Kendal Williams, MD, MPH (host): Welcome everyone. I'm Dr. Kendal Williams. And I'm your host for this session of the newly minted *Penn Primary Care Podcast*.

This podcast grew out of a recognition that Penn Primary Care was now a large group of over 500 providers spread throughout the entire region. We are all part of one of the most dynamic and cutting edge health systems in the world.

A great deal of knowledge that exists within the Penn community itself, both outside of Penn Primary Care, but also inside of it but we really didn't have a great way of distributing that knowledge in such a way that it was useful to providers at the point of care. There's obviously grand rounds and other forums and meetings that exist, but they're widely dispersed and often they don't fit into our time constraints as busy clinicians. What we really wanted to do was find a way to harvest the knowledge at Penn and get it out there, so we decided to develop this podcast as a way of efficiently spreading expertise and learnings among the Penn Primary Care Community.

We'll be focusing on questions and challenges that primary care providers face every day and our contents are largely going to be driven by the concerns you send us. We will bring in experts in various fields to join our discussion like we have today. And in every session, we'll also have co-hosts who are from the Penn Primary Care community in addition to the host who will also rotate.

The podcast is going to be structured as a discussion and we're going to try to keep it relatively short. We figure everyone spends about 20 to 30 minutes in a car or on a walk or some form of exercise equipment every week. So our podcasts will be within that time interval. We have to recognize a Penn or any primary care provider's life is busy and we want to keep these sessions efficient and valuable to you. And those of us who are organizing this really want to be servants of your needs, both in terms of content, but also be efficient and respectful of your time.

So this is our first podcast and we decided to start with the obvious topic, COVID. It's the thing that's changed our lives so greatly in the last year and just continuously dynamically change all the time. And so it's really an opportunity to circle back on this and figure out where we're at right now.

In this, our maiden voyage, I'm joined by my primary care colleague, Jeffrey Howard Millstein, MD. Jeff is an internist and the Regional Medical Director for the New Jersey and Bucks County Practices of Penn Primary Care. He also contributes to other media projects and you'll see him as the author of articles in the Philadelphia Inquirer from time to time. So Jeff, how are you?

Jeff Millstein, MD: I'm doing great. Thanks so much, Kendal.

Dr. Williams: Thank you for joining us. You had an article recently. What did you talk about?

Dr. Millstein: I had a piece recently that was kind of an outreach to folks who are vaccinated, but who may not be entirely comfortable with the new CDC guidelines --maybe not quite ready to take off the mask, to give them a little bit of guidance about managing their own personal risk tolerance.

Dr. Williams: Oh, that's terrific. That's going to be something we'll touch on here as we go forward.

We're also pleased to be joined by Stephen J. Gluckman, MD. He's been active in resident and student education for decades. Steve's an infectious disease physician by training, but he's kept his feet in primary care. He sees patients in the Penn Center for Primary Care in the city. Steve also has long-standing experience with international medicine and was really the pioneer at Penn and the development of Penn's international health programs, particularly in Botswana.

We're really happy to have Steve here to talk with us about what is really an international pandemic and a disease. Steve, thanks for coming.

Stephen J. Gluckman, MD: Well, thank you again. I really appreciate the invitation to participate.

Dr. Williams: Steve, what are you up to now? I know you, of course, as the time we've spent together in resident training and so forth, but what do you do now?

Dr. Gluckman: Well, I do what you said. I see primary care patients. I consult in infectious disease. And both of those are involved with medical student, resident and fellow teaching.

Dr. Williams: You have a strong role in the travel medicine work, right?

Dr. Gluckman: Yeah. That's gotten affected by COVID in the sense of being able to actually travel. I still have active contact with the hospital I've been to in Uganda and get regular consultation phone calls from a hospital in Tanzania, even though I can't travel to either of those at the moment. I'm scheduled to go back to Botswana in November. It's been pushed back twice now. But I think November is probably going to happen.

Dr. Williams: I think sometime in the future, Steve, we should have you on just to talk about the international medicine opportunities as well.

Dr. Gluckman: Oh, I'd love to do it. There's a lot things to say.

Dr. Williams: So, we're also joined by Ben Abramoff, MD, MS. Dr. Abramoff is a physiatrist. He's an assistant professor at the University of Pennsylvania. He serves as Director of the Spinal Cord Injury Services at the Penn Institute of Rehabilitation Medicine. And for this discussion -- most germanely -- he is the Director of the Post-COVID Assessment and Recovery Clinic at Penn.

Ben, thanks so much for joining us.

Benjamin Abramoff, MD, MS: Thanks for having me.

Dr. Williams: We've really asked Ben to join us because, you know, as this pandemic has sort of run its course through our society, we're in a post-COVID phase for a lot of people. So we really wanted Ben to join us and talk about what they're seeing, so we can better manage it in our primary care practices.

We decided to tackle this topic in the natural order of the COVID spectrum starting from prevention -- then we're going to talk about acute management and then to the post-COVID spectrum.

As I mentioned, we're going to do this as a discussion. We want it to be relatively informal and free flowing… I'm going to try to keep us on point, but we're going to let the discussion lead us a little bit.

Let's start with the issue of prevention: We've got over 50% of Pennsylvania fully vaccinated right now. Everything is starting to open up… Every day, something more is opening up. At this point in the state of Pennsylvania, if you're not vaccinated, it is largely by choice.

So a lot of the questions that we get as providers have to do with the safety of vaccines and really how to educate our patients to get vaccinated.

Steve, I guess I'll start with you. I wanted to ask you just this question about the safety of the vaccines themselves and what our experience and what you're seeing with the safety of the vaccines.

Dr. Gluckman: Well, the bottom line is these vaccines are very safe. There's no vaccine that doesn't have potentially some risk for side effects, but the potential side effects from any of the vaccines one chooses far outweigh the risks of getting COVID and getting ill with COVID and dying with COVID.

The two vaccines that we've had the most experience with have been both RNA vaccines, the Pfizer and Moderna vaccines. And there's no question that compared to other vaccines, there seems to be a higher incidence of some post vaccine, if you allow me to use the term flu-like symptoms. They're quite transient, but they can be occasionally unpleasant with fevers and chills and muscle aches. They last typically a day or so. I experienced this and it lasted about a day. But those are not long-lasting and not significant in terms of side effects.

Like any pharmaceutical, there is a small risk of anaphylaxis. It is indeed very small. We're still talking of reported cases in the teens. It's more likely to current people that are highly allergic to begin with. And anybody that's been vaccinated knows we keep people around for about 15 minutes -- because most anaphylaxis, if it's going to occur, will occur within 15 minutes. But people who we have reason to wonder might be at higher risk, we actually keep them for 30.

And if somebody experiences an anaphylactic reaction, it's quite treatable, particularly if you're in a healthcare facility. And in fact, the outcomes have been very good in the few people that have had it. I certainly wouldn't discourage anybody from getting vaccinated because of a fear of anaphylaxis.

Dr. Williams: I mean, I think in terms of, and Steve, you can correct me on this, but I'm thinking in terms of the balance of effectiveness and risk -- this is probably among the best vaccines that we've ever produced, at least thus far what we see. Would that be fair to say?

Dr. Gluckman: Yeah, absolutely. It is. Absolutely. And, you know, it's unfortunate that it got a little caught up in politics and I think that's gotten away a little bit, but it's a very safe vaccine and it's preventing a disease with a track record of a lot of people getting very sick and far too many people dying.

Dr. Millstein: You know, Steve, we hear a lot of folks in the office express concerns about long-term side effects from vaccines. And I think they're used to hearing stories about other pharmaceuticals, which months or years later are shown to have issues that weren't originally appreciated. Is there any precedent for anything like that with vaccines long-term years out side effects?

Dr. Gluckman: I'm pausing because I'm really thinking if that's possibly the case. The fast answer is no. There are no late side effects from vaccines, and that goes across the board for any vaccine.

Dr. Millstein: Well, that's great because that provides a lot of reassurance to folks, maybe distinguishing vaccines a little bit from other pharmaceuticals.

Dr. Gluckman: Sure. And, you know, the diseases that vaccines prevent often have long-term side effects. People tend to not put that into the equation. So the benefit is unbalanced with the vaccines. The only thing that's more cost-effective in terms of the public's health, which isn't fortunately too relevant in this country, is safe water. After safe water, vaccines are the most cost-effective thing that people can do to prevent disease.

Dr. Williams: So, Steve, I guess we should probably separate out the J&J vaccine or at least have a discussion about it. It's a little more complicated because like AstraZeneca, it has a viral vector and there was some signal in the AstraZeneca vaccine of increased thrombotic risk, particularly cavernous sinus thrombosis. I see that there's been some similar reports to the J&J vaccine, but it's really unclear whether that's over and above the baseline rate of these clots in the community. What's your thinking about the J&J vaccine at this point?

Dr. Gluckman: Well, first of all, again, just to say the vaccine prevents much more disease than it's likely to cause. There is, I think, still some controversy about if there's an increased risk or not, but there might very well be a small increased risk of the initial six reported cases of cavernous sinus thrombosis that occurred on the background of almost 7 million doses of the vaccine.

So we're talking about a risk of if it exists at all, of about one in a million. And I'm not making that trivial or insignificant, but it needs to be put in the proper perspective, that very, very remote risk. And all up to date, both vaccines, it's only occurred in younger people and predominantly women. But it's still, you know, it's a tricky business if we say insignificant. I recognize if you get it, it's not insignificant. But on a statistical basis, pretty much anything else we do during the day is a higher risk. It's a higher risk if we get behind the wheel of a car. We don't hesitate to do that.

Dr. Millstein: That's a great way to put it in perspective.

Dr. Williams: So Jeff, you've thought a lot about this vaccine hesitancy issue. I had a couple just this afternoon. They're both very well-educated, very successful in their careers, neither of them had been vaccinated, both of them sort of for different reasons. But one of them just said, "I'm waiting for it to play out. I want to see if these side effects come. I want to wait until I have to get it." But how are you working through this with your patients?

Dr. Millstein: Yeah, it's definitely challenging. But I think my favorite little phrase that I've heard that captures my philosophy about it, I guess, is, "It's a dance, not a battle," meaning if we engage in conversations with folks about vaccine hesitancy with the intent to win the debate or the conversation, we probably won't be very successful, so studies have really shown that preaching or advising, lecturing, shaming people, that really won't really help a whole lot.

I think a lot of confidence in vaccines and other interventions that we do really, it all hinges on trust. So anything that we can do during the visit to build trust and connection with patients is going to put us in a better position to try to, I guess, persuade folks to make the good decision in their best interest.

Dr. Williams: So this woman I saw this afternoon, her argument was, "I have to go back to work in the office soon, and I want to get the vaccine as close to the time that I have to go into the office, because I know it's only going to last a few months. And I want to maximize my time, which was an interesting way of thinking about it." But I guess there is this question about whether these effects of the vaccines is going to wear off and whether patients can be sure they're protected. So what do we know about the effectiveness and how long these work, Steve?

Dr. Gluckman: Sure. That's a common question and it's sort of commonly slightly misunderstood. We know for Pfizer and Moderna, that protection lasts for at least six months. Some people hear that as protection lasts for six months. No. It could last for six years. We don't know yet how long it lasts, but we do know it lasts for at least six months.

And so whether we'll need boosting, when we'll need boosting is still unknown. And that to me is not a reason, it's a double negative, not to get vaccinated. People should get vaccinated whatever the

duration is. I mean, we do get flu shots annually and that is an acceptable thing. And who knows? This may last five years. It remains to be seen, but the science at the moment is protection lasts at least six months.

Dr. Williams: And we'll know more just as time goes on and we measure the people that were vaccinated and see where we're at.

Dr. Gluckman: Yeah, we'll know more. Sure. It may have to live longer. I wouldn't make an assumption at all at this point.

Dr. Millstein: I think when we acknowledge some uncertainty about the vaccine, that also helps, I think, with building trust. We can sound more certain about side effects, which, you know, I think we have enough information to really sound quite firm that that this is a safe vaccine. All of them are safe, but there certainly is uncertainty in terms of other issues like duration or protection.

Dr. Gluckman: But concern about duration shouldn't be a reason not to get vaccinated now at all.

Dr. Williams: So before we leave prevention, I just wanted to touch on mask and social distancing. This is more of a public health issue, but we do get questions in our practices. I know, Jeff, you had written about this recently. Where are we going to be in two months with this? What are you advising your patients? And of course, there's also the issue of people with young children who have not been vaccinated and the risk they feel they may be exposing their children to.

Dr. Millstein: Yeah. I'm curious to hear how you guys approach this too. I guess I've tried to empower my patients to keep the masks on if they really don't feel comfortable yet. You know, it was a lot easier in some ways, shutting everything down than it is opening back up because we all have to gauge our own risk tolerance and readiness to emerge from what's been really unique year and a half so far. So I like to try to help them come to terms with things like the possible stigma of keeping a mask on when the CDC has said it's okay to take it off. Some people are afraid that folks will think they're not vaccinated and make assumptions. So I think many patients do need some reassurance there that okay to go at your own pace. How do you guys handle that?

Dr. Gluckman: Yeah. If I could add, I think this dramatic announcement by the CDC got a little misheard. The CDC did not say throw away our masks. They did say under certain specific circumstances, we no longer had to wear masks. And those circumstances are when we and the people around us are all fully vaccinated and in small groups and our immune system is normal. That means in larger groups, if you're going to concert or basketball game, for instance, where you don't know who's been vaccinated and who isn't and you can't keep your distance, you should be wearing a mask. So it wasn't a carte blanche get rid of the mask. It's under certain fairly controlled circumstances and that's an advance, so people should celebrate that. You can hang out with your family now if everybody's been vaccinated. That's good. But under other circumstances, like, again, if you're going to a Sixers game, I'd wear a mask

Dr. Millstein: I think patients really need our help though, because folks are just notoriously not great at gauging risk. It's just not something that comes naturally to a lot of folks. So it is generating a lot more questions and, you know, people just need our counsel more now than ever.

Dr. Williams: So let's switch gears a little bit and head into acute management. Most of us have been doing this for you know, months now, managing patient's acutely, some of us in the inpatient environment as well as the outpatient environment. You know, I was on call over the weekend last week and I got a call from a patient on a Saturday morning who had tested positive with COVID the day before. And she had some risk factors, but she was very interested in wanting to know about

monoclonal antibodies and whether or not she could have access to them. So let's talk about probably the only real COVID specific action decision that we face and that's whether to refer patients for them. So I guess the first question is, does it work?

Dr. Gluckman: Yes is the answer, but it has to be given early. And hence, it's really indicated for outpatients. It is not indicated for inpatients. And if we have an outpatient early on in their illness, particularly if they tend to be in a risk group for doing badly, then I would keep them monoclonal antibodies. They've been shown to improve outcomes. There's no question about it.

Dr. Williams: I think it's two studies now, if I'm not mistaken. I don't know. You may know better, but I think I've seen two studies that showed this. And, you know, Penn is an active program that we can refer to easily through Epic. You just simply put in an order for it. I always have trouble finding it, but if I put in COVID, it comes up, seems to come right up. And you put an order in, and it's received by a nurse who I think is there seven days a week, I found, who then calls the patient and goes through a process.

Dr. Gluckman: Yeah. And they're in either that day or the next day. It is one of the slickest things I've seen. It's so easy. And it happens with one order in Epic.

Dr. Millstein: Yeah, I've had the same experience. It's been super smooth.

Dr. Williams: And it happens at multiple sites too. I mean, it's Princeton, or they always ask you when you put the order in, "Do you want it Chester County or Princeton? Where do you want the patient to go?" That's terrific.

Actually, one of the questions at the end we're going to deal with is, you know, what are the positives of COVID? And I think actually COVID has gotten us better at doing some things. But tribute to those that have really worked on this project, I know Penn has opened it up to the city health clinics as well, and the federally-qualified health centers in West Philadelphia treating the greater community and sort of brought them into this with the same sort of access point that we have. So it's really been a terrific thing. And Dr. Hamilton and others have been really terrific on this.

Dr. Gluckman: Yeah. Keith has really been a key coordinator of this.

Dr. Williams: So we're not going to belabor the acute management of COVID in the outpatient setting too much. You know, obviously if a patient does poorly at home and starts to get dyspneic, we're going to send him to the emergency department and they're going to get evaluated there. And if they get admitted and placed on oxygen, they're going to get remdesivir and Decadron. Both seem to have some effect. Decadron reduces mortality, it appears. But, you know, other than that, I think it's just supportive care both outpatient and inpatient, right?

Dr. Gluckman: Yes.

Dr. Williams: So, the next phase, so once patients have recovered or at least recovered from the acute phase, they show back up in our practices and we start to see all kinds of issues popping up. And that's why we've really invited Ben to join us. Ben, I want to bring you back in.

Ben has had his own podcast in the past, so he's familiar with this universe, probably more familiar than we are. But Ben, you know, I'm very interested in hearing what you've been seeing in the post-COVID clinic and the experience you've been having. Can you just start by describing the post-

COVID clinic? I don't think that's what you call it actually. You can tell me the formal name, but some of the patients you've been seeing and the problems you're facing.

Dr. Abramoff: Yeah. So the kind of formal fancy name is the Penn Medicine Post-COVID Assessment and Recovery Clinic. And we've been going for about a little less than a year now, so we started mid-summer 2020. At that point, we're really expecting to see patients who are critically ill in the ICU for extended period of time, kind of that post-ICU syndrome type of patient who we've had a lot of, you know, familiarity seeing and caring for on our inpatient rehab unit.

But what quickly became apparent is that not only were patients coming to their providers for residual symptoms who had been critically ill, but lots of patients who are not necessarily that sick initially with kind of milder symptoms at home, not needing oxygen. We're continuing to have persistent symptoms in multiple domains. And they were being seen widespread throughout Penn. And there was no real central home for them to get established with all the different services and treatments that we could offer. So, that's kind of where the post-COVID clinic came from. And it's just grown since then. And we've learned a few things along the way that seem to be helpful.

The way that we've kind of developed, we do a one-hour telehealth visit for the majority of patients initially. And we go through kind of a full review of their symptom course, what treatments they've had, what testing they've undergone. Many of these patients with things like ongoing fatigue or some breathlessness have undergone multiple studies, MRIs, EMGs, EEGs in some cases, and oftentimes unrevealing, which is another discussion.

And then if we go through numerous kind of standardized questionnaires, screening, we ask about symptom course, medications, and then also the social and employment impacts of the pandemic. Many people have had changes in jobs, additional stress from having children at home. So we do a very comprehensive initial evaluation.

And that the things that we're seeing are pretty widespread across the board. The number one thing is probably fatigue. I think most of our patients report some degree of fatigue ongoing since their initial illness. Breathlessness is also common. We work closely with Penn's Pulmonology Group led by Dr. Kotlof on the COVID side. And then cognitive changes are also common and there's actually a new neuro-COVID clinic that's been established as well here at Penn. So we've got us now a core group of neurologists that we're working with.

Then beyond that, just a whole slew of other symptoms, psychiatric issues, anxiety, depression, dysautonomic type symptoms, whether that's inappropriate tachycardia or orthostasis, lots of patients have ongoing pain and then skin changes. So if you were to do a review of systems for COVID patients overall, there'd probably be something in every system. So very widespread issues going on, but fatigue, cognitive changes and breathlessness are probably the most common ones.

Dr. Williams: I guess that, Ben, the thing that strikes me is how do you distinguish chronic fatigue syndrome or some of the other things that we face all the time in our practices pre-COVID from what you're experiencing and how much of it is due to COVID itself?

Dr. Abramoff: That's a really challenging question. And some of the people that we speak to even within kind of the community of post-COVID providers, people who are involved in these clinics are under the impression that patients are chronic fatigued for the most part and this is just kind of manifestation, on a larger scale. Others, you know, don't think it's kind of it's completely separate, own different entity. I think it's a spectrum. There's patients who come in who are a little bit deconditioned. They'd been out for two months from work and they were sick for a month. And so they just haven't been very active and they're still within the first three, four months of their illness.

And then we have patients who are a year out and really appear to be very similar to chronic fatigue patients.

And, unlike Dr. Gluckman, I hadn't seen a ton of chronic fatigue prior to COVID. It's funny as I wish we had kind of touched base earlier on because we learned a lot as we went along, but you know, Steve's expertise is very helpful in this. So anyway, it seems to be a spectrum. And I think there are patients that really fit nicely into the chronic fatigue syndrome model, but others who are more cognitive or lots of autonomic symptoms may not fit clearly into that chronic fatigue syndrome category.

Dr. Millstein: Ben, I wonder if I could just ask you a real practical question too. One is just, how do we get these patients to you. And the other, is this the kind of thing that's usually covered by their standard insurance?

Dr. Abramoff: So for patients that are in Pennsylvania and New Jersey, it's usually not a problem to see them telehealth. For patients that are seen from other states, it can be challenging, particularly on the telehealth end. And so we're mostly seeing patients in New Jersey and Pennsylvania currently. There's a phone number that they can call and if providers want to call on behalf of their patients, that number is, if you want it, it's (215) 893-2668. You can also always email me if there's specific patients or questions about a patient.

We also have created a physical therapy program specifically for these patients that are very gradual gentle, cautious of post-exertional malaise really based on patient's perceived exertion, making sure that they're not overexerting because many patients, similar to chronic fatigue syndrome, report worsening their symptoms following aggressive exercise. It's really meant to be functional and kind of gradual based on the individual patient.

So that's referral than anyone could place. If you put in a prescription for physical therapy in Good Shepherd Penn Partners, there's a box for COVID Recovery. And if you put in all their information, they should get phone call from physical therapy to arrange a specific post-COVID visit. So that's a really nice resource to have as well.

Dr. Millstein: Oh, that's great. Thanks so much.

Dr. Gluckman: And it's a great resource about chronic fatigue. I think at this point, most people believe that many things can trigger chronic fatigue syndrome, so the fact that COVID can shouldn't be a surprise, number one.

Two is autonomic dysfunction can certainly be part of chronic fatigue syndrome. Many of these patients have some temperature dysregulation. They have sweating dysregulation, they have pulse dysregulation, and, you know, high percentage of positive tilt table testing. So that can be part of it. But just to underscore it, the management is individualized.

And, since we don't have an underlying thing to specifically treat, the management is management of symptoms. That has to be completely individualized. And that's why it's good to have a clinic that pays attention to that and understands that it's not one-size-fits-all.

Dr. Abramoff: I would, again, agree with that a hundred percent. Lots of patients come in looking for what is the treatment? What is the pill do I take? Is it, you know, vitamin D? Is it fish oil? Is it ivermectin? And we always advise them, there is no cure or one treatment.

It's very symptom-based at this point. So depending on what the patient is experiencing, we tailor the treatment for them. If they're having lots of cognitive dysfunction, we give them strategies to manage their cognitive dysfunction. Sometimes we get them in with our speech-language pathology to do cognitive therapy with a compensatory strategy, restorative therapies. And patients have really responded well to this.

So even though, you know, it's not always what they want, being able to treat all these different elements tends to lead to better outcomes. Dr. Williams: So, thank you all very much. This has been a great discussion. I'm starting to get sensitive to the time and my promise to keep it within a very manageable time window here. Let me just open it up though if there's any closing comments any of you want to make, aspects we didn't touch on.

Dr. Abramoff: I think one thing that I thought was an interesting question before is about, you know, anything good that's come out of this, and I think there is one thing that I know Dr. Gluckman probably has experienced with too, is that there are patients with chronic fatigue syndrome and POTS who really didn't have any resources or places to go. And with the development of these clinics, hopefully there'll be an opportunity for them to see people who have a little bit more knowledge down the road. And I also think it's also true for patients who are critically ill for other reasons, that the development of these clinics and kind of these post-critical illness type clinics I think will serve other patient populations well down the road.

Dr. Gluckman: The other thing that you could argue as a positive is I think it's really brought to the forth something that should have been obvious a lot sooner, which is emphasizing the medical inequities in this country. And I think in the last six months that's become one of the main topics in terms of everything about COVID, access to care, access to vaccine, et cetera. That's a good thing in the long-term.

Dr. Millstein: Yeah. It's really magnified what's been a festering problem for a long time.

Dr. Williams: So, I'm going to close this first podcast with a little about what to expect moving forward. So we have several more planned and hope to keep you on a roughly by monthly schedule. We really have an almost infinite amount of topics that we can tackle, but we really want to cover those that are most useful to you, our listeners.

You can email me your thoughts about questions or things that we can address, and we welcome critical feedback: kendalwilliams@pennmedicine.upenn.edu.

Thank you for this is our maiden voyage -- it was superb. We hope you enjoyed the discussion. We'll see you next time.