LEUKEMIA & LYMPHOMA SOCIETY®

THE BLOODLINE WITH LLS

A PODCAST FOR PATIENTS AND CAREGIVERS

Episode: 'What Blood Cancer Patients Need to Know About COVID-19'

Description:

What does the effect of the virus have on blood cancer patients? What are hospitals doing to ensure cancer patients can still get treatment during this pandemic? What makes COVID-19 so different than other viruses? Has there been any progress made regarding treatment for COVID-19? Join us on this episode as Alicia and Lizette speak with Ruben A. Mesa, M.D., FACP who will answer these questions and more. Dr. Mesa is director of the Mays Cancer Center, home to the UT Health San Antonio MD Anderson Cancer Center, a National Cancer Institute-designated Cancer Center. Dr. Mesa has been principal investigator or co-principal investigator in more than 70 clinical trials for patients with myeloid disorders and played a lead role in various FDA approvals. Currently, he is a co-principal investigator of the NCI Program Project Grant Funded Myeloproliferative Neoplasms Research Consortium, where he co-leads the clinical trial consortium. Listen in as Dr. Mesa details the reality of COVID-19, answers questions that many patients and caregivers are asking, and shares why he is hopeful about the future of this pandemic.

On behalf of The Leukemia & Lymphoma Society, thank you to all healthcare workers on the frontlines of battling this virus. Doctors, nurses, researchers, technicians, transporters, EMTs, pharmacists, maintenance and cleaning staff, and everyone who supports patient care are rising to the occasion and caring for our most vulnerable populations.

We will get through this together. Stay safe.

Transcript:

Alicia: Welcome to *The Bloodline* with LLS. I'm Alicia.

Lizette: And I'm Lizette. Thanks so much for joining us on this episode.

Alicia: Today we will be speaking with Dr. Ruben A. Mesa. Dr. Mesa is the Director of the Mays Cancer Center, home to the UT Health San Antonio MD Anderson Cancer Center, a National Cancer Institute-designated cancer center.

Dr. Mesa is a professor and holds the Mays Family Foundation Distinguished University Presidential Chair. Dr. Mesa has been a principal investigator or co-principal investigator in more than 70 clinical trials for patients with myeloid disorders and plays a lead role in various FDA approvals. Welcome Dr. Mesa.

Ruben A. Mesa, MD: Hello, and thank you very much for having me today.

Alicia: We are very excited to have you. Before we jump into the topic, which is going to be about COVID-19, coronavirus, we wanted to just get an idea as to what brought you to the field of medicine, specifically hematology and oncology?

Dr. Mesa: Well, an interesting question. It actually goes back to, to a different crisis; but I was a nuclear engineer before I went into medicine and was a nuclear engineer during the time of the Chernobyl disaster which had a big impact on the nuclear industry as well as research in that area.

So, I had gotten interested in radiobiology. Radiobiology kind of led to an interest in science and medicine and cancer and then evolved further into hematology and medical oncology as a way to care for cancer patients and to explore new therapies. So, it evolved over things, but all started with Chernobyl.

Alicia: Wow. That's a very interesting beginning. We were talking to a doctor before, and he was saying that he went to school and had all the intention of being an astronaut and attended a doctor's visit with his grandmother; and he didn't like the way in which the doctor cared for his grandmother, and he felt like he would have more bedside manner; and that is what geared him towards being a myeloma specialist.

Dr. Mesa: Fantastic. You know, as I tell my kids that are kind of graduating from college, you know, you never know what sort of turns your path in life is going to, to take. You know, but always follow your heart, follow your passion, and careers may look very different 20 years from now than you might envision they are now. People are now focused on things that 20 years ago didn't exist. You know, people being, IT network managers. When I was in college, these things didn't exist. So always be open to opportunities as life presents them.

Alicia: Absolutely. That's great advice

Lizette: Exactly.

Alicia: So Dr. Mesa, today's topic is, as we mentioned, going to be COVID-19; and it's something that when you turn on the TV, turn on your radio, it is what you see everywhere and all of the time, of course, for good reason. From what we know about the virus so far, what is coronavirus, also known as COVID-19?

Dr. Mesa: I'm really excited to be able to be on the podcast discussing this with you today. I mean clearly this is an all-consuming issue of, of interest that affects us all, you know, and how much more frightening to be facing something like this than if you're an individual that's facing, you know, a cancer or a blood cancer. So, there are many questions that arise and, and happy to share a bit of what I've learned kind of during this process and how it relates to this group.

I wear a few hats as it relates to the COVID piece. So, on the one hand, I'm a member of the general public like everyone else. So, you know, my family's trying to figure out how to get toilet paper shipped from Amazon just like everybody else, trying to make our own handmade hand sanitizer, so we're all in those pieces together.

I care directly for a lot of patients with chronic leukemias and still both seeing them in the office, but the majority seen now by video visits. I already had one with a new patient this morning, as well as treating some but fewer patients on cancer clinical trials. And then, finally, I lead a cancer center so have been working to ensure that we can keep all of our cancer patients safe at the Mays Cancer Center here in San Antonio while trying to keep our faculty and staff safe as well as coordinating our university response and the city response.

So on the one hand, we're trying to care for all of our cancer patients in a safe way. But in parallel, we are part of the crucial backup medical system.

So we are in the start of the surge here in San Antonio in South Texas. But our, our institution and the leaders of our city and county and state have been working to really have a strong backup plan in case that were to become an overwhelming number of cases in the city, the state, or the region.

But let's talk a little bit about the virus, kind of your, question at hand. So, coronavirus is one of a family of viruses. You know, fundamentally, we can be infected typically by one of three types of things. One is bacteria. Those are our most common types of infections. Those are things like Strep and strep throat, urinary tract infections. Many of our infections come from bacteria.

Second, we can be infected with fungal infections that occur in nature from plants and other sorts of things. These are more rare. Third are viruses. A third way that we can be infected, and that includes the family of things that can infect us – everything from colds, to flus, to the coronavirus.

Now coronavirus, and this will be important as people hear more about testing and, and immunity against coronavirus. Coronavirus are a whole family of viruses, some of which include the common cold.

Now this is a very specific type of virus that is new, so this is a virus that changed. So, it had not been really a type of infection people were facing before it's believed likely December where, when it started in Wuhan, China. And this virus, why it has become such a big problem, compared to other things that we face, well one, since it's a new virus, really no one on Earth was immune to it before because their immune systems had not seen it before, no one had been infected before, no one had fought it off. So, it was really new.

You've also heard many synonyms refer to this infection. The actual name of the virus itself is the SARS-CoV-2 virus. It is a variation of a prior virus that people probably have heard of called the SARS virus that caused bad pneumonias well over ten years ago. People also will hear it referred to as the novel coronavirus, novel being a medical term by saying that it's really new.

Now why is this virus such a big problem? Well, a couple reasons. First, it is very contagious; and it's much more contagious than a lot of other infections we face. It's clear that it's more infectious and contagious than the common flu.

Now it's a little difficult to know how much more contagious it is than the flu because there's really not yet been sufficient testing for us to truly know how many people are infected. You know, when you see the reports on the news each day of the number of cases in the world or the number of cases in the United States, that number probably underestimates how many people actually have the virus because there are many people without symptoms that have the virus who are not, who have not been tested. And, of course, it would be difficult to know who to test if they don't have symptoms.

So, the reason it's been much more contagious than we had expected is that, first, it can be present in people without symptoms. Two, it can linger on surfaces for likely several hours, depending upon the surface, which makes it much more likely to be spread from one individual to another.

This is in pretty sharp contrast to some other viruses that are bad but are not contagious in people without symptoms. So if we use another virus that is frightening to individuals, let's say Ebola, there was an Ebola outbreak in Western Africa several years ago; and people may have seen the TED talk from Bill Gates that talked a little bit about that infection.

Now the reason that infection was difficult, but it was able to be controlled and reside in West Africa, is that people typically were pretty sick by the time they were contagious. So, the Ebola had symptoms, but in general they didn't feel well, so they were relatively restrained in how active they were or whether they were outside of the house. So that's one of the key reasons this has been so contagious is people don't know they're infected and potentially might be spreading the virus.

The second key thing about COVID-19 that has really made it be a difficult challenge and why really globally our society has really stopped to try to curtail it is that the rate of people becoming very sick from this infection is much higher than it is for other infections that we face like the cold or flu.

The way I describe it for my patients is that there is a second step. Step one is people become infected. Maybe they have symptoms, maybe they don't, maybe they have fever. There's a second step which is a pneumonia, pneumonia meaning an infection in the lungs that can be very severe. And with that pneumonia, people get very significant inflammation in the lungs; and the lungs, which help us to absorb oxygen and put it into our blood stream typically are very light, they are very elastic. But when they become infected or are inflamed, they become heavy, they fill with water. They are not able to effectively get oxygen from the air and put it into our blood. So that second step is what makes COVID-19 potentially fatal in, you know, anywhere from, you know, 1 to, you know, 5% of individuals that are infected. And the exact numbers are still difficult to know.

That is also the reason why there's all the discussion of ventilators. A ventilator is a machine that helps support the lungs and put higher pressure in the lungs to try to help force oxygen into the bloodstream of individuals whose lungs are not working. So, it's like a crutch for a lung that is not working well.

That is the crucial reason why the need for the ventilators. There's a certain percentage of people, if, if a certain number of people get sick, let's say 100 people get the, the coronavirus, there's going to be X number of people, maybe that's 5, maybe that's 10, maybe that's 15, depending upon which group it is, that develop the

pneumonia and need that crutch of the ventilator during the period of time that their lungs are healing from the infection.

So a long-winded answer, but to kind of frame what it is we know about the virus to some degree as we can then use that as a bit of an anchor for some of the answers to the questions that have been coming forward, both from patients and caregivers.

Alicia: Dr. Mesa, thank you so much for that very detailed answer. I think a lot of people, like you said, it'll answer a lot of questions for people.

You mentioned the numbers that we are seeing each day on the news of the new cases of this virus is increasing and increasing. And as you know, the LLS, we serve patients and caregivers who have a blood cancer diagnosis. And so with that information, a lot of those people are asking, "what does the effect of the virus have on me as a blood cancer patient?" What would that answer be? Who is more at risk?"

Dr. Mesa: As we speak about risk with the COVID-19, there's two types of risks to kind of keep in mind as we think about particularly patients with blood cancers. First, there's the risk of acquiring the virus; and, second, there's the risk that if you're infected, how likely you are to develop the more difficult COVID-related pneumonia that makes you very ill or requires hospitalization or becomes life-threatening.

Patients who have blood cancers are a very heterogeneous group, range from young individuals to individuals of advanced age, range from individuals who might have no compromise of their immune system, meaning they're in a mode where things are being observed by their doctors, their disease has not been very difficult, individuals that have had very significant treatments or a condition in their blood that interferes with their immune system.

So, one, as I've been advising patients, it's an important time to connect with your doctor, whether it be by phone, video visit through your, the electronic medical record, you know, email, whatever that is, but to get a better sense of what your specific risk is as an individual because there's individuals with blood cancers that range from being very similar in risk to the general population to individuals that have very significant risks.

What we do know from our colleagues in both Asia and in Europe that have preceded us in the kind of peak times of caring for patients with COVID-19 is that individuals with cancers, and with blood cancers, particularly if on stronger therapies, have had a greater risk of developing the COVID pneumonia or the disease becoming more

threatening. It's difficult to know how much it increases the risk of just acquiring the infection because we don't have a broad enough kind of number of tests in the general population to know, you know, what is that likelihood of developing the infection compared to the general population. But I would think, in particular, individuals with low white blood cell counts, individuals on medicines that suppress the immune system, most certainly individuals that are older, have other medical problems, have a history of pneumonias, all might be at an increased risk of developing the infection as well.

So, overall, I would say individuals with blood cancers, we certainly have a greater concern; and I do think it would be very important to connect with your respective hematologists or healthcare team just to have a sense of what they think that risk is specifically for you and to what degree for the social distancing and other things should you be undertaking.

So, for example, let's say my patients that have previously had a stem cell transplant, that is a group that we are more concerned about being more prone to developing the infection. So in those individuals, I've recommended, if at all possible during this time of stay-at-home orders, to have others in the house be the ones that go get the groceries and for those individuals to be using their masks, good hand hygiene in terms of hand washing and all those sorts of things. So, I think having a specific connection with your healthcare team to know what does that exactly mean for you will be important.

There are many potential things that may be impacted during this time. Are they checking your blood counts at a certain frequency? Is that something that should be delayed or not? Are you scheduled to receive any treatments during the next few weeks? And, if so, maybe those therapies are important to proceed; and how do they do that in a safe way? Maybe those are therapies that can be deferred or delayed till later this summer. Maybe you have some routine monitoring that is scheduled to occur, a routine re-check of your bone marrow or a PET scan or a CT scan. Again, as healthcare institutions, you know, we are trying to defer those things where we can; but there's other things that are very important in your care that may have to occur kind of during this time as well.

So, I would say that overall, my university as a healthcare system, and it's a pretty comprehensive system across all medical specialties, we're doing about 50% of the care that we normally do otherwise. About 50% of the things that we're able to do remotely or that can be deferred till the summer, let's say an elective knee

replacement or hip replacement or a cataract surgery or a mammogram or a colonoscopy, so all of those sorts of things. But there's other things that clearly need to occur.

So if someone was in the middle of their treatment for their Hodgkin's lymphoma, and we know that that's a key therapy that hopefully will cure the Hodgkin's disease, we probably will continue to deliver that therapy for those patients because it's crucial. We complete the therapy for the Hodgkin's lymphoma.

Lizette: I think that's a really important point because we are hearing from a lot of our patients and caregivers that they're scared that they're not going to be able to get the treatment that they need at this point.

Dr. Mesa: And I think that that is, a real and appropriate fear but, one that most medical centers have worked very hard to try to overcome. Meaning if you do need that therapy, it truly can be given safely.

So let me give you an example of how our center is operating and interacting with many other cancer centers. Around the country, I think, very similar processes have been in place. I've been incredibly impressed with the collaboration between centers, between the leadership and engagement of key groups that help people communicate. The Leukemia & Lymphoma Society's done a spectacular job, both with physicians and with patients. The American Society of Hematology, helping to really coordinate thoughts, ideas, and strategies across centers.

So, what are we doing to try to keep people safe? Well first, we're trying to diminish the number of individuals at a care center to those that really need to be there. So, individuals that are administrative, support research, all these other sorts of things that are, they're all great, but those individuals are working from home.

To even our providers and nurses. If they're not actively involved in face-to-face care that day, they are working from home. Today all my patients that I was seeing were video visits, so I'm conducting that from home. I go into work when I need to. If I'm seeing a patient that, it's a face-to-face visit on a trial, otherwise, working from home.

We have all individuals enter and leave the facility from only one entry point. That entry point has individuals that are gowned and masked; and screening individuals, both were questioned as well as physically take the temperature of everyone that walks in the building. Everyone gets a mask. Anyone that is not feeling well and potentially has symptoms, we have a separate entrance they're directed to be able to

be evaluated for symptoms, because their symptoms might be from something completely independent of COVID; and we want to care for them. But we're able to screen them in an isolated part of the building with a team that is appropriately gowned and masked for them. If they need COVID testing, that occurs.

So, I think our center, like others, we're trying to keep anyone who even might possibly have COVID completely separated from those who are coming in to receive treatment. Those that are coming in to receive treatment, unless if there was a really strong reason, we're asking them not to bring any visitors. Again, minimizing exposures. People then come in, receive their treatment, and go home.

Individuals that are receiving radiation therapy, which is a daily process, we actually have a part of the parking lot where they park; and then we text individuals as the radiation therapy vault and technician are ready for them. They're texted and then they are able to walk into the building, the same process, go straight to the vault to receive the therapy, and then back out to their car and to go home. Like most centers similarly, you can have a strong sense of confidence that all of the practices of social distancing, safety, and others are at play. So if you need therapy, you will be able to receive so in a safe manner.

Alicia: Thank you, doctor.

Doctor, I was reading an article about this physician who contracted the virus and was in the hospital; and there were a lot of organ failures that took place after his initial admission into the hospital, and they tried an experimental therapy. Now based off of the conversations that are taking place within the healthcare world among researchers and doctors, what does the treatment for COVID-19 look like outside of ventilators and kind of monitoring the person? Are there talks about experimental therapies that can at least give hope to people who are looking for some type of answer to this?

Dr. Mesa: So, this has been a period of time, I think, of more scientific advance and collaboration in a rapid way than I think any time in human history. I mean this virus probably infected the first person in December, and now we are here in April. We fully understand the virus, multiple different diagnostic tests have been created around the world, multiple new vaccines that are being tested, and there's multiple therapies that are being investigated. So, for all of that to have occurred during this time is really without precedent.

Now I would put the treatments into kind of different categories. So, one, part of the challenge is, certainly going into this, we did not have a great preexisting treatment for this. It's a brand-new disease.

So, first, there's been the discussion of the antimalarial drugs of hydroxychloroquine. That has had some activity. It's a therapy that also potentially has some side effect as well as some heart side effects. There are clinical trials ongoing. It certainly is clear that it is not a fantastic therapy for this but has some benefit.

Now there's also risk with it, so whether those risks make the therapy not a great option or not effective enough, I think we don't yet fully know. But I'm hearing that there are mixed results with the trials.

Second, there has been beneficial reports of what is called convalescent plasma, meaning the plasma part of the blood of individuals that have the infection and have recovered. So, the thought is that these individuals have antibodies that fight the virus in their bloodstream and potentially can share those with another. If they donate blood, they separate the plasma; and then they give that plasma in a filtered and controlled way into individuals that are infected. So, there's multiple efforts trying to leverage that around the world, and that has shown some benefit.

Third, there are antiviral drugs. So, these are antibiotics specifically working against the virus. None of them are approved yet. There are many in testing. We have one here at our center, remdesivir, in an expanded access protocol; but there are multiple that are all kind of being experimented in parallel with people trying to figure out which of these alone or in combination might be best.

Fourth, there are therapies looking to try to diminish the negative effect of the virus on the lungs and the inflammatory pneumonia. There's a class of drugs that I have been involved with in my career that are called JAK inhibitors; and these include drugs such as ruxolitinib, fedratinib, momelotinib, and others.

The JAK inhibitors, in addition to working to help patients with myelofibrosis and myeloproliferative neoplasms, blood cancers, are potent anti-inflammatory drugs that also have been helpful in a condition called graft-versus-host disease, which is an inflammation people get after bone marrow transplant. But this class of drugs has been shown in small studies to potentially be beneficial in helping improve the inflammatory pneumonia of individuals with the COVID-19-related pneumonia and potentially helping people heal up to be able to come off of ventilators.

So now there are global Phase III trials with ruxolitinib, alone or in combination with other therapies. There are also therapies including an infusion of what we call mesenchymal stem cells which are cells from the blood that can go to an area and potentially help it to heal. So, infusions of those to try to help the lungs try to heal.

So there are many parallel experimental therapies looking at different aspects of the process, both from developing infection and the infection worsening and the healing process to try to see how they can assist in that part to try to help get people better. And I suspect as we see more effectiveness in some of these things, we likely will use them in a more expanded way but potentially earlier.

So let's say we see one of these drugs helps people heal up from the pneumonia. We probably will try to use those drugs earlier in people that we think are at greater risk of developing a pneumonia or have an early pneumonia.

Alicia: That's great news that there's so much being done at the moment.

Dr. Mesa: It's without precedent, the rapidness of scientific advance, the unbelievable amount of coordination, the rapid nature of trials being developed and activated, there is no precedent for how much effort, how well coordinated it's been, and the pace of advance is extraordinary.

Lizette: I know that you mentioned that this is unprecedented and it's true, so many people are doing so many things to try to find a therapy. We keep hearing on the news that the clinical trials, the earliest that we can get anything would be 18 months. Is that correct?

Dr. Mesa: I think that's probably incorrect. I don't think anyone truly knows. You know, so I think, as much as there is a desire to, you know, to try to plan what this looks like in 2021, 2022, I think all of that is still largely speculative. I think the rapidness of advance will really come from the effectiveness of what is discovered. Normally to develop a new test and to get it FDA approved is something that takes months to years. There have been dozens and dozens and dozens of tests to detect the COVID virus within the last two months.

You know, my center invented a brand-new test and got it FDA approved, as did many centers kind of in parallel. There are multiple vaccines that are rapidly being tested, multiple therapies that, if effective, could become approved. You know, so I think timing, I think, is difficult for anyone to know. But I think it'll be as rapid as humanly possible.

You know, I personally know Steve Hahn who is the Commissioner of the FDA. I think they've been a spectacular job. I think this will not be a period of things being slowed down by bureaucracy and other things. I think it will be limited by the effectiveness. I think the more effective and the more safe something is, the quicker it'll get approved.

And the good news is we're not really just waiting for just one thing. You could think that there are many things out there that are trying to do this all in parallel, which is the right way to do it, and then we'll see which is the most effective. Maybe that vaccine comes from the US. Maybe it comes from another country. Wherever it comes from, great. And whichever one is the most effective, we'll need to get it out there.

Now a couple key things that they're trying to avoid though is to have people feel that they are protected and they're not. So people say, "Well why don't we just give everyone the vaccines that we have now, even though we don't know whether they're effective?" The downside with that, in addition to, one, maybe there's safety concerns for the vaccine, but let's say that they're safe. The negative for using it, if we don't know if it works, is people having a false sense of them being protected.

What we need is that people have a vaccine, we have full confidence that the people who've been vaccinated are protected against developing the infection. It's the same issue that comes up with discussions regarding testing for the antibodies to see if someone is immune. It's crucial if we say, Lizette, we think you are immune to the virus, that that's accurate because, again, you may, you know, act on that. Maybe you will then, you know, go and volunteer to take care of people that are COVID-positive and sick. We clearly need to know that you are genuinely immune if that occurs.

So that's really the key holdup with these things, you know, enough time to really know if it's a vaccine, does it really work? If it's a test for seeing if you're immune, are you actually immune? If you're receiving a treatment, because, obviously, we're giving those treatments to people that are very sick, we need to know that the treatment helps as opposed to giving them a different treatment; and we need to know that it's safe.

Alicia: Something that we always hear about cancer is the phrase that "cancer does not discriminate" and neither does COVID-19. We are reading more and more headlines that say that reports show that black and Hispanic people are dying of COVID-19 at alarming rates.

And just those headlines alone, if you just read it that way, it can be irresponsible in regards to how that is reported. So, we just want to know why is that the case? Again, what are the conversations taking place within healthcare regarding these populations?

Dr. Mesa: Well, it's a very important observation; and, unfortunately, it's real. We see that in, particularly in populations in, in Chicago, in New York, and other areas where individuals, you know, African Americans, Hispanics, and others are having worse outcomes. So, maybe or maybe not they're having a higher rate of the disease; but what is being seen is that there's a higher rate of individuals having worse outcomes and more likely to develop pneumonia and more likely to pass away from the disease.

Part of it are many things that, that relate to their baseline level of health. So there are multiple issues. One potentially is healthcare access. You know, so perhaps a delay in, in testing. There are things regarding whether they're able to practice safe social distancing and other sort of protective measures kind of based on the realities of where they live, density of population, and other things.

But, a big factor is much higher rates of other medical problems that we know put people at higher risk. In particular, underlying, diabetes, high blood pressure, heart disease, lung disease, and other sorts of medical problems that we associate with what are called the social determinants of health.

There are multiple aspects as it relates to our economic status that potentially impact our health in a variety of ways. Unfortunately, we're seeing higher rates of death in these populations; and their underlying health is part of it, but clearly economic circumstances and other aspects of bias that are kind of built in our society add to that difficulty.

Alicia: Absolutely

Lizette: I know that a lot of patients are really concerned about their caregivers, because their caregivers are the ones that are going out, possibly doing the shopping, and some caregivers may not be taking as many precautions. Is there anything that patients can do at this point?

Dr. Mesa: Sure. So, without question, our immediate kind of environment, whether that's family, whether that's along with their caregiver, whomever is kind of in our home, surely there's risk of counter transmission within that without question.

Surely caregivers of patients who might be immunocompromised or at a higher risk, have especially high responsibility for trying to, you know, follow everything we can to,

to minimize the chance that they become infected and share that with someone that is at greater risk. So that includes certainly now all the CDC guidelines which I think are well-founded. You know, wearing a mask, even if that's a, a cloth mask. If you're wearing a cloth mask, great; but be sure to, to launder those, you know, so that they're clean. You know, vigorous hand washing, frequently. Avoiding when you're, out kind of touching your face. Surely keeping all the suggestions of social distancing and some public venues are better at reminding people than others.

Some grocery stores are really good about keeping people separated. Others, it's still a bit of, a jumble. So really trying to keep those distances; and, again, you're going to be having to touch things. You're having to touch the cart and other sorts of things. You know, our grocery stores, I'm sure many others, have been trying to clean those. But, again, figure that when you're out, anything you touch might have the virus on it and to be sure not to touch your face, your eyes, your nose, your mouth until you've had a chance to wash your hands with soap for at least 20 seconds or use good alcohol-based hand wash.

Lizette: And I know that when I look outside, I see people walking constantly, just through the neighborhoods just to get some exercise; and most people are with their pets. Can their pet catch COVID-19?

Dr. Mesa: That is a, a very good question, and I think the jury to some degree is still out. We do know of a tiger that developed, in a zoo, the COVID infection. All of that said, we have not been hearing, that there has been any significant evidence of dogs, cats, other sort of domestic pets either getting the virus and becoming ill. We don't know of any dogs, cats, etc. that have gotten the virus and then shared it with their owners.

So, there's no evidence of that yet. I think they're still largely recommending to, again, consider your pets just like you do others in your immediate house, trying to be as reasonable as one can be. But at this point, there's not a high likelihood of animals being able to develop the infection.

Alicia: And, doctor, based on trends and predictions, what does the future of this virus look like?

Dr. Mesa: It's truly the crystal ball uncertainty of the time being. I think we are clearly getting a sense in many areas the curve has been flattened, which was clearly the goal of this dramatic global stop. I think, you know, in normal epidemics, that means that the number of cases out there will still continue to be there and linger. But

this was intentional and appropriate to really decrease the number of individuals that would have either overwhelmed the healthcare system or the number of individuals that would have passed away.

Historically, we would think that the numbers would diminish and there then to be kind of a second bump in the near future. Is that the fall? Is that the winter? Difficult to know.

The other things that will help to modify that potentially can be where a vaccine gets woven into play, the effectiveness of probably some amount of functional social distancing, which may be at play for the time being after society reopens to a greater degree, as well as the widespread kind of immunity testing. What we don't know right now is how many people have been exposed to this, have immunity, and never knew they were sick. That too will likely play a role in, you know, what does a second bump look like; and how do we help to try to diminish that?

What I do think from the positive side is if there is a second bump, it clearly will not be what we're in now. I think we'll be much better prepared. I think centers will be much better prepared. I don't think that it would be as sharp a peak, and I think there will be much more testing in control and other sort of efforts to, to more diminish it.

So there likely will be another peak, but I don't think there will be another, March/April, the world coming to a standstill, at least that is my hope.

Alicia: That is our hope as well.

Lizette: Exactly.

Alicia: Dr. Mesa, thank you so much for not only your time today but also sharing hope with us and our listeners about COVID-19. Right now, healthcare workers are on the frontlines of battling this virus during this crisis. Our doctors, nurses, technicians, transporters, EMTs, pharmacists, maintenance, cleaning staff, and everyone who supports patient care are rising to the occasion and caring for our most vulnerable populations.

So, on behalf of The Leukemia & Lymphoma Society, thank you for working to keep us all healthy and for all that you're doing.

Dr. Mesa: Yeah, thank you very much for including me. I think this is, really an extraordinary period where we really get to see the very best of what makes us people.

I think, my colleagues, the unbelievable inspirational work of our nurses, physicians, scientists, and caregivers working to try to both care for patients and keep folks safe, even though it puts them at risk, is tremendously inspiring. You know, the unbelievable rapid scientific advancing collaboration is nothing short of extraordinary.

And the incredible coordination and effort from organizations like The Leukemia & Lymphoma Society to really try to help everyone they possibly can while everyone at each of these organizations is having the same struggles that we all are, regarding food and basic needs but still trying to kind of pursue those missions.

So, for folks, I would say I'd be incredibly hopeful. I think keep doing everything that you can, and I know together we'll get through this; and there will be, again, like all these crises, I think we will learn many things from it and hopefully we won't have to experience a period like this in the future.

There likely will be other viruses in the future; but I think we will be in a very different circumstance, so hopefully we never have another episode like this again.

Alicia: Absolutely. And like you said, The Leukemia & Lymphoma Society, we're closely monitoring the coronavirus, COVID-19 pandemic. So you can get more information about that, including our new COVID-19 patient financial aid program, by visiting www.LLS.org/coronavirus.