COVID-19 UPDATES FOR THE COPD COMMUNITY

April 20, 2020

Webinar Transcript

Jamie Sullivan: Hi everyone, welcome to today's webinar, COVID-19 Updates for the COPD Community. We're so glad you can join us to connect and learn during this stressful time. [Provides webinar housekeeping information.]

Jamie Sullivan: Before we kick off with the formal program, I would like to introduce Corinne Costa Davis, the COPD Foundation CEO, to provide opening remarks.

Corinne Costa Davis: Thanks Jamie. Good afternoon everyone. I am really grateful that we can provide extraordinary service to our patients, caregivers and families while we work with the nation's leading physicians to present accurate and timely information through our webinars, blog posts and online community during these difficult times and I want to assure you that we're here to support every patient, caregiver and family member who needs us.

Corinne Costa Davis: We are very grateful to you, our community, as your support of our cause is what makes this all possible. We cannot do the work we do without your ongoing generosity.

Corinne Costa Davis: Please consider making a gift to support this vital work by visiting our website copdfoundation.org and clicking on Donate Now. Thank you for your generosity and for being a part of the COPD Foundation Community.

Corinne Costa Davis: We know that you will find today's webinar helpful and extremely informative. Thank you again. Be well and stay safe. Thanks Jamie.

Jamie Sullivan: Great. Thank you Corinne and once again, welcome. My name is Jamie Sullivan and I'm the VP of Public Affairs here at the COPD Foundation. I'll serve as your host today.

Jamie Sullivan: To start, I'd like to remind everyone that the information on this webinar should not serve as substitute for medical advice and any content discussed should not be used for medical advice, diagnosis or treatment.

Jamie Sullivan: Please consult with your physician before making changes to your own COPD management plan or if you have any questions about COVID-19 symptoms. We will be making a recording of today's webinar available within 24 hours.

Jamie Sullivan: The information presented on today's webinar about COVID-19 was current as of today, April 20th, but the information about the disease and the recommendations discussed here today are changing rapidly.

Jamie Sullivan: If you're reviewing the recording of this webinar, this information may no longer be accurate. So let's get started. We'll begin by covering some basics on the COVID-19 situation now, updates on risk factors and what we've learned about how the disease is impacting the community so far.

Jamie Sullivan: We'll also hear more about how the coronavirus works and reminders on the best ways to prevent contracting COVID-19. We'll then cover updates on symptoms, the quest to develop vaccines and treatments and how to maintain your COPD management even when COVID-19 has become the focus of attention worldwide.

Jamie Sullivan: The presentations have been informed by your questions, however, we recognize it's impossible to cover the entirety of information on COVID-19 in one webinar.

Jamie Sullivan: So rest assured if your question is not answered today, we will continue to consult with our medical and scientific experts and we'll be providing additional content online and in future webinars.

Jamie Sullivan: The topics will be covered by a panel of world class medical experts. We are grateful for their time and their dedication to informing and empowering the COPD community during a period that's also taxing on medical professionals everywhere.

Jamie Sullivan: So our speakers today include Dr. David Mannino, a public health expert and former COPD Foundation Scientific Director, as well as a Professor at the University of Kentucky and medical expert for GSK.

Jamie Sullivan: Next you'll hear from Dr. Byron Thomashow, a practicing pulmonologist and Professor of Medicine at Columbia University Medical Center. Dr. Thomashow is also the COPD Foundation's Chief Medical Officer and a founding board member.

Jamie Sullivan: Next we'll hear from Dr. Robert Wise who is also a practicing pulmonologist. Dr. Wise is Professor of Medicine at Johns Hopkins University School of Medicine and, currently, he's the chair of the COPD Foundation's Medical and Scientific Advisory Committee.

Jamie Sullivan: Our fourth speaker is Dr. Jill Ohar, a professor of medicine and pulmonologist at Wake Health and currently the Vice Chair of the COPD Foundation's Medical and Scientific Advisory Committee.

Jamie Sullivan: As you can see, we have an incredible wealth of expertise here with us today. So without further ado, let's kick it off by hearing from Dr. David Mannino.

Dr. David Mannino: Thank you, Jamie. As Jamie had mentioned, these are data that change incredibly rapidly. So this was updated as of today, but by this evening, and certainly by tomorrow, these numbers will be different.

Dr. David Mannino: But as I'm sure all of you are aware, COVID-19 is the name for the disease that is caused by novel coronavirus. It emerged from China in late 2019 and now is really present virtually in every country of the world including a rapid spread as you can see in this map of the United States and there is really no corner of the US that has not had at least a couple of cases of this disease. And this is actually what we know – and it is believed that the number of cases that we have not detected … just because of testing … and total testing in the US population is a little over 1%. So the actual numbers may actually be much higher than this. Next slide please.

Dr. David Mannino: So what have we learned about the risk for severe complications of COPD? Well, there are a number of factors, and also as Jamie mentioned, this is something that really changes from day to day and also changes as we go from one part of the world to another.

Dr. David Mannino: For example, we look at different metrics of disease. So if you look at different countries of the world, what we call the case fatality rate can change ... Or is dramatically different for example.

Dr. David Mannino: In Italy and Belgium, it's over 12%, in the US, it's currently at around 5%, but we believe that as we detect mild to milder cases with better testing methods, that case fatality rate will decrease.

Dr. David Mannino: But as seen in bold here, not every ... And this disease varies between different individuals and different people that may have different risk factors and also, there's some evidence that as we look at different parts of the world, at least, there are different strains of the virus. So actually, there are some changes that may be related to that, but certainly, the factors that are listed in the blue box here including an individual's genetic make-up, the dose that a person is exposed to, and one's individual immune system experiences and strength are factors in how this disease may manifest itself.

Dr. David Mannino: So and some of the frequent questions that I've gotten are “Are smokers or people that use e-cigarettes at more risk?” and the answer is yes, whether that's because of smoking per se, which changes the immune system, or because of other factors. For example, people that smoke or use electronic cigarettes are

spending a lot more time with their hands close to their mouth and that in itself may be a factor.

Dr. David Mannino: Also mentioned here is the role of the ACE-2 marker and this is a marker that's present on cells. This is actually how a certain type of blood pressure medication works, but also is the entry for this virus into cells and the questions that have come up, "Well, should I stop take my medication because I'm taking a medication that affects this?" And the current knowledge is no, you should continue taking your medication even in light of this receptor being important in this disease. So the last question here, “Is air pollution a factor?”

Dr. David Mannino: Well, there is evidence that certainly in certain parts of the world that exposure to what we call fine particulate air pollution, abbreviate here as PM2.5 might be related to higher mortality rates.

Dr. David Mannino: Well, this is something that we also know is increased in urban and metropolitan areas. So this is something to stay tuned on because it might be just a marker for people living in urban areas. Next slide. And with that, I will hand the microphone over to my friend, Dr. Thomashow.

Dr. Byron Thomashow: David, thank you so much. Before I take over, I have a question for you if that's okay.

Dr. David Mannino: Sure.

Dr. Byron Thomashow: So we recognize ...

Dr. David Mannino: Absolutely.

Dr. Byron Thomashow: That older people are at more risk. Now having said that, that doesn't mean that people under 60 are at no risk. There's been a lot in the press about the fact that younger people are at greater risk of spreading the disease to their older families and friends and that's certainly true. But certainly, all of us have seen people under the age of 60 who end up being hospitalized, who end up being in the ICU or end up being intubated. Unfortunately, we've seen some who have passed away. Having said that, the youngest people, the children don't seem to be particularly affected by this. Do you have thoughts, Dave, as to why that might be the case?

Dr. David Mannino: Again, and this is something that I think until we get better testing and certainly immunologic testing, we can actually see who has been exposed and that's something that we won't have answers to. It could be related to the immune system. I know for example in Kentucky, one of the most recently diagnosed cases was in a 10-month old, but again, that is evidence of infection, and whether that results in any sort of severe outcomes because – and we know for example from both the Chinese data and the Italian data and now we're seeing

it in the US, that probably about 80% of people have either mild or no symptoms.

Dr. David Mannino: But it's that other 20% that end up either in the hospital or on a ventilator that we're very concerned about. And this is not too dissimilar from what we see in other types of viral diseases and hopefully, as we continue to get more data, then we'll be able to get a better handle on those factors, but certainly on the factors that cause more severe illness. But certainly, being older and it's not necessarily age in itself, but probably the disease that comes along with getting older -- if you don't die, then you will eventually start developing what we call co-morbid diseases, hypertension, heart disease, COPD, [an] important one. And as these diseases sort of stack up, that seems to increase the risk and I'm sure you'll be talking about later, it may not be the infection itself as opposed to some of the immunologic reactions – what people are calling the cytokine storm that occurs – that might be causing a lot of these problems.

Dr. Byron Thomashow: Thanks Dave. And that's a good entry to the next step. So there's still a lot that we need to learn about this virus that is obvious, but we have learned a lot in the last couple of months.

Dr. Byron Thomashow: We understand that predominantly, the people affected are older as David said. We've learned that people who live in groups think nursing homes, think prisons, think shelters, are going to be a greater risk and in particular, as David just mentioned, people with underlying disease states, what we call comorbid diseases.

Dr. Byron Thomashow: So if we were to look at the original, some of the early data that comes out of China, they had as we all know, large numbers of cases and one of the earliest studies looked at some 70,000 people who had been hospitalized in China as far as with COVID-19 as to whether or not they had underlying conditions and most of these people did.

Dr. Byron Thomashow: They found hypertension in 16%, they found cardiovascular disease in 12%, they found diabetes in 8%, but interestingly, malignancy, chronic renal disease, COPD were all less than 1%. So they were not particularly groups that were at significant risk of having them, but if you had one of those, if you had COPD for example, the data suggests that you had a fivefold increase risk of having severe COVID-19 infection. So it wasn't so much that you were increased risk of having it, but your risk of having a more severe reaction was much higher, greater chance of having severity, greater chance of ending up in the hospital, greater chance of ending up in the ICU.

Dr. Byron Thomashow: What about the US data? Can we look at the next slide please Jamie? So this was an early study. It was completed on March 28th, at which point we had 120,000 people in this country who had been diagnosed.

Dr. Byron Thomashow: Obviously, the numbers have gone much, much higher. At that point in time, there was relatively little data and there still is relatively little data about underlying disease states. So of those 120,000 cases that had been reported, less than 7%, *7%,* so less than 10% of the reported cases had data on underlying health issues. So some 7,000 or so people. So we need to recognize that we're only seeing a portion of those 120,000 and the information may differ as we get better information, but if we just look at those 7,000, 37% of them have one or more underlying conditions.

Dr. Byron Thomashow: Of those hospitalized, 71% had one or more, and of those who ended up in the ICU, 78%. Coming back to what David mentioned before, it may very well be that these other conditions, these underlying health conditions, play major roles with that.

Dr. Byron Thomashow: The most common as you can see on the chart included diabetes of 11%, chronic lung disease (which would include COPD) is 9%, cardiovascular disease around 9% as well. But if you look at the other columns, if you look at the people who end up, for example, if you look at the people who end up being hospitalized, not in the ICU, the number with COPD is now 15%. If you look at the ICU admission, the number with lung disease is now 21%. So again, there are issues here, but they have more to do with the severity of the disease.

Dr. Byron Thomashow: If we look at the New York data, some of the early New York data reported between early March and early April, in one health care system in New York, 48% of the people diagnosed ends up being hospitalized and the most common risk factors, the most powerful predictors of hospitalization, were age and comorbidities – including the comorbidity of obesity – and that's something that all of us have seen more and more. The reason for that is not completely clear, but it does seem to be a risk across the ages. Next slide, please Jamie.

Dr. Byron Thomashow: This is one of the more recent studies that have come out just within the last week. It was a letter to the editor of the New England Journal of Medicine from our colleagues at Cornell under the leadership of Fernando Martinez. 393 consecutive patients with COVID-19 who were admitted to a couple of New York City hospitals. They were admitted between March 5th and March 27th. The median age was 62, 60% of them were male. Obesity was present in 36% of these people. Diabetes in 25%, hypertension in 50%.

Dr. Byron Thomashow: COPD only made up around 5% of these patients. Again, it suggests that COPD, like other comorbid conditions, is an issue, but it's really more of an issue in those people who get a significant infection. And what we do not know yet is the severity of the COPD because one would suggest that those people with more mild disease would be at lesser risk of having a rough course. It's something that we need to learn more about as we go forward. Next slide please.

Dr. Byron Thomashow: Quite clearly, anybody who has underlying diseases including COPD needs to take all the precautions that have been outlined from COVID-19 which we see

all the time on the news. It's one of the reasons why this study that was published again just within the last week or two is really a bit of a concern. It was a study done from in the Chicago metropolitan area. It was a survey linked to three active clinical trials and one cohort study. So these were people who were already involved in the medical system. 630 adults with one or more chronic conditions.

Dr. Byron Thomashow: It was surveyed between March 13th and March 20th. The mean age was 62, 63% of them were over the age of 60. Females made up a higher proportion. That's something that's a little different than what we're seeing.

Dr. Byron Thomashow: 60% of them had three or more comorbid conditions, cardiovascular disease in 23%, pulmonary disease in 24%, diabetes in 54%, hypertension in 75%, and obviously, a significant percentage of those pulmonary complications presumably had COPD.

Dr. Byron Thomashow: What was concerning was a little bit about the reactions that we saw, 25% of them, only 25% of them, were very worried about getting coronavirus. Nearly a third could not correctly identify symptoms or ways to prevent infection. And in the multi-variable analysis, participants who are black, who are living below the poverty line, who had low health literacy were more likely to be less worried about COVID-19, to not believe that they would become infected, and to feel less prepared for an outbreak. This is really a concern and it expresses again how important education is, how important it is explaining what we're trying to do, to understand that facts are important here, and that we need to understand those facts.

Dr. Byron Thomashow: Next slide please Jamie. So this is my last slide. So the COPD Foundation has tried to address some of these issues. Particularly the impact that this disease is having on those of us who are trying to serve on our population. So we surveyed these patients as part of 360social. The survey was launched on March 29th and closed on April 13th, and within that short week or two period of time, we had 566 respondents.

Dr. Byron Thomashow: 513 with COPD, including 96 who also had bronchiectasis. 16 were diagnosed with COVID-19, but only five of all these people had actually been tested. Only five. Only two of those were positive, both of those ended up being hospitalized, both of them ended up in the ICU.

Dr. Byron Thomashow: And 177 of these people had described and reported COPD exacerbations in 2020. What's the take home message with that? The take home message is that we need better testing, we need more testing, particularly of those people at risk, so we have some idea how we can deal with this, potentially dealing with it earlier on.

Dr. Byron Thomashow: The other thing we attempted to do with this study is to get an idea of what the emotional impact was, using a technique that looks at natural language

processing. It's a machine learning technique that allows us to look at the words that are being used to get a better idea of what the emotional impact is. As an example of that is A, the little notice, the little wording that we have on the side.

Dr. Byron Thomashow: This is from one of the patients who reported in. "I read reports that some drug shouldn't be taken if infected with COVID-19. That is concerning. I live in almost total isolation. I worry about my next exacerbation more than ever now, thanks to COVID-19. I'm 64 and I live alone. Just me and my little 10-year old dog. Now I feel like I'm being stalked by the grim reaper."

Dr. Byron Thomashow: As opposed to some of the stuff that came out of that Annals article, we have been overwhelmed with the degree of emotional issues here, and what it says in the graph, this was one specific question.

Dr. Byron Thomashow: The response to concern about medications in the era of COVID-19, and as you can see, while there was concern about drug costs and drug shortage and healthcare availability, overwhelmingly what's come across is the issue of anxiety, a stress, a stress that we are all living under here.

Dr. Byron Thomashow: As we move forward, the foundation will work with you guys, will work without population to try to support the community with a focus of helping some of the emotional well-being.

Dr. Byron Thomashow: This is something that all of us are really concerned about. We will be repeating these studies, these surveys to try to get an idea of whether this changes as we move forward.

Dr. Byron Thomashow: We will get through this together, but there's a lot we need to do. I think the next slide and then I think I'd turn it over to Bob.

Jamie Sullivan: Yes. Wonderful. Thanks so much Dr. Thomashow. It seems like there's new information being released daily, and it's always helpful to hear what the community should really take away from these early studies. So thank you. Okay.

Dr. Byron Thomashow: Jamie, if I could just interrupt one more second before I turn it over to Bob. I think what we're seeing here is a really amazing out-flowing of research data. Ordinarily, when you try to publish stuff, it can take months and months and months before we get it back. We're getting things out really early here, that's going to help us. Bob, it's yours.

Dr. Robert Wise: Thanks very much Byron. So what I want to talk about is what we know about this virus. This is a little bit of a technical talk, but I think it's important that we understand how much we know about this coronavirus, SARS-CoV-2 which causes the disease COVID-19. And I think that if we understand what we know, this is less, our fear is diminished. This is the enemy shown here. The picture on

the left-hand side of your screen shows a representation of what this virus looks like.

Dr. Robert Wise: It's called a coronavirus because it has all these spike proteins that are in red that surround it and looks like a corona around the sun or a crown if you will. And then on the right hand side of the screen is a cross section of what this virus looks like and it's actually a pretty simple structure.

Dr. Robert Wise: It's an oily bag of lipid membrane that encapsulates a lot of genetic material, RNA, the genetic material that codes for proteins and enzymes and on the surface are these very prominent spike proteins or receptors that are what attaches to the cell.

Dr. Robert Wise: And then there are a couple of other kinds of proteins on the surface, the M-protein and the E-protein and inside is the N-protein and these proteins are important because how they are put together is what determines the species of coronavirus and makes it susceptible, not only identifiable, but also susceptible to very specific antibodies that attack these proteins.

Dr. Robert Wise: Next slide. The next slide shows exactly how the virus attacks a cell. If you look at the left-hand side of the screen, number one, the virus – this bag of RNA if you will – attaches to the surface of the cell through this ACE2 receptor that is on the surface of the cell. This is important because the ACE2 protein is very specific and heavily laden on respiratory lining cells, the respiratory epithelial cells, and therefore, the coronavirus can attack specifically respiratory cells in great numbers.

Dr. Robert Wise: So the virus attaches to the cell surface and then the cell produces an enzyme that says this is a foreign substance and it tends to ingest the virus. The virus can put out certain proteins and enzymes that protect it while it's living in the cell in its little capsule that it lives, in this membrane capsule, and it releases the RNA which encodes proteins, and it actually hijacks the mechanism that the cell uses (shown in numbers 3 and 4) to produce more RNA and to produce more of the proteins that the virus represents.

Dr. Robert Wise: Then these all go into what's called the Golgi apparatus in the cell and the Golgi apparatus puts together the proteins and the RNA and these get assembled in a little capsule that then gets released to the cell surface.

Dr. Robert Wise: One virus can produce thousands of replicates of itself and as it does so, it kills the cell. So the lining cells of our upper airway, nose, throat, and entire respiratory tract can be decimated by this virus.

Dr. Robert Wise: However, the virus is a little sneaky because it takes typically about 30 hours between the time that the virus attaches to a cell and when it is released. Next slide.

Dr. Robert Wise: So, why is this virus such a formidable enemy? Why does it cause a pandemic? So it shows some characteristics that are new. First of all, there's no cross immunity between this virus and other coronaviruses that cause common colds, minor illnesses. So we don't have anyone in our communities who's already immune to it. Second, this virus can shed for two or more weeks after infection. So there's a long period of time where individuals who may have mild or no symptoms can shed the virus and infect other people, and the degree of asymptomatic transmission is trying to be figured out, it can be as much as many as one out of eight people, at least in New York City, who actually can test positive for transmitting the virus but have no symptoms whatsoever.

Dr. Robert Wise: Moreover, in contrast to other respiratory viruses, this virus can be shed in the feces so it can be spread at least in theory by people sharing bathrooms and toilets and public toilets if there's not good hand hygiene.

Dr. Robert Wise: Moreover, this is a very sticky virus, it stays around on hard surfaces for several days. We don't know if it's still infectious by three days, but we know that we can detect some of the viral RNA for a good long time.

Dr. Robert Wise: This is probably not the main way of transmitting the virus, but if one touches a surface with a lot of virus on it, and then touch is one of the mucus membranes of the mouth, the nose, or the eyes, one can get infected.

Dr. Robert Wise: Another thing that limits our ability to follow this virus is that the nasal swab testing that we're all asking for can become negative after a couple of weeks. So we may not know until we get good antibody tests whether someone has actually had this disease. So we're a little bit blind in terms of the actual infection rate in the population.

Dr. Robert Wise: The main mode of transmission is through droplets, but in a closed space where there's not much air circulation, some of the virus can stay suspended for hours.

Dr. Robert Wise: So if someone walks into a space where, again, there's not good ventilation, one could in theory be infected by these very fine particles that stay suspended in the air for hours.

Dr. Robert Wise: Another sneaky thing about this virus is that it can cause pneumonia without the typical signs of pneumonia and pneumonia is one of the mechanisms by which with coughing, people spread enormous quantities of virus, it's much more infectious than upper respiratory infections. And then finally, and I think this has been mentioned before, is that the immune response to this -- because after these viruses leave the cell, the body responds with what's called an innate immune response, and if the body over responds, that's what causes a lot of the severe symptoms of the disease: the fever, the achy muscles, the prostration and, finally, the organ damage that occurs with this. So this is an important aspect of this disease that occurs in a minority of patients, but accounts for the

severe disease. Now, that's all things that we're facing as we face down this disease, but there are some good signs. Next slide.

Dr. Robert Wise: A little bit of good news and this is that we understand now that this virus is predominantly spread by droplets, people coughing and sneezing and we know well how to prevent this form of transmission. Simply social distancing, staying six or more feet away from people, is an effective means of preventing this for people who are caring for patients, health care workers and caretakers, personal protective equipment – masks, gowns, and gloves associated with good hand hygiene are very effective in preventing droplet transmission.

Dr. Robert Wise: Finally, this virus is actually in contrast to some bacteria not very resistant to good hygiene. Soap dissolves this oily lipid membrane, detergents are effective, hot water, heat about 140 degrees -- which is about I think the temperature of a well done steak -- will kill the virus, almost any common disinfectant, and ultraviolet light will kill this virus.

Dr. Robert Wise: The other thing that's I think very promising is that there's a huge amount of active research on vaccines. You'll hear something about that, but some of these vaccines are totally new types of vaccines, so-called RNA vaccines, that attack very targeted components of this virus. And instead of having to wait a year or more for these as we do with live vaccines, these things can be rapidly produced and scaled up and hopefully will give us a vaccine that can be used not just for every person in the United States, but every person in the world once we get a vaccine. So we're keeping close touch on that.

Dr. Robert Wise: So what do we know about things that we can do to prevent it? Well, currently, CDC guidelines now suggest using a face mask. The main reason to do this is when you're going to be in close contact with other people out and about, and it's mainly to prevent the transmission of the disease from people who are infected to others.

Dr. Robert Wise: One of the things that's important is to make sure that mask that you might use don't interfere with supplemental oxygen under the mask and for that reason, many people have said that bandana-style masks are the most comfortable. The key thing though is to stay home and stay socially distant. Next slide.

Dr. Robert Wise: So there are a few things that I think you all know about: six feet of distance between people, wash your hands frequently, particularly after touching any contaminated surface. We also recommend that people should avoid using their inhalers while they're out because they might contaminate the inhaler by touching something then touching the inhaler and then putting it to their mouth.

Dr. Robert Wise: So just make sure that if you are using your inhaler, that you're doing it with cleaned or sanitized hands. A few things about oxygen are listed on this slide and the key thing is to make sure that you keep your oxygen tubing meticulously

clean and wipe it down before you go out, after you go out, and every day with alcohol and make sure your hands are clean when you handle your oxygen canula.

Dr. Robert Wise: Finally, if you're going to a doctor's appointment, make sure you have a plan. Very frequently, our patients will stay in the parking lot and call into the office in the clinic to learn when they're ready to come in and see the doctor. Of course, telehealth has taken off tremendously and many patients can be taken care of in that way. So thank you.

Jamie Sullivan: Great. Thanks so much, Dr. Wise, for all the valuable information on how the virus works and for sharing these practical tips. So we'll now turn to Dr. Jill Ohar for more information on COVID-19 and COPD management.

Dr. Jill Ohar: So thanks a lot, Bob, that's been really helpful. I wanted to mention that a slide that Dr. Thomashow showed about the anxiety and concern about drug shortages, drug costs, provider unavailability, and I think much of what I'm going to talk to you about is a way in which you can help resolve that anxiety by putting your ducks in a row so to speak to have the things you need to be effectively managing your COPD.

Dr. Jill Ohar: So first and foremost, you need to know: what are the symptoms? How do I know whether this is a flare or an exacerbation of my COPD? So while not always present, one of the hallmarks of COVID-19 is fever along with cough and shortness of breath. Generally that cough is dry and hacking and not in any way similar to the cough that you have because of the chronic bronchitis and COPD where you bring up a little daily sputum or daily phlegm.

Dr. Jill Ohar: Now, while fever is not invariably present, it is most commonly present, and also, there can be other symptoms though -- and these tend to be more common in the elderly – and that would be diarrhea and nausea and even vomiting. So just because you don't have fever, and you have more of a GI tract kind of infection, this could be COVID. It's an unusual presentation, but it could be COVID.

Dr. Jill Ohar: If you don't have fever and have your usual cough and usual shortness of breath, that's probably your COPD. If it's above your usual baseline, it may be a flare of your COPD. Runny nose can occur with COVID, though again, it's not a hallmark symptom of it. This then leads to this whole concept -- here it is, pollen season, you wake up in the morning, you have a sore throat, you have a runny nose, your eyes are watering, is it COVID or is it pollen? It's pollen.

Dr. Jill Ohar: The other common finding or symptom with COVID is this overwhelming muscle aches, the myalgias and the fatigue and this seems to be related to the virus's ability to attach to the hemoglobin molecule and actually alter its ability to carry oxygen out to the tissue. So in addition to the pneumonia, and therefore low blood oxygen that occurs with the COVID, there is this inability to actively take

oxygen out related to the virus attaching to the hemoglobin molecule. Next slide please.

Dr. Jill Ohar: Well, what about vaccines? Well, clearly they're in excess of 140 different companies working on various vaccines at this point and while a vaccine is certainly to be anticipated, and maybe actually present within the next year, there's testing that needs to be ... needs to occur among unaffected individuals. So we need widespread testing of antibodies, that means widespread testing like Dr. Wise talked about, of patients who have had the infection and have the antibodies, to know who will be actually be made or rendered or who will actually benefit from the vaccine. If you've already had the virus, if you've already made antibodies to it, a vaccine, A, probably won't be necessary and B, won't be effective.

Dr. Jill Ohar: So we need to isolate a population who has not previously developed the COVID infection, and those would be the ones that would need to be tested. After testing for both efficacy as well as safety, then the vaccine has to be scaled up to be produced in large quantities and then exported.

Dr. Jill Ohar: So this is going to take a while, this is not something that can be done overnight. It's also important to understand that most respiratory tract viruses are cyclic, that is they're winter disorders. And so generally, they scale up in the fall, there's a brief decrease over the Christmas holidays when all the kids are out of school and not getting it from school and bring it home to Mom, Dad and Grandpa and Grandma, then an upsurge again in January and then a fall off generally in April and May.

Dr. Jill Ohar: Now, we don't know whether this virus is going to follow that pattern because it's a totally new virus, but if it does, if it does tend to continue to scale back during the summer months, we need to be prepared for an upswing in this vaccine *[note: speaker likely meant virus rather than vaccine]* in the fall.

Dr. Jill Ohar: Now, what kinds of treatments may be available until a vaccine is available? Well, we talked about how people who were infected form antibodies and those antibodies are in their serum. So there's a lot of a lot of work done right now around would serology from people who have had an infection and got better, would that be a way we can treat people who have developed a serious infection?

Dr. Jill Ohar: In addition to that, repurposing drugs that are already out on the market. There's been a lot of in the news about hydroxychloroquine which is a drug used for malaria, and whether or not it's going to be successful in any way ameliorating this disease and at this point, we don't know. Also, antivirals such as Remdesivir may be useful and again, there's active studies sponsored by the NIH right now looking at these agents, and finally, azithromycin which some of you may take to decrease the frequency of COPD flares, because it not only is an antibiotic, but in addition to that, it's an anti-inflammatory drug that actually has anti-inflammatory capabilities.

Dr. Jill Ohar: Also new and on the horizon are agents that inhibit this so called cytokine storm, agents that bind to the proteins that are responsible for this over-exuberant immunologic response to the viral infection.

Dr. Jill Ohar: Next slide please. And it's also important to realize that there's no evidence at this moment that any of these drugs that I've mentioned are effective, and therefore, should you or relative develop COVID, there's no reason to go in and demand that you get one of these drugs. But it is wise that should a hospital that you go to is running a clinical trial on any of these drugs or others, it would be important to volunteer for that trial because you may get an active drug or you may get a placebo and you can help for us to understand whether these drugs are active or not.

Dr. Jill Ohar: Also, in this period of high anxiety, it's really important to remember that COPD management is crucial, more crucial today than last month or last year.

Dr. Jill Ohar: So knowing what your baseline lung function is, knowing what your baseline physical functioning is, that is can you walk a flight of stairs? Can you go 100 yards? Where is it that your shortness of breath becomes limiting to your activity?

Dr. Jill Ohar: Knowing, for many of you who have pulse oximeters at home, knowing what your baseline oxygen requirements and baseline O2 saturations are, and this is a godsend as we move to virtual visits, and I'll talk about that a little bit more in a minute. Doing a daily self-check of your oxygen saturations, taking your medicine, being compulsive about your inhaler technique. Staying physically active, many of you may belong to a pulmonary rehab group or pulmonary rehab follow-up group and now that those are closed, finding ways to stay physically active while still so distancing, all the gyms are closed, the pools are closed, so taking walks, if you're able to ride a bicycle, a stationary bicycle at home, a treadmill at home. And also, using your My COPD Action Plan.

Dr. Jill Ohar: Next slide please. So tips for making the most out of your telehealth visits and these are great. I have just recently begun doing telehealth visits, I love them, my patients love them. So you need to make ... To get the most out of this, you have to number one, prepare in advance. So you need to check out your video software, your camera, your speakers, do this in advance of your appointment.

Dr. Jill Ohar: I have found that my patients take advantage of their technical consultants which are also known as their grandchildren and the grandchildren are wonderful with this, they seem to just innately, intuitively understand the technology. So kids are out of school right now, if you've got a video appointment coming up, make sure that you've got that grandbaby close by to give you the technical advice you need.

Dr. Jill Ohar: Use your COPD Pocket Consultant Guide, and the app that goes with that, to keep track of questions that you may want answered during your appointment,

or just use an old-fashioned piece of paper and pencil and make that list of questions. Help your family members make that list of questions for you. Keep track of your symptoms, write them down as I mentioned, have that pulse oximeter close by, have the readings that you've recorded from your pulse oximeter recently, so that when your doctor says, "Well, tell me, give me some objective evidence." You can say, "I used to be able to take the stairs, I can only get halfway up. My oxygen saturation used to be 92%. Now when I'm walking the stairs, it goes to 86."

Dr. Jill Ohar: So those kinds of things are huge. Having a family member or a caregiver join you on the visit, not only the grandbaby, AKA, also known as the technical consultant, but also the caregiver or a family member who can add information about your functional status and also help to take those notes so that when you get off that visit, and you look at each other and say, "Now what did they say to do?" You have it down in your notebook as well. Next slide, please.

Dr. Jill Ohar: Okay, so tools to help you prepare … and this comes directly from the app (The COPD Foundation app): recording activity level, appetite, fatigue, oxygen levels, then how much phlegm are you bringing up? Has it changed in its quality? Is it yellow now and it used to be clear? Is there blood in it? Did you at baseline cough up a couple of tablespoons of sputum daily and now it's a quarter of a cup? Those kinds of things are critical. Not only shortness of breath, but what kind of activities precipitate that shortness of breath? Are you experiencing tightness in your chest?

Dr. Jill Ohar: Have you gained weight -- because a lot of people with COPD have concurrent congestive heart failure and that weight gain may imply that you've got extra fluid from the heart failure, or have you lost weight because you're too short to eat adequately? Wheezing is important as well.

Dr. Jill Ohar: Other questions, that you get so wrapped up in the appointment that you forgot to ask the questions? What does that test mean? What were those results? So if you've had tests taken recently, write them down so you make sure that you can get the results back to you and how that may affect your care.

Dr. Jill Ohar: I had mentioned that azithromycin is being used in many hospitals as a treatment for COVID. So it's important to make sure with your clinician if you are on that they will have adequate supply for you, or is there an alternate medicine they may want you to take?

Dr. Jill Ohar: It's also important because providers are more scarce that if you have frequent flares, that you may have a prescription for an antibiotic and steroid on hand so that at the first sign of a flare, you can fill it or have it at home and begin to take it with the caveat that you will call your doctor to let them know you are now on the steroid and the antibiotic.

Dr. Jill Ohar: I mentioned earlier that it's critical that you know how to use your device. And I had an appointment with a patient today that I saw on a soft mist inhaler and had no clue, it was a new prescription for her, there was no instructions given. She had no clue how to use it, was actuating it after she put it in her mouth and sealed her lips around it. So clearly, not the right way to use a soft mist. So it's really important. Now, a little bit more about pulmonary rehabilitation. I think we're going to talk about that on a different slide. So let's move on. Don't forget to stay active.

Dr. Jill Ohar: We actually, you can see a website here of home exercise videos that you can use. In addition to that, it's important to know that we are we as clinicians are very concerned about having access for you during this period of time to pulmonary rehabilitation. We were beginning to look into and develop plans for virtual pulmonary rehab. Just like we already have virtual clinic appointments or outpatient appointments for you. So this is right off the presses.

Dr. Jill Ohar: The group, the Society of Cardiovascular and Pulmonary Rehabilitation Therapists, is leading an effort urging CMS to cover virtual pulmonary rehabilitation. Already, in my home state of North Carolina, we have had the licensing board already say yes, that virtual visits are within your scope of care, so you can do that and so we're hoping that many other state boards will also follow along with this, so when CMS agrees to pay for these visits, that we can move forward rapidly. It's important though if you are not involved actively in a pulmonary rehabilitation program currently (which is now in advance because of the virus), before you start one, please make sure you discuss it with your clinician before you access one of these programs and begin to use it.

Dr. Jill Ohar: Next slide please. So there are a lot of resources that are out there that you can access. They include My COPD Action Plan, the Pocket Guide Application, Staying Healthy and Avoiding Exacerbations Fact Sheet as well as COPD360social.

Dr. Jill Ohar: In addition to that, for those of you who may have questions about your inhaler use and how to use a given device, you may be unsure and you don't know who to go to. Certainly, your pharmacist is a good guide and feeling that you definitely can just ask that pharmacist, "Can you give me 10 to 15 minutes to show me how to use this device adequately and effectively?"

Dr. Jill Ohar: If you're anxious about going out, shockingly there are a large number of YouTube videos showing how to use the various inhaler devices. Don't feel shy about this. Many, many people don't know how to use these devices.

Dr. Jill Ohar: There are over 30 of these currently out on the market. It can be very vexing. Is this the one I inhale sharp and hard and fast with or is this the one I inhale slowly and deeply?

Dr. Jill Ohar: These are critical to getting the meds down. So as you spend more and more time socially distancing and staying at home, look into these things to make sure you're using your drugs to their maximum capacity. Next slide. Well, it's time for Jamie.

Jamie Sullivan: Wonderful. Thanks so much Dr. Ohar. It's really encouraging to hear how the scientific community is rallying around the need to find new treatments and vaccines and obviously, thanks so much for the practical information related to telehealth which I know is new to so many of us.

Jamie Sullivan: So to close out today's webinar, I'm going to share a few updates on the policy issues related to COVID-19 and conclude with some other resources that you might find helpful and as a reminder, the slides can be downloaded in the GoToWebinar control panel to access these links that have been presented today – and will also be available on the Foundation's website in the coming days so you can access the links and the recording and a number of other resources, like inhaler videos and others, that are out there.

Jamie Sullivan: So to start out, I think it's important to note that there has been an unprecedented effort in the patient advocacy community to join our voices together to advocate for changes that will help ensure our high-risk communities can stay safe at home, but still access the care that you need to manage your health in an affordable way.

Jamie Sullivan: So these are just a few of the highlights of what's occurred so far either by Congressional action or by the Centers for Medicare and Medicaid Services (CMS) waiving rules that they traditionally have for how health care is paid for and delivered.

Jamie Sullivan: So as you've already heard, CMS has vastly expanded the ability to receive care in your home and including telehealth appointments and by allowing you to receive infused or injectable medications in your home rather than having to travel to a clinic to receive them as you might have had to before.

Jamie Sullivan: For those who use oxygen, there's also been some changes to waive requirements for you to be seen in person when you start oxygen and again at the 12-month period, which is important, and it may not seem as important, but they've even waived the requirement for you to sign for your oxygen delivery. So your oxygen delivery should be contactless now. After our first webinar, many of you asked about, “how should we get 90-day supplies of medication so that you can minimize your trips out?” And luckily, the recent CARES Act did include a provision that mandated coverage for a 90-day supply. So this should now be possible. There are of course other financial relief policies that you're likely familiar with, including broader paid leave, unemployment, and individual relief payments.

Jamie Sullivan: This is just a very broad overview of some of the key changes we think are most relevant to you so far, but our work is not done. We have many COVID-19-related priorities that we think are important for you to know about and we think these priorities will go a long way towards, again, protecting you from high out of pocket costs, having quality in affordable coverage, and allowing you to stay home but keep up with your health.

Jamie Sullivan: So the speed with which these changes have taken place so far has been welcome news, but it's really, our job is not over. These still urgent priorities must be addressed.

Jamie Sullivan: Well, some of them are highlighted here. The first I really wanted to stress is a question we've received from several people who have COPD, but who still work in jobs that are considered essential, such as healthcare workers, grocery stores, and pharmacies. Unfortunately, as of now, there are no policies that would allow these high-risk individuals, and those with other chronic diseases that make them high risk, to voluntarily take paid leave due to the danger they face by remaining in the workforce. And this is a top priority for us and for our colleagues in the patient community to address.

Jamie Sullivan: We recently sent a joint letter together to congressional leaders asking that they make high-risk communities eligible for paid leave and we'll continue to push to see this addressed. We're also advocating to ensure you're protected from surprise high out-of-pocket costs, should drug shortages arise and you require a medication that isn't traditionally on your plans formulary, or if you seek care for COVID-19-related concerns -- you may have heard the term surprise medical billing. Well, it's more ... it's important always, it's more important now than ever that we do protect our patients from surprise medical billing. Lastly, we're joining the calls to urge CMS to cover virtual pulmonary rehab and to empower respiratory therapists to provide services via telehealth for COPD management.

Jamie Sullivan: These are issues that would benefit the COPD population even in the absence of COVID-19, but they're made even more urgent now in the current situation. So we know there are many more challenges you're facing that could be addressed by policy solutions at the state and federal level and we will continue to monitor and advocate on these issues in the coming weeks and months.

Jamie Sullivan: So please check in if you're interested with the COPD Action Center on our website under the Take Action tab. If you're interested in getting involved or advocating on particular issues, you can let us know there.

Jamie Sullivan: So we've heard, as we transition to Resources, we've heard that several people who are were still working have lost their jobs and lost their coverage or who weren't able to sign up during open enrollment. So I just wanted to take a moment to make sure you know that if you're struggling to access health care at this time, if you've lost your insurance, there are places to turn for help.

Jamie Sullivan: The important things to know are that solutions are going to vary by state. Most require you to act fairly quickly after you've lost your coverage and to show proof that you've recently lost your coverage. A few states have even open special enrollment periods to those who hadn't purchased coverage in the first place so that you have the opportunity now to enter a plan given the increased health care risks we're facing today.

Jamie Sullivan: I want to stress that the resources listed here are just a few of the credible agencies and independent nonprofit organizations to turn to, but they are exceptional resources and if you're looking for help and information on how to navigate the health care space and coverage issues, please do reach out to any number of these organizations.

Jamie Sullivan: So we know you're facing information overload and in the age of social media, it's not easy to break through the noise to identify what sources are relevant, timely and credible.

Jamie Sullivan: So with that said, we'd encourage you to regularly visit the sites for the CDC and the World Health Organization along with the resources here from Johns Hopkins and, of course, from the Foundation's own COVID-19-related pages.

Jamie Sullivan: Our goal is really to inform you of important changes in the CDC and WHO recommendations, but add context to those recommendations for our COPD community.

Jamie Sullivan: You can find our updates on our COVID-19 page, or directly from our homepage, by clicking the top of the page. We'll continue to post regular updates on our blog, as well, including answers to the questions you submit here today, updates on the national response to the coronavirus, and other important issues. Finally, a reminder that you can access today's recording along with past webinars, which do include a recorded question and answer session with experts that may answer some of the questions that we've received today already on our coronavirus web page directly here.

Jamie Sullivan: Okay, and next, I'm looking at the time and we may unfortunately not have time to answer your questions live today, but as we've done in the past, what we will do is take all of these great questions, triage them, and make sure that we get answers out throughout the week and so please check back on our website frequently and we will send out a message to everyone who has participated here today when your answers are available.

Jamie Sullivan: Finally, please know you're not alone. As you see by the experts here today, we're all in this together. We hope you've taken away some of our practical ... some practical knowledge and tips today that will help you navigate in the weeks ahead. I'd like to send a special thank you to our speakers who have taken the time to be here with us today and to you for tuning in, and for staying in the conversation over the coming weeks and supporting each other.

Jamie Sullivan: So with that, again, just a reminder that we will take all of your questions here today and get you out answers in the coming days and you will receive a notification when those are available. So with that, I'll close our webinar and thank you again for joining us.