

Welcome to Lung Fit, a podcast dedicated to topics and issues related to the practice and research of pulmonary rehab. I'm your host, Dr. Pat Camp. I'm an Associate professor in the Department of Physical Therapy at the University of British Columbia, and I'm a Principal Investigator in the Centre for Heart Lung Innovation, located at St. Paul's Hospital in Vancouver, B.C. I've been involved in pulmonary rehabilitation for over 20 years and I'm delighted to bring this podcast series to our listeners.

Today on this episode, we're going to talk about what makes a quality pulmonary rehabilitation program. In this episode, we're going to talk about quality indicators for pulmonary rehabilitation. I know this doesn't sound very clinical, but I strongly believe that if we, who are involved in pulmonary rehab, have conversations about product quality programs early and often, we're going to start to be able to look at all aspects of our program with a critical eye. I think that quality must drive everything we do, and I'm not really just talking about quality in a corporate way, I'm talking about it from an ethical and moral perspective. If patients are going to take the time to come to our programs, exercise, learn behavior, change techniques, and learn how to manage their chronic lung disease, it's only right that we can confirm to them that our programs are the best that they can be, within the contract constraints of setting and resources, of course. But, as you'll see, you can offer a quality program in many settings and with minimal resources.

So, why does this topic come up for me now? Well, I was part of the leadership team that developed quality indicators for pulmonary rehabilitation programs in Canada. We received funding from Boehringer Ingelheim, Canada. Now, they provided the funding, but they were not involved in any aspect of the study design, data collection, or interpretation of the results. We published these indicators in a 2019 article by the Canadian Thoracic Society, and a link to that paper in the show notes. And in that project, we identified 14 key indicators of quality for Canadian pulmonary rehab programs, but I think that they really do apply to any program anywhere. So, in this episode, we're going to cover indicators 1 to 5. Now, it might be a good time for you to pause the recording and actually go and print off that paper so that you can follow along with me.

So, you might first be wondering what is a quality indicator? Well, to quote our paper, quality indicators are statements that provide information about the quality of a specific health care service and point to the necessary structures, processes, and outcomes that must be in place. And to further break that down, structures are the tangible aspects of the program, and are usually related to things like equipment, and personnel, and resources. Processes can best be thought of in terms of what is actually going to happen to the patient in the program, and outcomes are the elements that you expect to change and the ways to measure them. So, you can see that there may be some overlap between these concepts, but they are useful when we want to consider quality indicators for pulmonary rehab. So, now understanding what a quality indicator is, how did we identify them for pulmonary rehab? Well, the project team first conducted a systematic review of the literature where we looked at numerous clinical trials, guidelines, white papers, and other kinds of documents related to pulmonary rehab, and created a very large list of what we thought some of those candidate indicators might be. Then, we invited pulmonary rehab experts from across the

country, in several different disciplines, to review this large list and to evaluate each item on a number of criteria. We also had discussion groups where these experts came together to give them an opportunity to consider and talk about each potential indicator where there wasn't consensus. And so finally, we ended up with a large list of 56 possible indicators. So, this went back to the project team leaders, and we further refined and consolidated some of those indicators and revised them to create a short list of 14 indicators.

So, today I want to talk about the first 5 indicators, and then the next two episodes will cover indicators 6 to 10, and then 11 to 14. And as I said, you've got the link to the paper in the show notes, so you can have a look at it while you're listening, if you can. So, first, I'm going to read out the indicators and then I'm going to describe them in a bit more detail. So, quality indicator 1 states that the pulmonary rehabilitation program has the following exercise, education, and safety resources for program delivery. And those are the cycle-ergometer, treadmill or flat open space for walking, strength training equipment which would include free weights, machines, elastic bands or elastic tubing, a pulse oximeter, blood pressure measurement equipment, supplemental oxygen, education program materials, and emergency protocol that includes written procedures and an onsite defibrillator or access to a cardiopulmonary resuscitation team, and finally, a quality assurance program in place.

So, you can see from this first indicator that is focused on structure. What are the tangible items that should be in place? The items relate both to the delivery of the intervention. You need exercise equipment, both for aerobic and strength training. You also need items for monitoring and assessment. You need education materials, and you need resources for safety, and a plan to use them, such as oxygen, oximeters, emergency protocols. And then finally, to be a quality program, you need to have a plan in place that continually assures that you're a quality program by doing regular audits or that sort of thing. So, many of these might seem very self-evident, but they are important.

In the Canadian Thoracic Society report on pulmonary rehab programs, where we surveyed a number of programs in the country, we found that there was a substantial amount of programs that did not have all these elements in place. And so, having a quality indicator that states that you need these things, for instance, supplemental oxygen, will maybe even give program staff more power to get these things in place. The second quality indicators states that the pulmonary rehabilitation program has a dedicated team of health care professionals with the necessary competencies and scope of practice to provide safe and efficacious exercises, assessment, and intervention, as well as education and behavioral modification, and medical consultation must be available to the program. And, you'll note that in this QI we haven't specified that certain disciplines need to be present. Instead, this has been worded in terms of both competency and scope of practice. The third quality indicator states that the pulmonary rehabilitation program duration is a minimum of eight weeks, with the exercise component delivered three times per week, with at least two supervised sessions per week. And this indicator is based on the best evidence that a quality PR program must have enough exercise sessions to be able to elicit an improvement in exercise outcomes.

Now, of course, most of the evidence that we have is based on the traditional hospital-based program, and so, this particular indicator reflects that scenario. The fourth quality indicator says each participant undergoes a history and physical assessment, which includes assessment of patient goals, resting oxygen saturation, resting heart rate, resting blood pressure, baseline patient reported health status, and respiratory symptoms. Now, this indicator is really based on good clinical practice and patient safety. You need to have an in-depth conversation with the patient about their medical history, with a rehab lens on. So, what are they telling you that could affect their ability to exercise safely and effectively? What are the goals that they have for themselves for the program? What adaptations might be needed to the program based on their current roles and responsibilities? And, a thorough assessment will uncover important factors that must be considered. These may identify patients that need further assessment before their safety to exercise can be confirmed. And that will begin the ongoing conversation about what the patient's expectations and needs are.

So really, this initial assessment is a way to identify, is the patient appropriate for the program? Are they safe to exercise what their goals are? What other things might need to be put in place for those things to happen? And so, a quality pulmonary rehab program has that as part of their initial assessment. The fifth quality indicator is a cardiopulmonary exercise test, or a CPAT, or a field exercise test, such as a six minute walk test or an incremental shuttle walk test, is conducted to assess aerobic function and to develop an aerobic exercise prescription. So, I think in some ways this is probably one of the most important quality indicators in the whole list. Every single patient must complete an aerobic exercise test of some sort to determine their baseline level, and to use in order to calculate their aerobic exercise prescription. So, without this test, you're missing crucial information that impacts both patient's safety, as well as the overall ability of your program to improve health. And you know, these exercise tests show your patient's response to exercise. They are very structured, and you follow very specific instructions to carry them out in order to get accurate results. And they give you an indication of your patient's response to exercise. How short of breath do they get? Do they report other limiting signs and symptoms that might indicate a problem, such as pain, or headache, or lightheadedness? Do they need to be referred to a different type of program, such as cardiac rehab, if they present with concerning cardiac signs? And then, they also give you an estimate of your patient's capacity to do exercise. What's an upper limit for them, and the necessary information for you to start them off and progress them at an exercise level that's both safe yet effective?

So, some programs may have the habit of not conducting an exercise test, but instead, they just start patients off on a piece of equipment and see how they do and adjust from there. And, you know, this is problematic because this approach may not identify patients who are unsafe. Or conversely, it may actually run the risk of under training an individual, and under training is a problem I see everywhere, where patients start at levels too low and by the end of the program, they haven't achieved what they could have.

So, those are the first 5 indicators on that short list of 14. I expect that, I'm hoping that, many of you are actually happy to hear them, and are relieved that you can check several of these off as being present in your program. And, if your program isn't currently meeting a

particular indicator, I hope that this episode sparks the conversation with your team about what changes you can plan for to address what's missing. Perhaps you need more training, or a visit with your foundation or donor to gain a piece of equipment, or a rethink about the patient pathway to make room for a different process. Regardless, you know, achieving quality in your program is a process, and it's not just the destination. So, think about where your program stands now, and how you can plan for the future.

So, I'd like to thank you for listening, and for joining me on this episode. I'm Pat Cap and we'll be back soon with a new episode of Lung Fit, where we'll discuss the next five indicators in the article. Thank you.

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