Home Health PT Implications for Patients with COVID-19

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- [Calista] Well, our title again is Home Health PT Implications for Patients with COVID-19. It is my pleasure to welcome back both Dr. Pamela Bartlo and Rachel Botkin of physicaltherapy.com. Rachel is a licensed PT with 20 years of clinical management experience in home health, skilled nursing facilities, and outpatient settings. She is currently the owner and president of Botkin Rehab Services, and she earned her Advanced Competency in Home Health in 17, and became a board certified in neurologic physical therapy in 2005. She has been an adjunct faculty member at Clark State Community College teaching neurological rehab to PTA students since 2008. She is a member of the APTA Home Health Geriatrics and Neurological Sections where she serves on the Home Health Practice Committee and co-authored the Home Health Toolbox for Outcome Measures. Pam received her bachelor's of science in PT from Daemen College and then her doctorate of PT from D'Youville College. She is a board certified specialist and cardiovascular and pulmonary PT since 2005. And her clinical experience focuses on cardiovascular and pulmonary care but has also included experience in the rehab of adults with neurologic system impairments. Since 2004 Pam has been a faculty member at D'Youville College in Buffalo, New York and she's also the Vice President of the Cardiovascular and Pulmonary Section of the APTA. So thank you so much both of you for presenting with us and being part of our Home Health series this month. And at this time I'm gonna turn the microphone over to you, Pam.

- [Pam] Okay, thank you very much Calista for the introduction. Thank you everybody for being here with us. It's always really exciting to see all the people on the attendee list since we don't actually see you in real life. Again, I'm Pam Bartlo and Rachel will be presenting in a little bit. Just to kinda give you a little bit about me as far as I tend to talk very fast so I will try to slow down. I usually try to but it's just within my nature, I keep going fast. If at any point during the talk you'd like me to repeat something, I said

it too quickly and you weren't understanding it, just type into that question box could you repeat that or can you explain that a little more? If you have any questions along the way, as Calista said, definitely type them into that box and Rachel and I will answer them as they come up. Okay, our disclosures. We have no financial disclosures, our non-financials are just related to our work for our sections. The content does belong to physicaltherapy.com and here are our objectives. For the end of the course, you should be able to explain the symptoms and presentation of the patient with COVID-19 in the home health setting. Identify physical assessment strategies really related to evaluation and intervention. And then develop the comprehensive plan of care for the patient in home health. I did do a talk for pt.com on home health back in May or I'm sorry on COVID-19 back in May so that may be another webinar that you want to relook at. Some of the information here was in that but I did not even remotely go in depth here as well as I did back then.

And some things have changed, some things have stayed the same. So if you did see that webinar previously, you might recognize a little bit of this and yet at the same time, much of this has changed. It is definitely a disease pathology that we are continuing to learn about every single day. So I'm gonna start with some of the symptoms and characteristics specific for patients in home health. We'll start a little bit more generically with everybody with COVID and then get a little more specific. So the coronavirus classification is actually a family of single-stranded RNA viruses. So MERS and SARS are also coronaviruses. And what makes the coronaviruses unique is that they have this crown-like appearance due to the spiky glycoproteins and I'm gonna show those on another slide in a minute and kinda explain how those glycoproteins work. It's estimated that about 2% of the population are healthy carriers of coronaviruses, this is not just COVID, this is all coronaviruses. And it's estimated that coronaviruses are responsible for about five to 10% of all acute respiratory infections. That could be common colds, upper respiratory, things like that. Where it becomes a little bit more complicated is when we have people that are immunocompromised or

have other comorbidities and those people can start to develop more problems from a coronavirus than even just an upper respiratory infection. So the COVID-19 coronavirus specifically it's what's called the SARS coronavirus-2, it started in Wuhan, China in December 2019 that's why it's named COVID-19. And it really comes back again to these glycoproteins. And what happens is the ACE inhibitors that are on the outside of our pneumocyte cells in our body attach to these glycoproteins and they bring the COVID-19 virus into the cell. And then what happens is our bodies create more or replicate more of the COVID-19 virus and then we release it back out into our body. That causes problems with inflammation, we have clotting factors that are attributed. Other things start, platelets start to aggregate, and then we'll also have immune system responses.

White blood cell counts will increase, prostaglandins, leukotrienes, all of those things will try to increase in our body and so we get an inflammatory and immune problem. And here's sort of a picture of that. So up here is the coronavirus. This is the ACE2 receptor on the glycoprotein. And what happens is the coronavirus attaches there and it actually gets brought down into the cell. Our own cells then replicate it making a new coronavirus cell and then we release that back out into the blood. So what's happening is that we are actually, the virus is actually using us to replicate itself. It's not a live virus such as something like bacteria is. This is something where it's we actually use or it uses our body to reproduce more of it.

And this is part of why there is such a huge variety in how COVID-19 is presented within people, how it affects people, because it really is so individualized based on how much that person's body replicates it and how well that person's immune system can fight it. And so this is why we just really have to continually learn about this virus because there's so many intricacies of how it affects people. So, in general, the greatest impact is gonna be on the pulmonary system and this is almost for everybody that they'll have some kind of impact. And the more involved the person is, meaning

the more that the COVID is impacting them, the more the pulmonary system is probably involved. But it can also impact the GI system. We have some people that are only complaining of muscle cramping, diarrhea, things like that. It can involve the musculoskeletal system. We've definitely seen it involving the neurological system. It can indirectly impact the integument system through people that are more immobile, more bedbound, things like that. So we have to kinda look at that. In the pulmonary impact, typically, it's gonna increase fluid buildup between the alveoli and capillary. So it's not inside the lungs, so it's not like we're teaching people postural drainage or heavy coughing techniques because they're not gonna to expel it like they would an upper respiratory infection. It's really fluid and down into that alveolar sac in between the alveoli and capillaries. And so the fluid will just build up and really create problems exchanging oxygen, but we can't really expel that fluid. And then as the virus progresses, it can get into the alveoli too and that's why we kinda see it similar to like a pulmonary edema.

So I wanna give a little bit of the characteristics of what we're seeing so far. So we have to submit these, our final presentations a couple of weeks before we actually get them. So some of these dates are a couple of weeks old because that's when we had to submit the presentation. If they've changed at all, I'll let you know. So since July, at the end July 25th, it was about more men than women, about 51% that still has stayed about the same. The ages for incidents really vary. It is still typically adults over the age of 18 and up are the ones getting more affected than the kids, but it does vary within age groups. Hospitalization rates, so prior to June 25th, the 65 plus age group had the highest rates of hospitalizations. June 13th to June 18th, the 18 to 49-year-old group had the highest with 65 plus right behind. July 25th it flipped back and I checked and ever since then it has stayed the same. So it really was only one week that we had the younger adults kinda being more hospitalized. Typically, even though they may or may not have more rates of COVID, they are not getting as sick where they have to be hospitalized. It really is our people that are 65 plus, and then 50 to 64-year-olds that

really kind of remain the higher groups that end up hospitalized. And here's a really nice chart for you, you can always go back to this and kinda see some of the trends, what has happened. I mean, the good news is they came down, then they kinda spiked back up a little as a lot of states started opening back up in June and July but they are coming back down a little bit, which is good especially in some of those more recent hotspots like Florida, Arizona, Texas where they had flared up big time. Now the hospitalization rates are starting to come back down a little bit in those states as well. Some of the racial impact, we still don't have enough good quality data from everywhere but we do have some strong data from a lot of states around the country and we really are seeing Black Americans disproportionately affected, and they represent about 13% of the population, and yet they're about 34% of the total COVID deaths. In the Latinx or Latino Americans also have the highest rates of the hospitalizations along with the Black Americans.

So it really is something that is impacting our people of color more than it is impacting Caucasians. And so it's something really to be involved in and kinda understand. There are a lot of factors as to why that's happening. I can't sit here today and tell you it's one factor. There are a lot of factors between culture, socioeconomic backgrounds, availability of healthcare in urban area. It really just depends, some of the cultural things related to seeking health care. So I would really say if you're interested in that you just to start doing more research on it, 'cause there's about six or seven different things that really impact that but it is something we have to try to make an impact on. Data for patients that have COVID-19 at home that they didn't go to hospitalization, we have almost no data because the problem is most of the data we're getting is just for people that go into the hospital. So we find out who's positive and don't go into the hospital but we don't really have any data on what they're presenting with. What are their symptoms? What is their presentation? How much they are affected? Are they minimal, moderate affected? We don't really have any central data gathering on that, they're just gathering their incidents and not necessarily their symptoms. But about 4.6

million cases have being tracked since about February, March and currently there's about 1,500 people in hospitals. So where are the rest? Obviously they're all at home. Whether they are seeking medical care at home or they are just at home with no symptoms, you know, we just don't have a lot of that data. You could have one person sitting in a house with absolutely no symptoms and you can have somebody else that's really sick but they just don't wanna go to the hospital. There are also some people that obviously have already healed and some that never really had symptoms, but we also do then have a bunch that are in subacute or long-term care settings, and then also home health which is why we're here today. So some of the initial patient's symptoms and presentations. Fatigue or I'm sorry, fatigue, malaise, or fever or dry cough, these are still the three most common.

As I said, there's a lot of other things and we'll talk about those in a second, but really these are the three most common. That's why we're still checking everybody's temperature. Yes, there are a lot of people that have COVID that don't have fevers, but in general, a lot of people will spike fevers and it is one of the most common still. So we'll look out for fevers, anybody that has fatigue, that malaise, dry cough. Some people may have headache, shortness of breath. As I talked about earlier, they might have GI issues. With vital signs we'll typically see increased respiratory rates, heart rates, and blood pressure. If somebody gets to the point where they do a CT scan, they've ruled in and they're having some symptoms and do a CT scan, they'll see inflammatory patches. But the biggest thing that we're finding is what's called ground glass opacities, GGOs. If you think about what it looks like when you have little shattered pebbles of glass on the ground, that's what it would look like inside the lungs. So they'll have these little white pebbles seen all through the blackened or grayish lungs, and so that's what they'll call ground glass opacities and that's very unique to COVID-19, you rarely see that in other pathologies. The other thing is it's usually bilateral lungs in multiple lobes which is not as common for pneumonia or something like ARDS. They tend to be either one lobe or one-sided versus this is

throughout all the lungs. Some of the symptoms we expect more in home health because at this point they've probably gone into the hospital and now discharged. Some maybe never went to the hospital and they just need care 'cause we're trying to keep them out of the hospital. They're gonna be just a little bit different than some of the people that had to go into the hospital. So we wanna kinda keep an eye out for some of their symptoms. They should have things similar to those on the previous slide, probably not as much of the GI issues and probably not as severe the pulmonary issues at that point or they would be in the hospital.

The fever hopefully has gone down by that but I can't guarantee it 'cause some people you might be seeing that never went in the hospital and so they might still be having symptomatic fevers. If it's the continuum of care after hospitalization, ask the patient, what have their symptoms been when it started and how have those changed? Are they the same? Have they gotten better? Have new symptoms come in? Have some symptoms gone away? One of the things I did not put on there was the loss of sensation of smell and taste. Those are things I'm sure you've heard of. It varies from people to people. Back when February, March range, when it was first really making its way around the world, a lot of people were complaining about those. Then all of a sudden towards late May, June we heard less about that.

Now I'm hearing it pick back up again. So it's definitely something to still ask the person about their sensation of taste and smell. Some lose both, some will lose just one or the other. And those do tend to come back as the patient progresses out of their disease. So that'll help you kinda gauge how far along they are in their recovery as well. The categorization of COVID-19. Most patients who have it will be mild, so that's 80% of the people. So they'll have either no symptoms at all or they'll have maybe some mild respiratory impairments, or they might have really moderate respiratory impairments but they just don't wanna go to the hospital or it's not bad enough to go to the hospital so they stay at home and that's where you might treat them that they

never went into the hospital but they still need care. The patients that go into the hospital that's severe and critical, that's only about 20% of all the patients with COVID-19. So the severe patients they'll usually present with dyspnea, hypoxia. They'll have greater than 50% of the lung involvement. They'll have greater than 30 breaths per minute for respiratory rate. Their blood oxygen levels will be less than 93% and they're PaO2 to FiO2 ratio will be less than 300. So that's how well is their body using the oxygen that it can get delivered. Then within that group of 20% in the hospital, 5% will be critical and these are the patients that go into respiratory failure, shock, multiorgan dysfunction or multiorgan failure. Luckily this number is getting a little better as the doctors and the researchers have started really researching this disease. They've found some better treatments to keep the people from getting very sick. And so luckily our critical rates tend to be a little lower and our mortality rates within there tend to be a little lower than they were back in March and very early April.

Some of the other complications from the pulmonary impairments we'll see severe decreased endurance. Even if the patient never went to the hospital, you're gonna see that very poor endurance and it has been shown so far that it's worse than other patients that were in the ICU for other reasons. So if we took patients we used to know that went in the ICU for pneumonia or ARDS or something like that, or even if it was a trauma patient in the ICU for a month, the endurance issues with COVID-19 are much worse than they were for somebody else in the ICU. We're also seeing some fibrotic changes in the actual lung tissue. We don't know how long-term that's gonna be or not. Typically when we get fibrotic changes in the lung it's not something that can be repaired. So we just don't know yet with COVID-19, since it's so new, how much that's gonna be, like how extensive that fibrosis in the lung tissue is gonna be and how well it could compare. So it's gonna be something we're gonna have to keep an eye on. We're also gonna see some poor oxygenation with our patients especially as they fatigue during exercise. There's possible cardiac involvements. Typically it'll be related to a arrhythmia or cardiac insufficiency and that's related more to their ejection

fraction. So just keep an eye on the fact, especially if it's somebody that's more fatigued and yet their oxygenation looks okay and their respiratory rate looks okay. It could be more of a cardiac symptom of the fatigue because they're not getting good oxygen delivery because of ejection fraction issues. They are seeing some patients with myocarditis but that's not as common. Circulatory system, DVT is a real impact from COVID and we're starting to really address that now. A lot of the docs are putting patients on anticoagulants at prophylactic dosages to really try to prevent some of the clotting that happens from the inflammation from the disease. There's also some intravascular coagulation and thrombotic events and those lead to some of the neurologic problems because we were seeing patients having CVAs.

Again, that's getting a little better because the doctors are aware of that now and they're trying to preemptively prevent CVAs, thrombotic events that could cause CVAs, things like that. But we also could see seizures, the absence of smell and taste as I talked about and some paresthesias can develop. So those are some other neurologic things to think about and I'm sure Rachel will kinda share some of those as well. And then organ involvement. If they do have some more extensive symptoms from COVID, they will probably have a little bit of an organ involvement. If they have one of the severe or critical cases, they definitely will have some other organ involvement. Typically those organs are gonna be the kidneys and the liver most likely, but it can be some of the other organs especially if the cytokine storm happens and I'll talk about that in a minute.

There also can be some critical illness, polyneuropathy. So this is sensory and motor that can be seen. There can be PICS or ICU-acquired weakness. I went into these a little bit more in my other COVID talk and there are a lot of resources out there on PICS and ICU-acquired weakness. So you definitely wanna kinda keep those in mind if you've had somebody that was a severely presenting patient in the hospital, and now you're seeing them in home health, you wanna keep an eye out for some of those.

There could be cognitive impairments either because of the prolonged ICU stay, the sedation they were on, or if they possibly had some kind of a thrombotic event. And then the skin integrity as I talked about, that's really gonna just be mostly the patients that were more immobile in those ICU type settings. Patients that were hospitalized but were able to move around. We probably won't see skin integrity issues because of the disease. The skin integrity issues are really more from the lack of mobility. So the evaluation of a patient with COVID-19 due to the multi-system involvement you really want to evaluate all your systems. And I know in home care, you kinda do that anyway. Most home care agencies they have it prompted in your EMRs that you have to kinda do a system check. You have to check their balance, you have to check a little bit of their vision, you have to check their vital signs. So it's really just remembering now how these can be impacted. So definitely check their vital signs and any subjective symptoms. You're gonna wanna think of some endurance testing and Rachel will talk a little bit more about some outcome measures and some endurance testing later. Auscultation of the lungs. This is really big here.

I don't care if you remember exactly what it's supposed to sound like if it's crackles versus rales versus rhonchi. All I care is that you can pick up it doesn't sound normal. So if you're doing a normal breath and you can hear that, that's great. If you start listening to it and you hear all these weird little sounds in there, it's probably still fluid and you wanna be able to pick up on that so that you can keep an eye on whether that gets more or less, okay? And that way you can always refer them back to the doctor for specific testing on it, but you just wanna make sure you're auscultating those lungs to hear if they're clearing up or not. Definitely check strength and looking for signs of atrophy, checking range of motion. Look at all the basic evaluation stuff we do already as far as transfers and mobility. Check balance, cognition, coordination, any other neuro screenings you typically will do, and then that skin integrity on assessment. So not really out of the ordinary from what you're doing, it's just making sure to hit all of those system. So the primary goals of home health for a patient with COVID-19. Due to

the complications and the disease presentation, really we have to kinda look at some of those more basic things that become a big issue for this person. So it's endurance, it's strengthening, it's independence, and it's safety, and that's huge with endurance being one of those biggest ones. So most patients will recover from this. The mortality rate around the world and the US is still really low. I hate to like champion that like that's a good thing because I know we don't wanna lose anybody. That means that's our family, that's our friends, that's patients that are passing from this disease. We don't want to lose anybody. But if there is any silver lining, it's that the mortality rate really is quite low overall. Most people will recover from this but that's where we as PTs really have to come into play then because we are now seeing these patients that have all of those impairments because they didn't die from the disease but we now have to help them really recover to full functioning of life.

So most are gonna have some system impairments during your home health especially because they're usually either just home from the hospital or they're still new in the disease. It's not like it's two months later and they're going to outpatient. They've really only had the disease a short time and Rachel's gonna go into that eval and intervention a little bit later. I wanna now kinda cover some of the precautions for the therapist and then the precautions for the patient. So some general precautions one for all the patients you're treating. You really wanna wear the appropriate PPE for that patient and I'm gonna talk about that. Definitely wear a mask, cloth or surgical masks are fine for patients that don't have COVID-19.

So we're all walking around in them in regular life anyway, that's okay to go into these patients' homes with just your cloth or surgical mask, as long as you, they don't have COVID-19. Social distance from any of the family members or caregivers in the home. Distance from the patient as much as you can. We are a profession that's close to their patients to begin with and then when you talk about home health, you're physically close to that patient almost all the time. It's rare that you have a patient that can do

things without you being right next to them because otherwise they probably wouldn't need your services. So I get that you're not gonna be able to stay six feet away from your patient, most of you are gonna be touching them, body on body helping them with mobility or guarding them for balance training or whatever. When you can though stay back from them. So if you're just asking them questions, if you're just supervising them doing an exercise, if you can stay back safely then stay back because the least amount of exposure the better whether they have COVID-19 or not, because this way in case they have it, you're kinda giving yourself space. But if you have to be physically close with them just to make sure you have the right PPE. Surfaces in home health. We wanna try not to touch surfaces entering and leaving the house without some kinda gloves or protective barrier in place. So that's even pushing the door open with our arm, moving something aside with our leg. Try to make sure that that's not happening as much because then like let's say you use your arm to do it, well, then later you might go ahead and rub your arm on something else too.

So try to use your gloves to touch things if you can. How long does the virus live on surfaces? That's continually being researched and there's new information coming out all the time. At this point, the CDC has said that they believe transfer from contact with a surface is not as likely to happen as they originally thought, but it doesn't mean it can't happen. So somebody could cough or breathe, a droplet could land on a table. You can touch the table, you could touch your eye, and now you've just transferred it. It's less likely to occur that way than just breathing it in from the air that they breathe out in but it's still possible. And so that's why the CDC won't say it's not possible. So how long is it? Typically softer surfaces have shorter time alive, about two to five hours, but those surfaces are tougher to clean, Harder surfaces, nice and easy to get that Clorox type of wipe and clean it off but typically they can live anywhere from 24 hours to five days on those surfaces. So that's why we just say avoid touching surfaces without gloves if you don't have to because that way you can just, you touch it with your glove, make sure when you're in the house you're not touching anything else with

your gloves on your face or your mouth or anything. And then you can throw those gloves out, wash your hands, and you shouldn't be transferring anything. You do wanna use whatever cleaning solution is approved by your agency. So it's usually either a bleach-based or an alcohol-based cleaning solution. Sometimes it's an antimicrobial disinfectant but use whatever those are to clean any of your equipment that you're gonna use and we'll talk about that. Screening. It's important for the PTs and PTAs to be screened each day yourselves. So every agency has to put in place how they're gonna do this. Sometimes you might be taking your own temperature and asking questions. Sometimes you just go online through your agency and you click through five things that you're not feeling whatever it is, but you definitely need to be screened every day that you're treating a patient so that they can assure that you are not likely to have the pathology and be a vector transferring it to a patient.

You do wanna screen patients prior to seeing them, in the next slide I'll go over that a little more, and the others in the house. I gave Thomas reference there, so two different Thomas references in the reference list but they're pretty much kinda similar. They have some great guidelines with which patients with COVID-19 to treat and some PPE guidelines for that so it's a good reference to look at to help you with some of that screening. So the screening of the patients. You do wanna ask the patient if they've had any signs, symptoms of respiratory infection, fever, cough, shortness of breath. I'm sure again that your agencies have already created their screener that they want the patients to be asked every day. This is for all patients, not patients just with COVID-19.

This is your general patients that you're going in to see at home health. You can now get an idea should you go treat them that day or not. If they answer yes to any of those questions, your agency should have, what is your plan to do. So if you're asking the patient, did they have fever or did they have cough, and they say, yes, you really shouldn't be going in to see them that day, but your agency will have whatever their plan is of what they want you to do. Also wanna ask in the past 14 days have they had

any contact with somebody or under the investigation COVID-19 or if they know somebody had it. Temperature monitoring of the patients is up to your agency. Some agencies are having the therapist do a quick temperature screen of the patients or having the patients do it themselves, some aren't. I gave a little guideline there that you can click on that link that that takes you to the CDC guidelines for treating patients at home. And so that's really a nice kinda guideline to go through too. You might be able to augment your agency's guidelines with it or your agency might have already adopted those. You may or may not be the patient screener in your agency, it just depends. Sometimes they have the therapists being the ones that are going in, screen the patients. Sometimes they have an intake personnel that's doing it. So you kinda have to figure out in your agency who's doing that because that'll really help you feel comfortable with should you be seeing a patient today or not? So that could be the case administrator, again, yourself, the intake person, whoever it is. The healthcare provider, it's also important to figure out if the patient is appropriate for that day even if they've answered yes to everything.

So if you go in and they're coughing like crazy and they don't look well and they're saying they're really tired, it's okay to make that call and say, "You know, I think I'm gonna hold therapy today." Just like you would if it wasn't related to COVID. So, this is sort of the CDC's guidelines for when the patient can leave their house. So it helps you from the guideline of how much can you or should you be in contact with people? This has changed a little over time. It was originally 14 days, then they went to seven days, now they're back backup at 10 days. So I would keep an eye on this as the next several weeks and months go by but at this point, the CDC's guideline is that somebody that tests positive for COVID-19 has to remain isolated inside their house. So not just quarantined on there with a bunch of people, isolated by themselves in their house for at least 10 days. If you treat them within that 10 days, that's fine 'cause it's just like as if you would treat them in the hospital if they were in the hospital, but you have to have full PPE that we'll talk about in a minute. If it's after those 10 days and

they have at least one full day without fever and that has changed, it used to be three days, now they're saying one day without fever, without the use of medications, that's when they're allowed to then go out of their house. So that's when you're allowed to technically be around them without full PPE anymore because they're allowed to go back into the environment. You shouldn't have to have PPE. Now I say have to and should because again, my recommendations are a little bit different but this is the bare minimum. If the patient's gonna get retested then it changes a little bit because now they wanna have two negative tests in a row, 24 hours apart. So some people are getting retested the 10 days later, some people aren't.

So it just depends on that. But once these two things are met, so they've either gone there 10 days and 24 hours and they're not getting retested, or they've had two negative tests, they're allowed to go back out into the world so to speak. And so you would be able to see them with less restrictions. How long is the patient contagious? There really is no clear cut answer yet and that's why this has kinda changed a little bit. Some of the studies have shown that patients have viral shedding for up to 30 days but the viral load is so low at that point that they're not really contagious. Some say they might be carriers for six to eight weeks so that's why there's just so much gray area here. So I would still follow the CDC guidelines at a minimum that they have to be 10 days and 24 hours without fever in order for you to treat them with less precautions. Some of the screening of the others in the house.

Usually you're not allowed to ask them screening questions. Some agencies have said that they've put that in place that they do have to ask those screening questions. It just depends on your agency but if you're not allowed to ask the others in the house, just try to keep your social distance from them. If information is volunteered from you, then you can use your agency's protocols. So let's say you're sitting there working with the patient and you weren't allowed to ask is your daughter that's here in the house positive? But the patient just happens to say to you, "Yeah, you know, my daughter's

tested positive and she's in the other part of the house." Okay, now you can check with your agency. They probably have a protocol in place to be able to treat that patient as if that patient is positive even though they might not be, but you're in a close proximity to somebody that is. And so you should be able to treat as if that person is positive. So what are those PPE recommendations then to protect yourself and others? So donning and doffing PPE is a huge thing. The biggest thing is you wanna try to do it outside if you can. You don't wanna be in the patient's environment to don and doff. I know that this can run into HIPAA violations. You're standing outside somebody's apartment door in the hallway, putting on all this protective gear. You've basically just announced to everybody else in the apartment building, the person has COVID-19, which is a HIPAA violation. So I get that, that sometimes you have to kinda finesse that. So if you can be outside like maybe you can go in a back door, maybe you can do it in a stairwell that's away from the patient's room and then walk in.

If you can be outside the patient's house, that's great. If you can't then do it just inside the patient's door and try to make sure you're at least a good six, if not 10 or 12 feet away from the patient as you don as well as when you doff. Some key points when donning the PPE is make sure and this is for a patient that is COVID-positive. Is you wanna make sure that the skin at your wrist gets covered by that gown and gloves. You wanna make sure your N95 mask is the seal is intact so take a couple breaths in and out to make sure it's sealed. And then make sure that your gown is tied tight enough, you're gonna be moving around a lot and you don't want that to kinda fall open on a side where now your clothes are being in contact with the patient. So just make sure that gown is tied to really cover you. Some key points when doffing the PPE, make sure you take that gown down from the shoulders first, rolling it into itself so that you're not gonna spread that virus at all. The gloves come off inside out and do a lot of hand hygiene, and make sure you store your mask correctly. So how do we do that? Well, most people, almost everybody is reusing N95 masks, when you take it off remember that those straps are also dirty. So make sure that the straps don't touch the inside of

the mask. And then the recommendation is simple as it sounds, it works great, is just store it in an open paper bag. And then you wanna give it at least a few hours or a few days if you can but however long you just stored the mask. Let's say it's an hour later and you're treating another patient, that's fine, it's not a problem. You do wanna record the length that you use it and discard it after the recommended wear time and we'll talk about that too. So, this is for a patient that's positive with COVID-19. What do you wanna wear? You should be wearing gown, gloves, glasses or a face shield, and N95 mask, and most likely a surgical mask over that because it helps protect the N95 so that you can reuse it. If the patient is not being tested for COVID-19 or they're not positive for COVID-19, it's just one of your general home health patients, then gloves and a surgical mask or cloth mask is fine.

Doesn't hurt to still add goggles or a face shield if you want but you don't need to and you don't need an N95 mask if they don't have COVID-19, you don't need a gown if they don't have COVID-19. So, if they're positive for it, you want everything, including the N95 mask. If they're negative or they're not being tested, they're just a general home care patient, then you can get by with just gloves and a surgical mask. So the N95 mask use, as I said, it should be worn with all patients that are COVID-19 positive for at least 10 days after the onset of symptoms or their positive diagnosis. And then if they have to be, if they're still having fevers or other symptoms at the 10 days, they still should be wearing, you still should be wearing it.

My recommendation is to go as long as you can wearing an N95 with that patient and I say that but every agency's different. I've had some people that are telling me when that 10 days hit, the agency is cutting them off of N95 masks so there's such a shortage. And they're saying you can't wear an N95 with them anymore, they're past their 10 days, meaning they're not contagious. You're gonna have to work with your agency to find out what your limitation is. If they don't give you a limitation, I would wear it the entire time I'm treating somebody that had been COVID positive, just

because it's better safe than sorry at that point. But at a very minimum, it's gotta be that 10 days and no fever. Some of the things with N95 mask. You just wanna make sure they fit correctly. And then also realize that and we all know this, that PT is similar to an aerosol generating procedure because of the fact that we are in close contact with people for prolonged periods of time, meaning greater than 15 minutes. And I have three references on there, one, 36, 37, that give you some great information that PTs have put together, including a group from APTA to help fight for N95 mask use from PTs, because there are some facilities and some agencies I'm hearing around the country still that are fighting the PT saying, no, you don't need it. And so these documents really show how we are having close contact for prolonged period of times and therefore we are similar. Just our regular treatments are similar to aerosol generating procedures and therefore we need N95 masks. So if you are still fighting that fight, these are some good references.

Also as far as fit testing too, so I've had some therapists tell me they're getting handed an N95 mask but they'd never been fit tested and it's not fitting correctly. Use this to help justify why it has to be fitted correctly as well. Then when you use your correct size, make sure you do get that good seal each time you use it. The reuse of it, typically right now the recommendation is still about eight hours of wear. So, you can kinda keep reusing it. Some places have instituted a five times or eight hours of wear so maybe you only get five hours of it because you're only allowed to use it five times, otherwise you can go up to eight hours. It's usually just stored in the open brown paper bag and as I said, make sure the straps don't touch the inside, make sure every time you're donning and doffing it, that you consider that dirty after that first time. And so make sure you use gloves to put it on or take it off and then get rid of those gloves and put clean gloves on to actually treat the person because the outside of that mask is considered dirty from a previous person. Even if you had a surgical mask over top of it, it's still considered quote unquote "dirty." For sterilization of the mask to be reused after that eight hours, the CDC is kinda changing on this guidelines a little bit, but so

far ultraviolet germicidal irradiation has had good evidence and the hydrogen peroxide vaporous has had good evidence. Microwaving, moist heat, autoclaving, it's kinda mixed evidence. It is not recommended that you microwave or cook in the oven your masks at home. Okay, I've had several therapists kinda asking me that around the country that, "Hey, I heard if I put it in the oven on low for this long." It is not recommended that an individual person microwaves or cooks in their oven to kill the bacteria, the virus. It can cause damage to the mask and to its components that actually puts you more at risk.

So please don't do that. Use whatever your agency's using or kinda talk with me and I can come and give you some other information. Other kinda washing and care of PPE. I've had some therapists telling me they're only getting one or two gowns, like their agency hands them two plastic gowns and this is it. It is not recommended by the CDC to reuse disposable gowns. If you have surgical gowns that can be waterproof and they can be cleaned correctly, those are okay. But to use the disposable ones reusable it isn't really being recommended by the CDC. However, some agencies are finding in the shortage they're doing that. If you have to reuse gowns, if you can get a surgical gown that would be better because then you can actually throw them in your washing machine and truly launder them in between uses.

If they don't and you get those disposable plastic gowns, it's a little difficult. What I've had therapists that I've kinda talked through it is how to take it off and then once you can get it to an outside environment, how to spray it down with a cleaner and leave it for the full kill time and hopefully 24 hours, if you can, but that's not the ideal. Glasses, they're a lot easier, you just wanna disinfect the inside of the lens first then the outside. Big thing here though is let them dry for the full kill time. Whatever cleaner you're using typically it has anywhere from a one minute, maybe five minute kill time, but typically they're one minute to two minute kill times. Let it fully dry. Then you're probably gonna have streaks from the cleaner on the actual glasses part. Once the kill time is

completely done then you can run those glasses under water to get rid of the streaks and just wipe that off with like a paper towel. But you gotta let the cleaner do the full kill time first and then sort of clean off those streaks. Gloves should really never be reused and luckily I have not heard of any places making people reuse gloves. Safety with masks, again, as I've already said, surgical masks are fine. If the person is not COVID-19 they're also fine to put over an N95 mask to help keep it clean. They are not good enough on their own for a patient that's COVID-19 positive that's still within that initial 10-day window. In that case, you have to have an N95. It's been proven that they are not enough, right? So once they're past that 10-day period then a surgical mask should be fine because again, they're going out into the restaurant or the grocery store or whatever, but if you can have an N95 still it's great because you're in close contact with them. Really important to remember not to touch any of the equipment, the PPE, but especially your face mask while you're wearing it. If you do just do hand hygiene again. Some of the equipment management.

So your stethoscopes, blood pressure cuffs, all your bags, your weights, computers, everything you can leave in the car, leave in the car and this is for all patients, not just those that are COVID-positive because we just don't know if we're walking into the home of somebody that could be COVID-positive and just doesn't know yet. So anything you can leave in the car, leave in the car. Your bags or equipment, bring something in to set it down on. There's a lot of cool strategies going on out there from different home health therapists. One of the things that I had kinda talked with some people about early on was just cutting a little piece of tarp. And then you could put the tarp down, put any of your stuff down on top of that. And then when you go to leave, you fold the tarp inside of itself, stick it in a Ziploc baggy, and then you can later disinfect that. Some people have found that they wanted to do newspaper and they'd put newspaper down and that way the newspaper could be thrown out in the patient's house. Other people have found different kinds of plastics. One person I talked to would actually bring theirs in a garbage bag. So they'd put a garbage bag down and

set all their stuff inside of it. And that way when they go to leave, they can take all their stuff out and the garbage bag gets thrown out. So whatever you wanna do to help sort of protect your stuff from having to sit on one of their surfaces works great. Anything that can be sanitized, sanitize it and disinfect it and use whatever your agency recommends. Typically, as I said, there are bleach or alcohol-based cleaner. Your pulse oxes this is where we're having a little bit of a problem because some of the finger ones like the picture I have on there, they are not allowed to use an alcohol-based cleaner with them because it clouds over the screen or the glass between the light-emitting diode which is what reads their pulse ox. So you really have to check with the brand or the manufacturer of the brand that you have to see can you use an alcohol-based cleaner on that?

Otherwise you may have to not use your own pulse ox and see if the person can get their own. Some precautions for the patient. Scheduling, you just, may or may not be handled by you but again, you wanna try to schedule the most at risk patients in one day or early in the day. So these are the people that are immunocompromised, have a lot of comorbidities, much older, anybody that could be at risk for really getting COVID-19. Try to put them all on one day together or try to put them early in the day.

Anybody that is COVID-19 positive or you suspect might be, try to put them either on their own day or towards the end of the day so that way you're sort of spacing out where you see those patients so that you're less likely to be a vector for those at risk people. And as I said before, really clean that equipment well and I think we all know this as therapists, so just being reminded of that. Patients with COVID-19, you wanna see them the least amount of times possible but really still provide quality of care. If you can do telehealth, that's great but a lot of our patients in home health you can't do that. What are you seeing them for? Well, health and safety and mobility, getting up and walking across their house. Well, you can't treat them from home through telehealth going, okay, now stand up and walk over there when they're supposed to

have an assistant to walk. So you might need to physically be with them because that's what you're treating them for. But think about, do you really need to see them four times a week? Can we maybe get by with two times a week? Because then again, it's less likely to be a vector. Now, once they get two or three weeks after their diagnosis, now we might bump up their frequency and really get them more. You also wanna schedule them around their fatigue times or their environmental temperature fluctuations Anything like that, get an idea of are they really tired in the morning or do they get more tired as the day goes on, those kinds of things. Typically with restricted disorders, we don't actually teach energy conservation, we teach the person to be very active. But in these patients because their endurance is so involved, we're actually gonna teach patients with COVID-19 some energy conservation techniques. We want them to be very active and so we're still gonna give them home exercise programs, we want them doing activity, but their dyspnea and fatigue are gonna continue for weeks and sometimes months after their initial symptoms and hospitalizations. So we need them to realize how to get through their day.

So you might talk to them about home setup, how they space out their activities, what kinds of equipment or oxygen are needed, how to minimize some of those stairs, all those things. You also wanna educate on how that endurance might cause them to feel moderate to severe exertion with activities that used to be daily. Somebody used to just walk to their end of the driveway and get the mail like it's nothing, now they're so out of breath and tired when they get back. Just educating them that that's because of the virus and that it's going to take time for that to recover. So it's important that they don't push beyond what they can tolerate. They also need to learn how to monitor their exertion levels and it's good to use exertion scales. So I gave the Borg RPE Scale, the zero to four dyspnea scale or the Borg Modified Dyspnea Scale. Any and all of these are great to use with patients and I sort of circled where you want them. You always want them to feel like they're working a little bit but not too hard. Some of the PPE protection just kinda going back to this again from protecting the patient standpoint.

Both the therapist and the patient should wear masks throughout in-home treatments. The patients should wash their hands immediately after finishing PT for the day even if you've disinfected all your equipment. There's always that slim possibility so the patient should wash their hands as well. And remind them about any social distancing, avoiding crowds, all those kinds of things. Wanted to do a quick general note about oxygen. Many, if not most of the patients with COVID-19 will require some supplemental oxygen. These are the patients that had been in the hospital and are now coming home. So the goal from us is to wean them down and off that oxygen as much as possible. So we do have to watch the oxygen saturations pretty closely. The problem here is that some of the preliminary research we're seeing shows that the pulse oximeter may underrepresent how much oxygen is really in the blood. Meaning the pulse ox might say the person's at 95% but really their PaO2, so the amount of oxygen in their blood is really low.

So they're still not gonna get good oxygen delivery. So use the pulse ox because it's really the only thing we have to use to really monitor their oxygen level but keep in mind their other symptoms and what they look like. If they're subjectively saying they're really short of breath, you can see that they're exerting themselves even if it says they're 95, realize that it might not be a good representation of how they're doing. So use our clinical judgment along with that.

And though it's not specific to the COVID-19 virus, we do have that a group out of the cardio-pulm section published the Practice Guidelines on Supplemental O2, those are actually gonna be updated in the next year or two but it's still a great reference. And so I gave you that reference too to help with some of that oxygen monitoring and how do you help wean people off of that oxygen. And some other things I just wanted to kinda give you as far as that supplemental oxygen is, you do wanna ask, did the patient use oxygen prior to their diagnosis? So if they already did, obviously they're gonna use equal to that and possibly more now, and they more desaturate. They may desaturate

more now quickly. But most of the time they hadn't used oxygen before this so we're trying to wean them off of it. As I said, what works great is if you can get an oxygen titration order from the doctor. So instead of the doctor just sending that order that the patient requires two liters of O2 or four liters of O2, whatever it is, see if you can get and this is a sample of one that I use with patients. See if you can get the doctor to sign something like this where that very last bottom box. I'm trying to see, where did my pointer go? There's my pointer. This right here, if you can get the doctor to do that one, this will allow you to titrate that to maintain their oxygen saturations. And so this way you can say that the patient might start on two liters but then as their oxygen levels drop, you're able to put them on three liters. Or tomorrow you come in and their oxygen levels are staying high, you can drop them to one liter. So if you can get that titration order it really helps you use your clinical judgment that much more with the patient. And then safety this kinda goes along with independence. Some of it's not really new from what you're already doing but again, it's specifically thinking about it. You really wanna look at what are those safety concerns?

Is it more mobility? Is it more their endurance, their balance? Is it that they have cognition and endurance issues? Is it their strength? And then address those specific impairments to help really address some of those safety concerns. Talk to the patient about monitoring vital signs and other symptoms. You know, they might not be able to understand how to take their pulse or they might not be able to accurately take their pulse, but they can accurately understand that I feel like I'm working really hard right now and maybe I need to back off. Use standardized tests, use your interprofessional collaborations. You're probably not the only person going into the home to see them, so, talk with your OTs, your nursing staff, your social workers, whoever else it is going in there to kinda work together on the safety in the home. And our job now is keeping people safe at even lower levels than they used to be before because a lot of these patients that we're seeing in home it's because they wanted to get them out of the hospital quickly or they didn't even wanna send them to the hospital. And so they

probably have more safety concerns than some of even our regular home health patients. We had a question, do you need specific orders that indicate okay to wean off of O2? Typically you won't need that because if you have that titration order, you'll be able to just wean them down to nothing because their oxygen levels are staying above 95%. And when I have them fill that in, I would have them in this section right here, right zero liters to whatever the maximum is, say, four liters. And that would allow me then to titrate them down to nothing but you also can have the doctor write to wean O2 as able and do that way too. All right, so I am now going to turn it over to Rachel but really quickly before I do, are there any other questions from my section that people may have been kinda hanging on to that they wanna ask? If you come up with other questions that as Rachel's going through information, if you think of other things that pertain to stuff that I talked about, you can still ask it and we'll address it after Rachel's info. But if people have questions right now before Rachel takes over, I can answer them now. Okay, well, I don't see any then so I'm gonna turn it over to Rachel and she's gonna really get into some of the evaluation and intervention and then she'll also do a case study at the end of a patient she has seen in home health.

- [Rachel] So I'm gonna be addressing specifically our Medicare population since that's the majority of the patients that we're probably seeing. Keep in mind, even with a COVID-positive patient or a patient who is in the process of being tested for positive, or is recovering from COVID-19. They still have to meet the Medicare criteria for receiving skilled therapy in their home. So they have to meet these criteria. They have to be confined to the home. They have to be under the care of the physician. That physician needs to sign off on that established interdisciplinary plan of care. They have to be in need of either skilled nursing care on an intermittent basis or PT or speech, or have a continuing need for OT. Although we do know that during the pandemic there were some emergency rules that allow for our OTs to do start of cares and some different regs on who can sign off on the face-to-face and the face-to-face can be remote. So like Pam said, doing that telehealth although just keep in mind, Medicare is

not covering home health telehealth visits. You can still do them and I think they're a good clinical practice for those patients that need that and you can't get into their house, but that it does not count towards their visit numbers and you may be at risk of triggering a LUPA on that. So, chapter seven is your go-to guide of the CMS conditions of participation. These are the general principles and I talked about this a few weeks ago as well that the therapy services have to be complex and sophisticated. Those are the two words I really want you to remember. The services have to be complex or sophisticated or the condition of the patient has to be complex so that the only clinician that can safely and effectively do this work is us, the therapist or the therapist assistant. So, what that means is just because you, as the PT or the PTA are going in and doing the visits, that doesn't automatically make it skilled. If it's repetitive, if it's non-skilled, if a non-skilled personnel could do that treatment at the same level, then it's not skilled just because you're going in there.

So you have to be really critical of yourself, am I providing complex and sophisticated treatment and is this patient complex and fragile? And so I would argue based on the presentation that Pam showed us in the first hour of this, that yes, these patients are quite complex and potentially fragile, and they do require the level of sophistication and skill that we possess. So our prior level of function. One of the things Pam mentioned was were they on oxygen before? That's a huge change in their prior level. And then do they know how to manage that oxygen in the home? Is there tubing all over the place? Is the tubing long enough for them to access all the areas of the home. So that's something to know if they're a new oxygen user. But really our prior level of function is the bread and butter of why we're going into the home. Medicare tasks us with the mission of trying to get their current level back to what their prior level was. So we really need to be specific. Were they going out of the house regularly? What kind of device were they using? How far could they walk before they needed to sit down and at what speed? So just because they were a community ambulator and they were independent for that doesn't mean that it was at a functional speed and we're gonna

talk about gait speed a little bit later. Were they driving a car and how did they spend their time? So that's one of my favorite questions to ask the person or the person's families. Tell me about a typical day before you got sick, before you were diagnosed with COVID and went into the hospital or tried to recover at home, how did you spend your day? That gives me a lot of insight to what their prior level of function was and what responsibilities they had. We have to show a difference and I would argue that for the majority of these COVID patients we will see them if therapy is being ordered. If they are the mild COVID-positive cases with minimal symptoms we probably haven't been referred anyways. So we wanna really paint the picture in our evaluation of who this person is, how have they spent their time before we met them, and then the rest of our evaluation is gonna be the current level of function. And then we're gonna really spell out for anybody that's reading this what the difference is and we're gonna really highlight those functional changes. Some of us have been in this home. This is a generic home from the internet but we all could spend some time rehashing stories of this home.

And so, we know that the person living in this home potentially may have slower than expected progress because the environment is a barrier and we have to spend time talking about how to arrange this room and the rest of the home to make it more accessible.

And like Pam said, to make it more efficient so that person can move around without getting as fatigued. This would be very tiring to try to navigate through to get to that random microwave that's on a bookshelf behind four feet of clutter and it may take some time to get the person to acknowledge that some of this needs to be changed. So we understand the connection between some of these environmental factors and the person's functional independence in their home. More so, obviously this is a unique problem, problem's not the right word, but this is a unique challenge compared to the other environments that can be structured, that are set up in a more functional and

accessible way. So this can become part of our treatment strategies as well, with our COVID patients. Working on standing, dynamic balance, working on dual task training where they're talking about how they're gonna move X, Y, and Z working on obstacle navigation. So like Pam said, we have to be monitoring our vital signs. We should be doing this as best clinical practice with all of our patients, but it is imperative that we do it with our COVID patients. We have to know what medications these patients are taking so that we can recognize that some of those may have a pharmacological impact on their vital sign and their vital sign response to activity. So what I've got for you on the next slide are parameters from three organizations, we've got the ACSM, the ACVPR, and the APTA. So these are the parameters that these three organizations have said on the left hand side we should not be starting exercise and we should not be doing any of our outcome measures or more strenuous evaluation testing if their parameters are on these columns. And then there's the second, the right hand column show when we should be stopping exercise.

So hopefully we're all in a good practice of assessing vital signs at the beginning of our evaluation and visit but how many times are you reassessing the vital signs throughout the visit? So we need to be doing it before, during, and after, multiple times during whenever we think there's the potential for a physiological response to the activity that we're doing, and documenting all of those changes. That also shows the skill because we may be changing what we're doing based on our interpretation of those vital signs, and we are the ones that can do that not a non-skilled professional, not an aide, not a family member. The other thing they use this information for is like Pam said, communication with our other disciplines. So we can be giving feedback back to the nurse about where their vital signs started, how they responded to activity back to the doctor. If we are trying to titrate or wean the supplemental oxygen and they are able to respond appropriately to light intensity activity, and we wanna try to start bumping that up to a moderate intensity. Those are the skills and the decision making that we make as clinicians. So this is a handy little chart that I have printed out and I keep on me

'cause I don't have all these memorized and it's something that I can reference as I'm doing vital sign checks and look, okay, we're still in a good range and I can communicate that to the nurse as well. Sometimes the nurses get a little nervous up in like the systolic BP is like 160, 170 and we'll call them and say, "Hey, just letting you know, Mrs. Jones has a BP of 160 over 100." And they'll say, "Okay, thanks for letting me know. Make sure you don't exercise Mrs. Jones today." And we've got the support to say, you know what, at that range it's still okay to start exercise. We'll be monitoring her and it's okay. Keep in mind that there are a lot of medications that can affect vital sign response and so we may wanna use one of those exertion scales that Pam showed the RPE or Borg Scale If we don't think that the pulse is gonna be responsive to activity. The other thing to keep in mind for our geriatric population is to know this Beers Criteria. So, there are a whole list of medications that our older population respond to differently and so, it's important to know some of our home health patients have these medication lists that are pages and pages and pages long.

And it's a little bit overwhelming for us, it's a little overwhelming for them. So knowing that this is out there and you can pull up this list and you look at it with the patient, say, "Hey, you know what, I see that you have like five medications that are on this list as potentially inappropriate." It doesn't mean they shouldn't take them. We're not pharmacists and we're not prescribing physicians but it can start a larger conversation about that, referring that patient back to the physician or the pharmacist, or even trying to find a polypharmacy clinic. We have one here in Central Ohio that's really neat, patients go to it quarterly. And it's an interdisciplinary clinic that just looks at the list of medications that a patient is on and tries to reduce the list, or just ensure that everything is appropriate. So now we're gonna talk about outcome measures. This is a passion project of mine, I was involved with the Home Health Toolbox Version Two which was updated and published in February so I would encourage any of you if you're a home health member of APTA, it is free on the website. I believe it's $25 for non-members. It's an electronic document so you can download it and keep it on your

device. I've also presented on a core set for the neuro patients which I presented a few weeks ago. We now have a core set of outcome measures for the COVID-19 population and I was really honored to have been the home health representative for this group. So there were representatives from every section at APTA from cardio and acute care to private practice and sports medicine, and pediatrics all trying to come together and decide what are the constructs that are most affected by COVID-19 and how do we wanna best measure them to communicate across settings how these patients are progressing through their disease and recovery. We're using it for research, we're also using it for evaluations and treatments.

So we're gonna talk about what's in that core sets, but just keep in mind that outcome measure collection as a concept is an important component of PT practice. It helps us use a common language to determine if the interventions as in the patient's plan of care are effective and appropriate And then we can measure that data to have that conversation with the patient. And we know the validity of some of these outcome measures and the correlation to other functional tasks is really important. So the first thing to keep in mind is the importance of the zero. So like it says on the bottom, if they're unable to do the activity but you have a goal in that construct, then we wanna document a baseline score of zero.

So this helps to show the progress. So instead of just not doing the test and not documenting it because say they can't complete a five times sit to stand yet, you're gonna document that as a zero. So the next time when you go and reassess them with that outcome measure, you're gonna hopefully be able to show that they can do more than zero and that kind of shows that progression more than not having captured that zero at the start. Hopefully that makes sense. So when do we wanna collect outcome measures? Ideally we get three data points. So we get it early in the episode which helps to establish our baseline. Periodic reexamination, so for a lot of us in home health, that's at the 30 day-mark although if you're gonna have a shorter care plan, I

would argue that that periodic reexamination would happen sooner than 30 days, and that'll help us kind of change directions. So we may have had an initial care plan, we thought the patient was gonna progress a certain way. We do this periodic reexamination with the outcome measure collection and a few constructs, they're doing really well, they're right on track and then a few others. We see that they're not, that can help us change our course of treatment and also really shows the skill, right, 'cause we're taking this data, we're analyzing and seeing what those results mean, and then applying it to the care plan. And then at the end of the episode to help show what the effect of the physical therapy services, of what they were.

So ideally three points, like I said, keep in mind where I say early in an episode of care, I do not say eval. So we're gonna talk about that but you do not have to get everything done on evaluation. I know we're all crunched for time especially if you're doing a case open and you're doing an oasis and a consent and a med review, you may not have time to do four or five outcome measures. It doesn't have to happen that first visit. It can happen within the first few visits.

And you may decide that you're not, if you typically delegate your patients to an assistant after the evaluation, you may decide as the evaluating clinician, hey, I'm gonna keep this COVID or post-COVID, recovering COVID patient for one or two more visits after the eval because I still have some assessing that I need to do with them before I turn them over to a PTA. So not everything has to be done that first day. We just want it early on. There is a question about PPE and the COVID patients so I'm gonna leave that for, at the very end when Pam comes back on the mic. Okay, so our best practice is to choose the appropriate outcome measures and we're gonna talk about what those are. Retesting, continual retesting, and then the other thing to keep in mind is that it is within the scope of practice for our PT assistants to be completing outcome measures that evaluating therapists are directing them to do. So what we've been doing in my practice is having the, if the PT assistant has seen our COVID,

post-COVID patients, they are doing the outcome measures on the visit prior to the reassessment or the visit prior to the discharge. This helps us accomplish two things. One, if we miss the discharge visit for whatever reason, we still have that data. When I was going back through before we started doing this, we were missing a lot of those terminal endpoint data because that last visit was getting missed. The patient decided they didn't wanna participate in the last visit because they were finished or something else happened. So we're collecting that data.

The other thing that frees up the time for the evaluating therapist at that 30 day or whatever that re-examination mark is to discuss the findings with the patient, discuss what they mean and collaborate with the patient on new goal setting, new care plans, discuss maybe what some of the barriers to the progress are. I have a lot more time to do that on my reassessment visit if the PT assistant has performed the outcome measures on the previous one. So it's a win-win and it frees up, we get a lot more done with the patient on my reassessment visit. So here are the outcome measure recommendations.

They are available for free on the APTA website. The inclusion criteria for these were something that was gonna be applicable across the continuum of care. So we needed outcome measures that were appropriate to use in the acute care setting, even the ICU room. So limited space, lots of PPE, patient on isolation, into the skilled nursing facility, into the home, into the outpatient clinic, and even appropriate for our high level athletes who have COVID or have had COVID, okay? So we put together this core set of outcome measures to describe the trajectory of recovery. So performing, looking at the severity of their illness, their past medical history, and just using our clinical decision making to look at the situation and decide if it's appropriate to perform these outcome measures. So, there are some risk estimators that looks at a patient's individual cardiovascular risk status prior to exercise and endurance testing and I've got the link there. And you can enter in some of their chronic medical conditions and

other aspects of their medical presentation to determine their risk for that. Like Pam said, assessing for their risk of blood clots, and then looking at their cognitive function, if they are alert and oriented enough to be able to participate and understand the directions. Again, this is for across the continuum. So we're making recommendations for clinicians in all the settings including the ICU. And you see my big red box which is monitoring their vital signs throughout because obviously we know there's a high prevalence of cardiorespiratory complications in the COVID population. So here's the core set, we identified five constructs that we thought were most impacted by a COVID-positive diagnosis. And they are cognition, quality of life, strength, function, and endurance. So we're gonna break each of these down, each of these tests down. So the first one is the SLUMS.

This is a test for dementia. It usually takes about seven minutes. It's clinician-administered, you hopefully have some familiarity with it. Now, this can be administered by another discipline if OT or speech are also involved with your patient. You guys may divvy it up and say, "Hey, I've got a lot to cover in PT. Can one of you guys do the SLUMS because it's part of the core set of the outcome measures for our COVID population and we really need this score but I don't have time. So it certainly can be done by another discipline.

And these are the norms looking at mild cognitive impairment. And so you want to know how much education your patient has as well. Obviously we don't have norms for anything related to the COVID population so we pulled norms for older adults. The next one is called the EQ-5D-5L and this was a test that was very new to me and several of the other clinicians that were involved in it but it's pretty well researched globally. So that was one of the reasons why it was selected because it will allow American clinicians to communicate with our colleagues around the world who are seeing COVID patients. And there's two parts to it. There's these five dimensions and this is a patient-reported outcome measure which is what I really like about it too. We

don't do a whole lot of patient-reported outcome measures in home health the way they do in outpatient. So this really gives us some insight into how the patient or the patient's family is feeling about their current quality of life. If they do not have adequate cognition, it is still a valid measure if you have a caregiver or a family member help the patient. You can also leave the questionnaire with the patient on eval and then pick it up at the next visit, or have your therapist's assistant pick it up at the next visit. That can save some time as well. So for each of the dimensions, the patient's just gonna mark how much problem they're having.

So for example, anxiety and depression, is the patient having no problems, slight problems, moderate, severe, or extreme? And they just circle it. And so what you get is a number from one through five for each of these dimensions and then you basically code it in that order. So everything's in the same order. So you may have a patient that's a three, three, two, one, five. And if you write it out that way then other clinicians who are familiar with the test will know that means on mobility, they're having moderate problems, self-care they're having this amount of problems. So it can be documented that way.

The other part to the EQ-5D-5L is a visual analog scale and it's from zero to a hundred. And the question is how good is your health today? And a hundred is the best health and zero is the worst health, and they just have to circle it. So this is the link for it. It is available in multiple languages. The other criteria for all of these outcome measures was that they were free and had open access. Okay, so keep that in mind. So all of these are available online for free use to any clinician. So this is really nice to start having a conversation too with the patient because you may find that they're really impaired on some of their other outcome measures but they feel pretty good about their health right now because maybe they've come out of ICU and acute care and rehab and they're back home. So compared to where they were, they've got a pretty positive outlook. Now you could have the alternate which is they're doing really well

functionally and you praise them up and down but their mood and their self assessment of the situation is that they're in pretty bad shape. Okay, so that can help have a conversation and then we can track that over the therapy and see how their perception of their own health is improving or not improving with the therapy in the home after their COVID diagnosis. So the MRC-SS this is a summary score basically of manual muscle testing. So, we're not gonna go into a whole debate about the validity of manual muscle testing but this is widely used to demonstrate the acquired weakness in ICU which Pam talked about is something that we're seeing in a lot of our hospitalized COVID patients.

So the cutoff score is 48. So it's the five-point scale that we all know for manual muscle testing and there are three movements in the uppers and three movements for the lower. So the total score, the best score would be a 60. Anything less than 48 would indicate acquired weakness in the ICU. There's a nice video instruction on how to perform this and then we just wanna document it. Our task force is also recommending that you document the raw score so that you have a score out of 30 for your uppers and a score out of 30 for your lowers.

Because what could happen is that composite score may not give us the real picture of what's going on with the patient. And if they've got a lot of upper extremity involvement, we also recommended some secondary outcome measures such as the DASH or the quickDASH which again is a patient-reported outcome measure may indicate lack of independence with ADLs, get the occupational therapist involved as well. The Short Physical Performance Battery, you guys may be familiar with this. This is developed from the National Institute on Aging. It's got really good predictive validity for falls, disability, decline in ADLs. There's a whole section on the SPPB in the Home Health Toolbox in the new one. So if you've looked at that at all, there's some good, all the validity, reliability, all the psychometric properties for that are in there. Somebody has already done that work for you so you don't have to. But it is valid for lower body

strength and predictive for falls. So we're looking at gait speed, we're looking at balance, and we're looking at their ability to perform a sit to stand. There is open access on the NIH website, there is an entire training CD on how to perform the SPPB. I highly recommend you download it, watch a few of the videos, it's not that time consuming. But the most important thing with outcome measures is that they have to be standardized, right? Because we're trying to compare to norms, we're trying to compare across time points, and we're trying to compare to other clinicians, with other patients potentially around the world. So we all have to be performing these outcome measures in the same way so that we are truly comparing apples to apples on this. So that means that the chair height has to be the same, the instructions have to be the same. The timing of when we start and stop the stopwatch has to do the same, and we have to document any deviations from that.

Okay, so this is the Short Physical Performance Battery. This may look a little familiar to you, this balance test, it's also the balance test that's on the STEADI, the CDC STEADI. So this is pretty quick and pretty able to be completed in the home. Our gait speed test, we need four meters. We need that little ramp up speed and then you're assigning a score. Now my EMR has the SPPB built into it so all I have to do is enter in my raw data and it'll put in my points for me.

You may not be so fortunate but I would encourage you guys to give feedback to your agencies or to your EMRs to start getting some of these outcome measures included in there. And then we've got the chair stand, okay, and you can see the directions for this. So this is a nice thing to maybe print out, throw in a plastic sleeve and keep somewhere handy just so that you know you're being consistent with your testing. So this is the equipment that you need for the SPPB. They can use an assistive device and they can use their arms to do the chair stand, which is different than the 30-second sit to stand or the five times sit to stand. But when it's done as a component of the SPPB, you can use your arms. Okay, so here are some norms and some cutoff scales. So it's

predictive for frailty, predictive for falls, predictive for re-hospitalization. So this again helps give us good support for why we're seeing the patient in the home, maybe why we're ordering the number of visits we're doing, like what Pam said. We're trying to keep these patients back out of the hospital, right? Or keep them out of the hospital in the first place especially with their COVID diagnosis. And then here's just a goal example. So you wanna look at, for any of these outcome measures, what the MCID is which is the clinically important difference. So we don't wanna just use random numbers, we want to use a number that has already been researched that we know is meaningful. So on the SPPB for example, it's one. So if they go up by one point, we know that that's important. Okay. Then the last one for endurance. This is the two-minute step test. This was chosen for space reasons and isolation reasons. Our recommendation though is as soon as that person is either able to or you have the space, the resources to do it is to do the six-minute walk test, that is the gold standard for endurance testing.

But the two-minute step test takes up less space, it's faster and able to be completed in an isolated, in an isolation environment, right? So we need the resting vital signs. We measure the iliac crest and the knee joint space. Place a piece of tape. We gotta have that person raise their knee up to that mark and do the two-minute period. We're only counting the right knee, okay, and we only do it once. And then we wanna document that number and then track it over time, hopefully three times. They can use upper extremity support so they can be holding onto a walker or a counter or a railing, or you providing that support, but please document that because that may show some progress. So maybe they still get the same number of steps on their two-minute step test on eval but then at 30 days they can do it without any upper extremity support, that would show progress. They have to keep that knee go into that same height, obviously it will make a difference to their pace, and we don't want them to sit down during this test. They can stop to rest but they cannot sit down or the test stops, same as the six-minute test. So here's some normative values based on age and gender. So

you may wanna use these numbers as you're setting goals. So that is the core set and when I talk about my case study, we'll talk about how we kinda implement in that house. But couple other things on the eval, we wanna be aware of some of these social determinants of health and we are really the eyes and ears in their home. And we as home health clinicians may be exposed to this more than clinicians in any other settings. So these are the five social determinants of health and we know that instability or insecurity in any of these five areas are gonna lead to increased health risks, disability, increased healthcare costs, and increased healthcare utilization. So we may not be able to fix this but we need to address it and either get them referred to a social worker if your agency has one or other community resources.

And also be documenting this that we have looked at these, and we know that these are potential barriers to progress and may require additional visits compared to a patient that doesn't have some of these unfavorable circumstances. So, like Pam said, there really aren't any published guidelines on visit frequency. We're gonna be using our clinical judgment to decide how frequently the patient's gonna be seen. There was a question to say go back to the two-minute test norms. So, oops, I'm right here. This is this. So this should be in your handout. So it's something that you could print out and then there's the citation for it as well.

Hopefully, that shows you what you need. Okay, so keep in mind, as we've been hit with a double whammy in 2020 of a entirely new payment model in home health, and this is not a PDGM webinar but we know that it's there and it's real, and it affects our COVID patients, just like it affects all of our other patients. Just know that PDGM does not dictate how many visits your patient can receive. And if your agency is telling you that it does, that is incorrect. So, we need to use our clinical judgment and really advocate for our patients and it's gonna be determined based on the difference between their prior level and current level, what their activity tolerance is, what other disciplines are involved, other appointments that the patient has, if they're on dialysis,

all of those factors. But PDGM does not tell us the visit frequency or duration. Goal setting, like Pam said, we wanna prevent complications from COVID. We wanna minimize the impairments from COVID and we wanna try to maximize their function. So we wanna have a collaborative goal setting with our patient and make sure that they are patient centered and that they are meaningful to that patient. So that goes back to the whole question of how did this person spend their time before their COVID diagnosis and do they have a goal to return to some or all of those things? So it doesn't matter if it's important to us, it matters what's important to them. We want the goals to be measurable. So using that MCID or normative values and quantitative tests that we know are valid and correlate to other domains of the person's function. So what kind of interventions are we gonna be doing in the home with the COVID patients? Obviously, we're gonna be trying to build up their cardiorespiratory fitness and we know that there's high level evidence that doing this training can improve their level of disability, walking speed, and capacity, but we have to be careful.

Like Pam said, we need to be monitoring their vital signs, checking their oxygen. But the flip side of that is that we need to be intense enough and if any of you were on my neuro webinar you know this is another passion of mine, which is that we are underdosing our patients in home health, very much on the strength training and on the aerobic conditioning. So all of these charts are pulled from the "American College of Sports Medicine Guidelines for Exercise Testing and Prescription. It's the 10th edition. I bought it on Amazon for about $30. It's one of the main textbooks that we use in the advanced competency for home health. And it has chapters on testing and prescribing exercise for all types of pathologies and patient populations. Of course, there is not a chapter on COVID. So, we kind of need to extrapolate what we know about COVID and what we know about other patient populations to set up these exercise prescriptions. So what I pulled out of the ACSM were the recommendations for older adults and the recommendations for patients with pulmonary disease. We know that pulmonary complications are prevalent in the COVID population. So keep in mind for all of these

domains of exercise prescription that we're looking at FITT, which is the frequency, intensity, time, and type. So once you decide each of those components and you put them together, that's how you get your exercise prescription. So for older adults, the recommendation is at least five days a week of moderate intensity, or three days a week of vigorous intensity. And this aligns with the physical activity guidelines that have been put out. And then we've got the intensity, we can use our RPE or Borg scale on that. We're looking at five to six for moderate, seven to eight to vigorous. That's the amount of time we want it done for but you can break it up into bouts of 10 minutes each. So one thing I would suggest is teaching the patients this physical exertion scale initially, and then letting them guide when they need rest breaks. Sometimes we offer rest breaks too frequently and too soon.

Now looking at specifically at patients with pulmonary disease, it's at least three to five days a week. The RPE is a little bit lower, so keep that in mind and it really just goes to the tolerance. We want to do at least 20 minutes of exercise interspersed with rest periods or lower intensity work. So, keeping in mind that our pulmonary, our patients with pulmonary complications may not be at the same level as our general older adult population and the type walking, stationary cycling, upper body ergometry.

We're a little limited in the home, we don't have lots of fancy equipment but we can still get them working at an intense enough level that we've got to push the speed a little bit or resistance to get them working at this intensity level. Flexibility and range of motion if these are deficits and here's the recommendations for older adults and pulmonary disease. I'm not sure, I haven't done the research to know why older adults have to hold their stretch for 30 to 60 seconds whereas people with pulmonary disease, it's a 10 to 30-second hold for static stretching. Pam maybe can add a little insight to that at the end. She may be more familiar with why that would be but that is the recommendation from the ACSM. Balance, obviously if the patient is having issues with their balance we want to address balance. We wanna get them moving outside

their base of support. We wanna be challenging them enough. Again, just like with the aerobic exercise and the strength training, we wanna make this hard enough. We want them to wibble-wobble. We want them to have to use those ankle hip knee or ankle hip stepping strategies to recover from their loss of balance. We wanna make it hard enough to where we're really seeing improvements in that. Transfer training. I love this research that shows if patients are having difficulty standing up from a chair, we should practice standing up from a chair. It's as task specific as we can get. And really what we're looking for our patients to be able to do a sit to stand without using their hands. We know that's a good indication of lower body strength. We know it's got good validity and correlation with fall risk. Strength training.

My soapbox is to not underdose the strength training. If your patient has full active range of motion against gravity, then we need to start adding resistance. We're not gonna build up strength in that knee by doing long arc quads without resistance to a knee that already has full knee extension, okay? We need to be adding resistance. Either ankle weights, hand weights, bands, weighted vest, kettlebells, whatever you want. Again, be aware of what your isolation restrictions are.

If you're going into a home with a patient that is COVID-positive, you may want to limit what you're bringing in and out sanitizing everything, or have that person provide their own equipment that you're using. I don't bring in any of that extra resistance stuff into a home with somebody who is COVID-positive or suspected of COVID-positive, but we try to use things that are already in the home. Boxes of stuff, stuff in the kitchen. But I would argue that like the soup cans are not heavy enough. So this is the strength training that we should be doing for older adults and adults with pulmonary disease. Free weight or body weight exercises for those with pulmonary disease but it needs to still be at that 60 to 70% of the one rep max. So establishing a one rep max when you do not have big heavy weight equipment in the house. We know that 80% of one rep max is 10 reps where the form deteriorates in the last one to two reps. So if your

patient is doing 25 reps of something and they're looking good the whole time, then that is not anywhere close to 80% of their one rep max, okay? And research has shown that we need 60%, that's the minimal overload we need, okay? So, we've done the research. We know 60% of one rep max is 15 reps at an RPE of 12 to 13 with form deteriorating in the last one to two on the 15. So that's what we should be shooting for. We can do this in the home. There's no excuse for us not to be doing this in the home just cause we don't have the big fancy equipment that they have in outpatient. So and I've got some suggestions here of ways to create that resistance. Okay, so using that RPE or looking at their form will help to determine. We wanna allow 24 to 48 hours rest for the same muscle group. So that home exercise program that you're giving that patient and telling them to do it twice a day, and they're the same exercises, it's not intense enough. It should be of an intensity level to where they need to be alternating between muscle groups on the days, okay?

Then we can start adding in power where they're moving quickly through concentric and then slowly eccentric. And then we can get really functional where they're using resistance when they're doing steps and tapping and kneeling, and kneeling and reaching. This is gonna show our skill because their strength should be changing as they continue to recover from their COVID and as they get stronger with their therapy. So if we're changing the reps, changing the resistance or like Pam said, they're having a really strong day and doing a lot, and then the next time we see them, they're having a real rough day and we're having to back them off. That really shows our skill compared to somebody else who might be doing, who has knowledge in strength training like a personal trainer but isn't assessing that physiological response and integrating and analyzing the whole picture to determine what is the best and most proper dose and intensity for their strength routine. Okay, so these are the parameters and recommendations for strength training. Hopefully you've seen this graphic before. This is the physical activity for adults and older adults. I would argue that there's a lot of adults and older adults who prior to their COVID diagnosis weren't meeting these

guidelines. That's something we need to know in their prior level but we can also be educating them about these numbers and where we wanna get them to. Okay, so I don't see any questions right now so I'm gonna move into the case study for a few minutes. But what I want you to know overall when you're working with these COVID patients in the home is that we need to be documenting everything and writing out our thought process. This is true across the board but especially with this novel virus because this is gonna, we're all in kind of uncharted territory here. So the more documentation we have, the more knowledge we gain about how to work with these patients, especially in the home settings.

So if you're changing the care plan based on the outcome measure data, document that, show the reviewers and the referring physician and your agency what your thought process was and how you are doing. Okay, so here is my case study. I prepped for months to be ready to go out into the home to see COVID patients. I got my PPE, did all my training, all of that. June 2nd, I'm in central Ohio if that gives you guys any insight into our trends.

This patient, I evaluated her on June 2nd. She was an 85-year-old Somali woman who went into the hospital April 26 with a COVID diagnosis. She was intubated in the ICU and spent 14 days there then went down to a step down unit, got discharged May 27th. So four weeks in the hospital, 85-year-old woman, right? So, I was going into this eval not having real high expectations, right? We know that the outcomes, what I had seen were not good for this age and for this amount of time being in the hospital. We have a large Somali population in Columbus and a lot of the agencies I work with are immigrant-owned so it's fairly common for me to see Somali patients. She had tested negative twice prior to discharge so she truly was a post-COVID patient. I don't have a lot of her hospital paperwork because I don't work for the hospital home health agency. Her only other medical history was that she was a type two diabetic. She lived alone in her apartment, walked without a device. She would walk to the grocery store, pick up

or get groceries, walk home. Did all of her ADLs and IADLs. She's been in the States for 20 years. No history of falls. Really involved family. Several generations of family lives nearby and are now staying with her. So when I got there, I immediately checked my vital signs, everything looked pretty good. She did have some leg pain that she had reported not having before which was impressive or 85 years old. She was mod assist with her transfer, she was only able to walk about 15 feet and she was not able to go up and down the stairs to get in and out of her apartment building. So here's a couple of the insights I wanted to share with you.

The first was I used the core set with her as a case study for our task force, this was when we first gotten it together. It took me 45 minutes which is not really doable, we know that. I think that most of the time was due to the language translation. The EQ-5D-5L and the SLUMS took a really long time. I do now have the EQ-5D in Somali because there's official translations in multiple languages. So if you do have non-English speaking patients, I would encourage you to get it in their native language. However, the feedback from the patient and the family was that there are multiple dialects of Somali and the Somali questionnaire that I had didn't make sense to them. And so we've gone back to the English version with her family translating which is not ideal but I documented it that way and gotten reassurance from our researchers that the EQ-5D will still be valid. And then we did the SLUMS initially as well.

I did recommend a frequency of three times a week for two weeks, two times a week for five weeks. Given her high prior level of function and she was doing decently and stable on the eval so I really wanted to get in there, keep her safe and at home. But as we know with insurance, those visits were not approved. I got an authorization for one time a week for seven weeks. So that meant I had to do a lot more education with the patient and the family of things to do in between all my visits and I did some phone check ins with her family in between those visits. So we set goals to be working on transfers, bed mobility, gait training, balance, home exercise program, and stairs with

the education to the patients to be doing daily walking. We did standing exercises, high reps and no resistance just to build up her endurance and working on her sit to stand, to improve her independence with transfers. As an example, this is what the SLUMS questionnaire looks like. It asks you if they're alert and it asks you the level of education. So my patient has a fourth grade education. So, that puts her well under the high school level. And so you can see here how she scored. You can see her clock drawing and you can see some of the shapes. Now I do think one of the limitations of this was the language barrier especially in telling this story. But just for reference. Here's her scores on the core set. So, as you can see, I've got each test on the left. I've got her eval, I've got visit four and then visit eight. So you can see what I was talking about with those five-digit codes on the EQ-5D And then this is the visual analog scale on how well she thought her health was.

So we're not seeing much change on those five constructs, the mobility, the self-care, the anxiety, depression. She actually got a little bit worse on that second construct on visit eight, but look at her self-report of her health. So from best health ever is 100%, worst health ever is zero. She went from 35 to 45 to 80%. So she feels like she is 80% back to the best health she could imagine. So that's really nice to see. This is her strength and I've got here some timed things of how long it took me to do it. So initially she scored a 36 indicating ICU-acquired weakness and here's her upper and lower extremity scores. One of the issues she was having was with her hands and her wrists because she was in some restraints and some resting splints in the hospital, so she got real tight. Those have gotten better and they got significantly better by visit four and then she's reporting to me that it was, that it completely resolved by mid July. Here's her short performance or physical performance battery that took about six minutes. And again, we wanna have raw scores for all of these. So she started at a three out of 12 and then here's the breakdown. Her balance score, her gait score, and her chair stand score. And then you can see how she has improved. She made a big jump in that first month and then not so much of a change in the next few weeks. So she's

already at the ceiling for the balance and the gait so we're really just working on chair stands. So I would argue that at this point we would discontinue this goal and just set a specific five times sit to stand goal because this number, the only way this number is gonna change is if this five times sit to stand score changes. And then we've got the two-minute step test and that took about five minutes 'cause we had to set up and teach her how. On her first day she was only able to do 19 reps and she had to stop before the full two minutes.

And she's made good improvements since then. She still reports that she doesn't like this test at all, she thinks it's very hard and two minutes is a very long time to be lifting your legs up and down. So at our 30 day reassessment her reports to me are still feeling like she's got some memory issues. One of her biggest complaint is sleep disturbance which we see in a lot of post-ICU patients and our PICS patients. So that is something that is affecting her ability to be awake and participate in therapy during the day then that was not an issue prior to her COVID diagnosis. So here we talk about how she doesn't like my two-minute step test but we do it a lot. My feelings on her specifically is that she had a very high prior level of function and very little co-morbidities.

Even for her age at 85 years old, she was completely independent and her only co-morbidity was being a type two diabetic. So, even though she had such a long and complicated hospitalization and was so impaired, she has recovered very nicely in about five weeks of being home. She she's now independent with her transfer, she can go up and down the stairs, and her gait speed has improved. She is a very fast walker and she was a very fast walker before, she did a lot of walking all day. She is also a devout Muslim so she gets on and off the floor several times a day to pray and was doing that before her illness, and is now able to get in her traditional prayer position on and off the floor which she's happy about doing. Towards the end of July she's still having some pain in her knee, sleep is still not improving. So she's following up with

her doctor, they're trying some natural remedies but we know that this is an issue for our PICS population. I am not a sleep expert so I just keep documenting it. She's modified independent for bed mobility and her transfers like I said, including the floor, her gaits, she's not using her assistive device anymore but I'm documenting that she's not achieved her prior level of function and she is still homebound due to the recovery that she needs after the activity. So like I said, I had to get the Somali language version. The PPE that I use like Pam said, I use a surgical mask and a face shield because she is COVID-negative. I also wear shoe covers because her custom is to not have any shoes on in the home and our agency policy is to not remove our shoes. So we all carry shoe covers. Like I said, we treat a large caseload of Somali and other immigrant populations a good percentage of whom are Muslim or Southeast Asian who also have the custom to not wear shoes in their home.

So, I thought she was a good example. I have yet to see the patient that Pam was talking about that is COVID-positive and recovering in the home or continues to be COVID-positive post-hospitalization. While I'm ready to see those patients, I'm also pretty happy that we're not having a huge influx of those at the moment and we still have a lot of hospitalizations, but we are trying to trend down as well. So we're gonna take questions. The first one Jenny says, "Did you mention what vital signs should be monitored for gait training with COVID-19?" So if you go back to the slide that has the parameters from the APTA, ACSM, and the cardiovascular pulmonary rehab section, they look at blood pressure, pulse, respiratory rate, oxygen saturation. I monitor their respiratory rates, their oxygen saturation, and then their exertion levels. Pam, do you have something to add on the vital signs with the gait training with COVID?

- [Pam] No, I think that's good. Again, it's just getting that sort of baseline and then how they're doing during and using that for your modifications.

- [Rachel] And then I would add that documenting that vital sign monitoring and then your response to that in terms of how you're tailoring the interventions speaks to your skill, right? And then it also speaks to the progress. So they may be walking the same distance at the same speed with the same assistant device and assistance level but if their exertion level has gone down, if their respirations have gone down, if their SPO2 stays high or they're on less supplemental oxygen and doing that same task, that shows the progress. But the only way we can show that is if the goal is written appropriately in that fashion and you've documented it that way. 'Cause if you don't, it's gonna look like that patient is staying the same visit after visit when truly they're improving.

- [Pam] Yeah and I absolutely second that. You know, I talk about this a lot with endurance testing is that you want to write quantifiable endurance goals and you can use time two different ways that you can either say, they're now doing an activity for longer and that shows your own advancement. Or maybe they took too long to do an activity before and now they're doing it shorter. You know, if it takes them 20 minutes to walk from their bedroom to their kitchen, that's too long, but now it can take them six minutes, or they could only do something for four minutes but now they can do it for 12 minutes. So kinda like Rachel was saying is really used those quantifiable measures of endurance.

- [Rachel] Right 'cause just saying they can walk from the bedroom to the kitchen independently doesn't really capture the quality of the performance. Pam, do you wanna address this question from Ricardo?

- [Pam] Yeah, for some reason I'm not able to see the whole questions. I'm getting like the first two lines and that's it. And now I can't see Ricardo's at all. I've got that I have patients who were COVID-positive and then and I stop at the and.

- [Rachel] Are you able to read the rest of it?

- [Pam] Oh, here we go.

- [Rachel] I have patients who were, yeah.

- [Pam] Now that moved. It's basically, it looks like it's patients that are COVID-positive. Sorry, it's still kinda cut off for me, there we go.

- [Rachel] Oh, I have that.

- [Pam] So the question is about patients who were COVID-positive come home classified as COVID inactive. Is it correct that I continue to wear full PPE with N95 since they're not tested negative? So it depends on what you mean by the COVID inactive. Typically for us that means that they either did have two negative tests but typically they'll then say that's negative instead. What it usually means is that they didn't test them again or they just keep getting these positive tests and yet the person doesn't need to be in the hospital anymore. And so at that point, I would use those guidelines of how long are they from their initial diagnosis. Now, if you have the ability to still wear full PPE, if they've had positive tests, I would still wear full PPE. I mean, I would wear that as long as you can if the person is still be considered positive. Now, if it's inactive because they're saying it's just been long enough, then if you're not allowed to wear the PPE then don't. I would say if you start going three and four weeks since their initial diagnosis, you probably don't need it anymore but it's usually that they come home and they were still getting these positive tests in the hospital but they don't need to be in the hospital, and a hospital says, you know what? They're not active anymore. Their symptoms aren't changing, let's send them home even though they still keep getting these positive tests. So that's what I'm kinda thinking you mean by that is that yes, if

they're still inactive but they technically are still positive, I would wear it at minimum those 10 days but I'd go at least two, three weeks if you can.

- [Rachel] I'm gonna take Mark's question. He says, "At one point I heard that the homebound requirement was relaxed, lifted. Was that true?" Yes and no. So the homebound requirements are still the same as they are on that slide, where it has to be a taxing effort, they have to require somebody else to help them and those kind of things. What they did say is that that person's, because of that person's risk for COVID that they were a, what's the, I'm blanking on the term. That they were a, Pam helped me out here. Because of their comorbidities, because of their age that they were a patient at higher risk.

- [Pam] Right, the at risk population.

- [Rachel] At risk population, golly. They were at an at risk population that could justify them receiving home health services instead of outpatient where they normally would be able to go to outpatient, but it would be contraindicated because they are at risk for COVID-19. That is the only home bound criteria that has changed. So hopefully that answers your question. Yeah, increased risk for infection. Thank you, Deborah. And Mark says, "Yes, that's what I was referring to does it still exist?" As far as I know it does. I would have to double check with CMS on that but from what I understand all of the waivers and changes to regs that CMS made back in the early days of the pandemic, I'm talking mid, late March, early April, were in effect through when the public health emergency ends. And since the public health emergency has not ended, all of those waivers are still in place. The fact that the face-to-face can be done by telehealth. The fact that the paperwork can be signed by a nurse practitioner. The fact that the OT can do the case open. All of those waivers that got put in place are in place until the public health emergency ends and then assuming that CMS is going to then revisit that. What is the minimal overload necessary for strengthening untrained

individuals? 60% of the one rep max. So our job is to determine where that 60% lies and in home health without having like handheld dynamometry or some other fancy system, we assess that based on exertion, number of reps, and their form. And you can play around with that and scale it up and scale it down. So if you are trying to build up shoulder flexion let's say and you hand them a two-pound weight and you have them do 15 reps, and they do it with great form and their exertion is light, then we're not working at that level. So we need to either change the position that they're in, increase the resistance until we get to that, until we get to that point of 10 reps, deterioration of form on the last one to two reps, and a high enough intensity based on their RPE.

- [Pam] And I'll ask or answer Linda's question. She said, "Is there a limit to how much supplemental O2 you're allowed to use in home for exercise?" And Rachel, you can chime in if it's different in Ohio. In New York state, there is technically no limit to how much O2 you can use in home. It's based on what the doctor has prescribed. In the past, our typical limits for using a nasal cannula, what we consider low flow O2, is really four liters or at the most, maybe six liters. However, COVID through all of those things right out the window because we actually wanna try to use higher levels or high flow oxygen but without the humidity we used to add because the humidity increases the droplets that are then expired that can help spread the COVID disease. So what we'll do is use higher liters of oxygen or flow of oxygen even still with a nasal cannula. So there are patients that might be coming home from the hospital that are going to be on 10 or 15 liters of oxygen. It's not as common, most of your patients still will have that two to six liters but it is possible and there is technically no limit, it's just based on the patient. Typically the higher levels of oxygen they need, the more impairments they're gonna have just because it is so much work for them to breathe and get that oxygen delivered but the short answer is there's no technical limit.

- [Rachel] Yeah, I don't think it's state-specific Amy says, "Would the ideal number of days per week for patient with COVID-19 to perform aerobic activity to improve endurance be same as that noted for pulmonary patients?" That's a really hard question because I had to really extrapolate from the older adult and the pulmonary disease exercise prescriptions in the book and they are very clear in the pulmonary disease chapter in saying that they, it is not for acute pulmonary infections. So yeah and Pam, you can kind of weigh in on this. While we know there's pulmonary deficits with these patients that can be addressed through aerobic exercise, their presentation is not the same as patients with chronic pulmonary disease.

- [Pam] Yeah, that's exactly what I would say is you can do, typically you should be able to do more and should try to do more frequency of aerobic exercise per week because they are not considered a chronic condition. Now we might see some of those fibrotic changes that become chronic but even then they're not at the levels of somebody that has a high level chronic COPD or IPF. And so, they're really more like somebody that had pneumonia or ARDS. They're just at a more severe state a lot of times but they are something that can be recovered. So you do wanna try to give them equal to if not more aerobic per week.

- [Rachel] So I think that would really help us in home health justify our visit frequency, especially initially to try to build up that capacity and keep them safe and stable at home, prevent re-hospitalization and increase healthcare utilization. We can point to some of that research and evidence to support, well, why are you ordering so many visits? Well, ACSM and other institutions have recommended this frequency but this person potentially might have an unstable physiological response and they need the skill of the home health physical therapist to be monitoring and adjusting and modifying that aerobic activity to be properly dosed and monitored.

- [Pam] And Deborah, we're not ignoring your question but I'm gonna skip it for one quick second because Nancy just had a comment that said, "Too bad, most patients are noncompliant with home exercise program." Now, I'm not doing home care right now, I'm doing all outpatient cardiac and pulmonary rehab and I struggle with those same kinds of things with an outpatient. And what I can say, not that it solves all the problems but I really do go to the patients and say, "What are you willing to do?" And kind of work off of that because that way I get more buy in of what we can do how many days a week, because I get it, you're getting told you get to see these patients once or twice a week and yet I'm sitting here telling you you want them to work out four days, five days a week. And who's gonna make them do that? So I just say, what are you willing to do so that we can get you better and then I kinda push that. And I've had times where I make them sign it too. Like I'll make them write it in their own handwriting, I'm willing to do this and sign it just because I make them post it on their fridge or something and say, "Remember when you agreed."

- [Rachel] And then the other question if you were talking about minimal overload, I think I'm assuming that you're asking a similar question to one of the previous participants, which is we're looking for at least that 60% of the one rep max.

- [Pam] And then when Rachel was talking, she had presented about stretching and said, she wasn't sure exactly why ACSM maybe had said a longer time for pulmonary patients. Typically it's related to breathing during stretching. A lot of times when people stretch, they will hold their breath. And so, we might have to limit stretching to a shorter period of time if we have one of those respiratory patients that do that. The other part of it is just what position are they in? Can they breathe easy? So if we've got somebody doing say a hamstring stretch where they're bent over and they have difficulty breathing in that position, they may not be able to hold for the typical 30 seconds, they might only be able to hold for 10 seconds because it makes them too short of breath. So that's why there's that wide variance in stretching with respiratory

conditions. I would say overall with the COVID patients, it should be fairly close to the normal 20 to 30 seconds on a stretch. It shouldn't make them too short of breath because theirs is more of an aerobic endurance short of breath, and so stretching shouldn't have impact it as much. So they should be more towards your typical population.

- [Rachel] Good. And Nancy commented that making sure they're involved in setting the goals helps with that buy in with the home exercise program. And I think Pam and I have both spoken to that today that if it's meaningful, if the activity is meaningful and the goal is meaningful, then they're more likely to have more participation on the days we're not there. Questions left. Mary Jo, from your observations, is there increased incidence of re-hospitalizations of patients after COVID-negative test results even without patient home health PT participation? I have not run into this yet, that doesn't mean that it's not there but I have not seen this situation in either direction 'cause I haven't had anybody test negative, get PT, and then either go to the hospital or not go to the hospital. My patients are either have been post-COVID and I'm working on their recovery or I'm seeing them for completely non-COVID related issues.

- [Pam] And I would say early on I was working in the hospital because our outpatient area was closed. It was pretty rare when we sent somebody home, they typically were able to stay home even if they hadn't had a full negative test yet. 'Cause sometimes we weren't waiting for two negatives, we were sending them home if they weren't, if their own symptoms were improving and they were manageable because we just wanted them out of the hospital as soon as possible to keep some of those other complications. And we didn't really find any that bounced back in. You know, I'm sure there's a few here or there but it's definitely the more common is that once they go home, they stay home.

- [Calista] All right. Well that looks like the last question. Thank you so much the both of you. It's a great course today and we're gonna go ahead and close it out unless you guys have any other words to say before we do.

- [Pam] No, just thank you for having us and thank you everybody for listening.

- [Rachel] Yup. Thank you so much. Be safe.

- [Calista] Have a great day, everyone.