. Table 3. So, if I understand correctly, you were saying that the premise of sister counsel was incorrect because she was comparing natural immunity alone with vaccination plus natural immunity.

A Yes. That's exactly my point.

Q So, could you direct us in this table to the appropriate column and line where you want to make the comparison.

A Right, so again I just want to go over, you know, what I said earlier, is that if you go down, if you look at where

it says on the left, unvaccinated, then you go one row and indent it to the right below that, it says naive. That means people who are unvaccinated and don't, as far as the study investigators can gather, don't have a history of (Inaudible). That's the reference group, you go all the way to the right under the column that says "adjusted absolute protection against infection" and one line is the hazard ratio, whatever. Okay, that's the reference for everything in this table.

So, now if you go back under unvaccinated and look at, you know, regardless of whether it's prior infection three to nine months, nine to fifteen months, greater or equal to fifteen months, and then stay in each of those rows and go all the way across to the adjusted absolute protection against infection column again and you see what they're measuring here is called vaccine effectiveness. So, the higher the number the better.

All three of those numbers regardless --

Q Dr. Boston, you said vaccine effectiveness or --

A Right, it's adjusted absolute protection against infection. So, in this case it would be -- I'm sorry, it would be, it would be either vaccine effectiveness or natural immunity in this case effectiveness because it's unvaccinated people.

So, if we look -- we're still under unvaccinated. If

we look at that basically the eighty five percent, then the eighty five percent, then the seventy three percent, that's the effectiveness whether it's three to nine months, nine to fifteen months, greater or equal to fifteen months.

Now we go all the way down, for example, to the best case scenario for vaccinated persons, which is vaccinated dose two, but only naive. In other words, forget about prior infection in this group. They're vaccinated.

If you look at the naive and then go all the way across, it's sixty four percent effectiveness. So, that's not as effective in any instance as it is regardless of the time since infection in all the groups up under the unvaccinated, you know, designation.

That was my point. If you now go up to vaccinated dose one and look at the naive, and again, people who were never infected but vaccinated at least with one dose, that effectiveness is down to thirty five percent, which is much lower than the values directly above it for all those unvaccinated but previously infected, whether it's three to nine months, nine to fifteen months earlier, you know, greater.

That was my point and that, yes, there may be a marginal benefit by the time you get down to particularly the vaccinated dose two with a history of prior infection. But that's not the point, you know. The point is what's

driving the relationship as of, again, as of seeing in real time in my own state, is knowing whether or not there's a history of prior infection. That was my whole point.

THE MAGISTRATE: Doctor, using that same chart that you have just been shown, if we look at the last column to the right which is adjusted of absolute protection against infection and if we look at -- if we compare the unvaccinated where it says, "prior infection after fifteen months" and we compare it with vaccinated dose it says, "prior infection more than fifteen months", it looks like there is a difference of seventy three to ninety five percent.

My question to you is, do you consider that gap or that bridge to be statistically significant or not?

THE WITNESS: It could be for the isolated impact of infection. The reason I have a caveat with that is that it's a metric. Is it an important metric when we have data, I know it's not the population, so maybe you can't really compare them but at least we have the data from Israel where the vaccinated with a prior infection versus the unvaccinated with a prior infection, there was absolutely no difference in terms of hospitalizations, which is a real hard clinical measurement.

In other words, vaccinating people within the Maccabi HMO who had a prior infection did not reduce their risk of

hospitalization relative to people who remained unvaccinated but who had a history of prior infection. So, yes, there's a potential here but again, Your Honor, I would just say that you're really looking overwhelmingly at the impact of prior infection with perhaps a marginal benefit in terms of mild infection by adding a vaccine dose and, of course, you're not getting any information on the flip side, which is what cost does that come at, that small benefit, what cost does it come at.

It's not addressed even in the Israeli HMO study which was enormous or this healthcare workers study. They do not provide you with any data on what the downside to that strategy might be. You know, how many adverse events were accumulating while you got that benefit in reducing mild infection. They don't have that data at all.

THE MAGISTRATE: You're excused, doctor. Thank you for your time.

THE WITNESS: Thank you.

THE MAGISTRATE: All right, Counsel. I believe this might be a good moment to take a ten minute recess. So, is your next witness also available for video conference or in person?

MR. BAUERMEISTER: Well, Your Honor, about that. Our next witness was supposed to require a translator and because of the shifting on Friday, we're trying to see if we

can have our Friday witness who does not need an interpreter, to appear today but it seems --

THE MAGISTRATE: Well, but regardless, let me put it to you this way. Whether it's the one that you're trying to reshuffle from Friday to today or another one. If the one from Friday is not possible, well then call your next one, your next witness.

Again, we're trying to maximize, we're trying to maximize the time that we have this week. So, we'll take a ten minute recess. If we can have your witness -- if the one that was going to testify on Friday is your next witness, great. If not, if that witness cannot testify because of lack of interpreter issues, well then call another witness who doesn't need an interpreter. All right. A ten minute recess.

(A recess was taken at this time)

(Back on the record)

THE MAGISTRATE: Who's your next witness, Counsel?

MR. BAUERMEISTER: Your Honor, about that, Attorney Bauermeister, well, to put it simply, Your Honor, we were unable to -- we don't have another witness because of the reasons that I explained and our witness from Friday that we moved is still with a patient and it's not feasible, Your Honor.

THE MAGISTRATE: I think I'll have a word with the

attorneys in chambers. Meet me in Chambers 5.

(The hearing adjourned at 3:58 p.m.)

U.S. DISTRICT COURT)

DISTRICT OF PUERTO RICO)

I certify that this transcript consisting of 184 pages is a true and accurate transcription to the best of my ability of the proceedings in this case before the Honorable Marcos E. Lopez, on December 6, 2021.

S/Boabdil Vazquetelles

Court Reporter