Welcome to LungFIT, a podcast dedicated to topics and issues related to the practice and research of pulmonary rehab. I'm your host, Dr. Pat Camp. I'm an associate professor in the department of physical therapy at the University of British Columbia. And I'm a principal investigator in the Centre for Heart Lung Innovation located at St. Paul's hospital in Vancouver, BC. I've been involved in pulmonary rehabilitation for over 20 years, and I'm delighted to bring this podcast series to our listeners.

Hello everyone and welcome to this episode of LungFIT. Today I wanted to chat a little bit about COVID-19. Of course, you know, this is been in our minds, this topic professionally, personally, from a society perspective, thinking about our own families. I wanted to talk today though, a little bit about COVID-19 and pulmonary rehab considerations. Of course, many of us are really trying to grapple with this situation in our clinical practice, and I'm not going to attempt to make any treatment recommendations or anything like that in this podcast, because you know, the evidence is constantly changing and I don't want outdated information or incorrect information to be out there.

But I do think that this is an opportunity for us to think a little bit about what some of the considerations are related to pulmonary rehab in COVID-19, and also to think about what opportunities this new area and this new situation might offer pulmonary rehab. So I'm guided a lot by work of others, of course, and you know, some of the work has been done by the European Respiratory Society and the American Thoracic Society who have come together to provide task force statements and interim guidance. And I think that these are excellent places for you to go and to read these papers and to get some insight as to what experts around the world are considering as important recommendations and guidance and questions to ask around pulmonary rehab and COVID-19. And so I'll link to those papers in the show notes, and I would really encourage you to have a look at them.

But what I thought I would summarize with today is just some of those questions that we're wrestling with, and that might lead some discussion for you in your hospital setting. And so what are some of these questions that, that we're thinking about as we think about pulmonary rehab and COVID-19? Well, of course, one of the first ones was do patients who have survived COVID-19 do they need pulmonary rehab? And, you know, initially there wasn't really enough evidence to suggest what the needs were, but certainly now there is more and more excellent observational studies that have characterized some of the limitations that patients have after COVID-19. I think initially we were really looking at this from the perspective of COVID-19 as a respiratory disease and certainly some of the early papers talking about ongoing symptoms really focused on respiratory related symptoms like shortness of breath. But I think as we're learning more, we're recognizing that COVID-19 is really much more than a respiratory disease and we're seeing ongoing limitations that patients have that move beyond the respiratory system. And of course, some of these may be related to their hospital stay, especially if they had a critical care stay. And so some of the limitations that they may be continuing to have maybe related to the situation of being immobile, maybe for long periods of time in the hospital, but there certainly are other things that are coming up cardiovascular, neurological, mental health, PTSD symptoms, and we're learning more all the time as we, as the disease moves more into a younger population. And as our long-term follow-up continues, we're going to learn more about these patients' needs. And the, the term "long haulers" relate to patients who had COVID-19 many months ago and still have disabling symptoms that are preventing them returning to their regular roles in their lives. So I think that it's going to be an important thing for us to consider as to whether or not pulmonary rehabilitation is going to be the right place for patients. Maybe it's going to be more of the right

program for a given patient and not necessarily all patients going into one type of program, but certainly we're going to need to learn more about what are the primary limitations that patients have after COVID-19 that would be amenable to pulmonary rehab.

Another question that comes up a lot is how early, and by this it means should some kind of rehabilitation lens be or focus beyond patients even very very early in their infection. And I think that there's still a lot of uncertainty about this. Certainly there is a very strong evidence base about the role of physical activity and mobility and exercise in critical care populations. And so from that perspective, we can be comforted by a strong evidence base around that. But I think what we don't know is, are there any particular contraindications or risk factors for exercise in patients who are very early in their infection status, especially the most critical ones. Another question is, what about infectious status? Should we be concerned about patients in terms of their ability to participate in any kind of rehab program? And that could even be a telehealth program, but they may still be at home and might need to move around and be able to access resources in their home. So again, a lot of uncertainty, but as we learn more about patient's infectious status and when they can be considered safe for exercise and, and to be around others, then hopefully that some of those things will be more clear. I think an important one is really thinking about the capacity of their existing pulmonary rehab programs to see patients who have COVID-19. And I don't know if this has really been addressed in great detail, but I think that this is going to be something that as we think about things like quality indicators for pulmonary rehab and what makes a quality program, we do need to think about what are the unique characteristics of a COVID-19 patient that need to be addressed and are our existing pulmonary rehab programs able to address those needs.

It may be that patients with COVID-19 can only be seen in a telehealth setting, that it isn't going to be possible or appropriate for them to come to an outpatient program. And so even maybe for the first period of, of their rehabilitation, a telehealth will be their only option to access a program. And so of course, a program needs to have the capacity and the experience for running a, a pulmonary rehab program via telehealth. And maybe that means that there still needs to be some sort of in-person assessment and then patients are able to exercise on their own. But I think with all of the uncertainty around patient safety and how much we don't know about this disease, I think that it will be challenging for programs to only offer a telehealth program and never really have an appreciation for a patient's response to exercise with the, with the telehealth of course goes the appropriate equipment. And by this, this may mean not just equipment in terms of exercise equipment, but also in terms of personal protection equipment and the capacity and the process for a program to keep their equipment clean. You know, when you think about exercise bikes with sort of foam grips and treadmill, treadmills with various types of push screens and lots of places for droplets to be in, you know, I think that it's going to be important for us as pulmonary rehab programs to really consider thoughtfully our ability to maintain a safe place in terms of infection.

Skillset I think is something that's going to be very important for us because in some ways, and in some places, pulmonary rehab programs are only run by maybe one or two disciplines. In Canada, many of the pulmonary rehab programs here are run by respiratory therapists in some places it's by nursing and some places, just a physio. But when you think about the potential primary limitations of patients who may have issues with neurological conditions, cardiovascular problems, or mental health problems, do the existing disciplinary nature of our pulmonary rehab programs. Are they broad enough?

And do they have the expertise and the skillset to deal with patients who are not only complex, but where we don't have a strong evidence base to really understand what to expect. And so, you know, there is a little bit of familiarity, I think, with the average pulmonary rehab program patient, in terms of someone that might have COPD or interstitial lung disease in terms of the expected response to the program based on your own experience, and of course, a strong evidence base. When you're faced with a patient population who is entirely new and who you really don't know what to expect, you do need, I think a higher level of expertise in the program to be able to identify when a problem may occur, be able to have resources in place in the program to refer patients to further or higher levels of expertise. So I think these are really important things to think about and for programs and program staff, to really reflect on what they would do if. Do they have the necessary training and skills and equipment to be able to assess, monitor, prescribe, identify if, if things aren't, aren't going well and be able to refer patients on if necessary? So I think that's a very important question for program staff to ask themselves.

And of course, you know, an important one is, well, what about all of the other patients that are normally in pulmonary rehab program? If you're like the programs where I live, a lot of those have shut down or are quite limited in terms of seeing their, what shall I say, regular patient population of patients with for example COPD. And so do we have the capacity to add a new patient population? And when we don't have the capacity to see the patients that we would normally see. If you are running an in-person program, are your patients who are at high risk of potential poor outcomes, if they get a respiratory infection, are they going to be potentially wanting to stay away from your program? If they know that there are also COVID-19 patients there and they're unsure about the, their infectious status. So, you know, if somebody comes in that might take the place of somebody else, and I think they're important questions for us to consider, do we have the capacity to add a different patient population that have different needs? And with that, of course might need additional funding in order to make those programs run. When we have such poor access and such limited ability to see the patient populations that we typically attempt to see.

So I hope that these questions have given you something to think about and things to discuss when faced with the question about how pulmonary rehab is going to run in your particular setting whether you're going to try to add patients who have COVID-19 or had COVID-19 into your setting and what are the sort of things that you need to think about? I would really recommend that you start to explore some of the resources that are available by the Canadian Thoracic Society, European Thoracic Society, American Thoracic Society, other thoracic societies have certainly produced a lot of important information based on their experiences as well. So look and, and read and try to understand what some of the experts in the field are questioning and wondering, and then go back to your own program and see if you're going to be able to offer care for patients. And if so, under what parameters, what patients, how will you do it, and how will you ensure that patients are both safe and also get an effective intervention in terms of their health outcomes. So thank you for joining me on this episode, and we'll see you again soon. Bye for now.

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