

Hi everyone. On the next two episodes, I'd like to share a bit about some of the research coming from my own lab. I think it's actually pretty important that anyone involved in a research project get creative with how we share our results, so this looks like a good opportunity.

I want to tell you a bit about the development and implementation of AECOPD-Mob, which is a clinical decision-making tool that we created to support clinicians who are involved with the mobilization of hospitalized patients with an acute exacerbation of COPD. I'll link the papers that are related to this study in the show notes. But, in this episode, I want to talk about how we developed the tool. And then in the next episode, I'm going to talk about the implementation study that we did, to see how the tool 'performed' in clinical practice.

Why did we develop this tool? Well, back in 2009, I was still involved in my postdoctoral fellowship, and Alison Hoens, the PT knowledge broker at our PT department at UBC, mentioned that there was a clinical decision-making tool called SAFEMOB, which supported clinicians working to mobilize patients in critical care settings. In her conversation though with PT professional practice groups, she heard there was interest in creating a similar type of tool related to acute exacerbations of COPD, and that tool could especially support new grads and clinicians new to this practice area. People hospitalized with an AECOPD are often admitted to medical wards, also where many new PT grads practice. It can be intimidating to work to mobilize a patient who has extreme shortness of breath, fluctuating supplemental oxygen requirements, and overall frailty, so a clinical support tool was really needed and requested by clinicians. Alison wondered too if this was a topic area of interest to me because I was a soon-to-be junior faculty member just beginning my research program, and I knew that I was going to be involved in pulmonary rehab research, but I was still considering what projects I wanted to start first. So, this project seemed like a good fit for me, so I wrote a grant which was subsequently funded just when I started my faculty appointment. So that was definitely a lucky break for me!

Why is this an important topic area though? Well, for many reasons. We know that it is common for patients to become less active once they are admitted to the hospital, regardless of their diagnosis. Of course their admitting diagnosis is a primary reason, but also the hospital environment itself can really limit activity. Patients spend much of their time in bed, either lying or sitting, and their bathroom is often just a few steps away, so they don't have to walk far to get there. And tests and sessions with health care professionals really encourage patients to remain near their rooms, so that they don't miss those opportunities or those appointments. There may be rehab rooms, of course, on the same floor as the patients, but these are often more conducive to 1-1 therapy, versus general physical activity. And, you know, it's this increase in sedentary behavior that's very detrimental to our patients. It's really difficult to patients to return back to a previous level of physical activity after discharge. And that low physical activity after discharge is the primary reason for readmission after an AECOPD. And also low physical activity has a major impact on survival, more than lung function and other indicators of disease severity.

So, in this context, enter the new grad, or a clinician new to the practice area. Patients with an AECOPD can be very breathless, and frail, and have complex oxygen requirements. And so there may be encouragement from other members of the health care team that the patient 'is not ready' for mobilization, and 'try again later'. And, this can be intimidating for a new clinician. And there may certainly be situations when, in fact, mobilization is not recommended. And, of course, if the patient is 'mobilized', what should the mobilization look like? What should be done at what stage of their physical function?

So, this kind of situation, and these questions, were what prompted us to develop AECOPD-Mob clinical decision-making tool.

Now, some listeners may wonder about the relevance of this topic on a podcast for pulmonary rehab. And, I think it's quite relevant, actually. A talk I heard recently from Physiotherapist Clinical Specialist, Amy Ellis, in a facility near where I am, you know, she had the following statement in that presentation, and she said:

“Rehabilitation is a process, not a place.” And I think that could be a quote from somewhere else as well. So even though many of us likely practice in an outpatient setting where participants have somewhat stable lung disease, nevertheless acute exacerbations of lung disease often require rehabilitation services even during that acute phase. And many of our pulmonary rehab participants have been recently discharged from hospital, and it’s quite likely that improving their functional status while in the hospital, if that had happened, that could optimize outcomes that are subsequently gained in a pulmonary rehab program.

So, if that was the rationale for doing this, how did we create this tool? Well, we had a multidisciplinary group of physios, nurses, and physicians all working together. And then we also invited 20 experts from throughout Canada to participate in something called a Delphi panel. And a Delphi panel is a way to gain opinions from people about a particular topic. And it’s done in a very specific way because it’s known that if you bring people together in a room to discuss a topic and try to achieve consensus, it can sort of be the ‘loudest’ voices in the room, or the people perceived to be more experienced or most senior, their opinions often are seen to be the correct ones. And that’s not always true! So, it’s important to hear everyone’s perspective. In a Delphi panel, people provide their opinions anonymously. And then you have subsequent rounds of discussion, and the panelists have an opportunity to see their comments on a particular topic, as well as the answers of the other panelists – and it’s all done in an anonymous way - and then you have the chance to change your answer based on how you see others have answered. There can be live discussion about the topics, but mostly the voting that happens about whether something is going to be accepted or not, is done anonymously through online surveys.

So, the experts on our panel were academics, researchers, clinicians, and patients and they came from metropolitan, urban, and rural practice settings. And so, for the first round of the panel, we sent out a survey that presented a clinical scenario of a hospitalized patient with AECOPD and then we asked panelists to list the parameters and thresholds for safe and effective exercise or mobilization. We took all those details from them, removed duplicate answers, and then we sent them back to the panelists to confirm their accuracy.

We then took the statements, and categorized each one into at least 1 of 5 main care categories: 1) What to Assess Prior to Mobilization; 2) When to Consider Not Mobilizing or to Discontinue Mobilization; 3) What to Monitor During Mobilization for Patient Safety; 4) What to Monitor and How to Progress Mobilization to Enhance Effectiveness; and 5) What to Confirm Prior to Discharge. And then, panelists determined if each item was high enough priority to be included in at least 1 category.

So then, using the responses from the panelists, we then created this AECOPD-Mob clinical decision-making tool. And we organized the tool in those five sections that I just mentioned. And details are provided in this tool in bullet points. Some details are quite general so the clinician can read them and they’re just sort of general health care issues like, assembling equipment and reviewing the patient chart. But other details are really specific, including thresholds for physiological parameters for safe or effective exercise. Then we went back to other focus groups to get some feedback on the layout, comprehensiveness, and ease of using the tool. And that part of the project was published in the journal *Physical Therapy*, I’ll put the link to that paper and of course a link to the tool itself in the shownotes.

So getting to the tool in a little bit more detail.

That first section: 1) What to Assess Prior to Mobilization, provides details on the equipment that might be required and should be assembled prior to mobilization. This may include walkers, transfer belts, portable oxygen tank and oximeter, proper footwear for the patient, and lines and poles organized. It also suggests steps to take when reviewing the patient’s status, including alertness, balance, or other comorbidities.

The next section:

2) When to Consider Not Mobilizing or to Discontinue Mobilization that provides more specific guidance regarding patient safety. And these are parameters you measure or observe prior to mobilization, and also during mobilization where warranted. And it provides specific values for physiological parameters like blood pressure, heart rate, or respiratory rate as well as assessing for other conditions that can affect the safety of mobilization, such as angina, deep vein thrombosis, or untreated arrhythmia.

The third section: 3) What to Monitor During Mobilization for Patient Safety provides general guidance regarding monitoring both patient-reported symptoms, such as dizziness and dyspnea, as well as other parameters such as balance and cognition.

The fourth section, What to Monitor and How to Progress Mobilization to Enhance Effectiveness is focused on the exercise or mobilization prescription itself. And it guides the health care professional to determine the patient's current activity level, ranging from being only able to do maybe certain movements in bed, up to being able to walk and go upstairs, as an example. And so, for each level, there are suggested exercises to address strength, mobility, and balance, as well as guidance on how to progress the activity in order to patients to move up the various levels. The suggested exercises were chosen actually based on their ability to be used in a hospital room setting, so they incorporate bed, chair and walking exercises for the most part, with really minimal equipment required.

The final section, 5) What to Confirm Prior to Discharge, that one provides guidance on how to best support the patient as they get ready for discharge. It provides topics on patient education, home exercise programs, and referring patients for pulmonary rehab.

And so all together, the tool has four pages – two pages that cover the details of the described 5 sections, and two additional pages which provide guidance regarding exercise prescription, including descriptions of specific exercises. And so, the tool itself is free for use, and it's available from my website at [prll.rehab.med.ubc.ca](http://prll.rehab.med.ubc.ca)

So now this tool has been used in hospitals in Canada, the US and Europe. It has also been used in different university programs that teach physical therapy students. Although experienced clinicians may find the information sort-of self-evident, new clinicians, or clinicians new to the AECOPD practice area, have found it helpful to confirm the evidence-base related to this practice area, and helps guide their clinical decisions when planning to mobilize and exercise their hospitalized patients with AECOPD. If you're involved in orienting staff, or teaching students, you might find that this tool helps with their education and clinical expertise in this area.

I hope you enjoyed hearing about how this tool was developed. As you can see, it can take quite a while and needs the efforts of many people with different types of expertise. In the next episode, I'll talk about the next study we did with AECOPD-Mob, where we created a project to implement the use of the tool in acute care hospital settings.

Until next time, have a look at the tool! And be well, and keep moving 😊

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