Videoconference Public Meeting
on Patient-Focused Drug Development
for Systemic Sclerosis

Moderated by Robyn Bent, RN MS, CAPT
U.S. Public Health Service
Tuesday, October 13, 2020
10:00 a.m.

Food and Drug Administration
White Oak Campus
10903 New Hampshire Avenue
Silver Spring, MD 20993

Reported by: Janel B. Folsom
JOB No.: 4080451

A P P E A R A N C E S

List of Attendees: (by videoconference)

Nikolay Nikolov, M.D., Director of the Division of Rheumatology and Transplant Medicine in the Office of Immunology and Information in the Center for Drug Evaluation and Research, FDA

Theresa Mullin, Ph.D., Associate Director for Strategic Initiatives, FDA

Dinesh Khanna, M.B.B.S., Professor University of Michigan

Rachael Glaser, M.D., Clinical Team Leader, Division of Rheumatology and Transplant Medicine, FDA

Keith Hull, M.D., Officer, Division of Rheumatology and Transplant Medicine, FDA

Raj Nair, M.D., Acting Team Leader, Division of Rheumatology and Transplant Medicine, FDA

Shera Schreiber, M.D., Medical Reviewer, Office of Tissues and Advanced Therapies, Center for Biologics, Evaluation and Research

Rebecca Rothwell, Ph.D., Statistician and Team Leader, Division of Rheumatology and Transplant Medicine

A P P E A R A N C E S (Cont'd)

Maryjoy Mejia, M.D., Medical Officer, Division of Dermatology and Dentistry

Snezan Trajovic, M.D., Team Leader, Division of Dermatology and Dentistry

Onyeka Illoh, O.D., Division of Clinical Outcome Assessment

Shannon Cole, Operations Research Analyst, FDA

Amy Gietzen, Panelist

Julie Jeffers, Panelist

Rosemary Lyons, Panelist

Amy Harding, Panelist

Kimberly Bennett-Eady, Panelist

Isa, Patient

Laura, Patient

Sheri, Patient

Monica Cicchetti, Panelist

Demi Trice, Panelist

Anita DeVine, Panelist

Jackie Latka, Panelist

Susan Nyanzi, Panelist

APPEARANCES (Cont'd)

Noelle, Patient

Kristina, Patient

PROCEEDINGS

MS. BENT: Good morning, everybody. I'm Robyn Bent in the Office of Center Director within the Center for Drug Evaluation and Research at FDA. I will serve as the discussion facilitator for today's meeting which is part of an FDA initiative called "Patient Focused Drug Development."

We have a full agenda and I'm going to briefly walk you through it. We'll start with opening remarks from Dr. Nikolay Nikolov, Director of the Division of Rheumatology and Transplant Medicine in the Office of Immunology and Information in the Center for Drug Evaluation and Research here at FDA.

After Dr. Nikolov's opening remarks, we'll hear from Dr. Theresa Mullin, Associate Director for Strategic Initiatives who will talk about the FDA's patient-focused drug development efforts.

We'll then spend some time hearing from Dr. Dinesh Khanna from the University of Michigan who will provide us with the background on systemic sclerosis. Then we'll get into our discussion with individuals who are living with systemic sclerosis or scleroderma and their loved ones and Dr. Khanna.

We'll have two sessions. Our first session will focus on the health effects and daily impacts of systemic sclerosis that matter most to individuals. Our second session will focus on your thoughts about current approaches to managing systemic sclerosis.

I'll better explain the meeting format and process right before we get into our first panel session. At first, I want to touch on a few logistics and a few housekeeping points.

This meeting is taking place in a fully-virtual setting and is focused on hearing on people who have personal experiences with systemic sclerosis. Throughout the day, we'll have polling questions and you'll have the opportunity to share your experiences by using either the chat feature in the bottom right corner of the meeting screen or by calling the phone number that we will be putting on the screen throughout the meeting.

This meeting is being webcast and the live webcast is being recorded. Both the webcast and transcripts of today's meeting will be archived on our website.

With that, it is my pleasure to introduce Dr. Nikolay Nikolov who will be providing our opening remarks.

DR. NIKOLOV: Good morning, everyone. Just want to make sure that there is audio and video.

MS. BENT: Yes.

DR. NIKOLOV: Yes. Good morning, everyone. Welcome to this virtual public meeting on patient-focused drug development for systemic sclerosis hosted by the FDA. We're excited to be here today to hear from you; the patients, your loved ones, and caregivers about how you think about systemic sclerosis and what you look for in systemic sclerosis treatments.

The agency, the scientific community, and other stakeholders have recognized the significant gaps in our understanding of this complex and devastating disease from the perspective of patients and their families.

I understand we have representations from patients, caregivers, and advocates and I thank you all for being here today and being part of this meeting to share your powerful stories with us.

We are here today to -- you are here today to educate us about what are the things that are most important to you as patients, families and caregivers who deal with this chronic illness and we're here to listen and try to better understand the very important perspective that patients with systemic sclerosis and your families and the struggles you face every day.

The FDA has recognized the needs to have all stakeholders involved and particularly patients in identifying the key elements of clinical development such as endpoints and outcomes that would represent more accurately the burden of disease. In that respect, the FDA's committed to including patients' perspective in drug development.

While FDA plays a critical role in drug development, we're just one part of the process. We protect and promote public health by evaluating the safety and effectiveness of new therapies, but we do not develop drugs or conduct clinical trials. This is done by other partners and stakeholders, including medical product developers, healthcare providers, and federal partners who are also present today.

Today's meeting will give us all an opportunity -- important opportunity to hear directly from you about the symptoms that matter most to you, the impact the disease has on your daily lives, and your experiences with current available treatments.

Information provided for this format can better influence the benefit risk assessment of new therapies, identify areas of unmet need, and help drug developers and regulatory authorities design programs that are more relevant to address how patients feel and function. This has resulted in patient groups having a significant impact on drug development in recent years.

Today's meeting is a very important dialogue and I hope that this is just the beginning that will lay the foundation for future conversations. The systemic sclerosis community is very engaged and eager to participate in this effort which is evident from the impressive attendance at this virtual meeting.

This meeting is as important to us as it is to you. So thank you for joining us. We really appreciate this opportunity and are looking forward to a very productive discussion today.

With this, I will turn it over to Dr. Theresa Mullin who will provide backgrounds on the FDA's patient-focused drug development efforts. Thank you.

MS. MULLIN: Hello. I'm Theresa Mullin and I'm the Associate Director for Strategic Initiatives at the FDA Center for Drug Evaluation and Research and I'm very glad that you are able to join us today for this meeting.

I'm going to give you an overview of

FDA's patient-focused drug development initiative which this meeting is part of. Next slide, please.

And so I want to start with saying a little bit about FDA's role in medical product development and evaluation. Now FDA's mission is to protect and promote public health and part of that is to evaluate the safety and effectiveness of new drugs. And while we play a critical role in overseeing drug development, we're just part of that process. FDA does not develop drugs nor do we conduct clinical trials for the development of drugs.

However, our review divisions do evaluate the result of those trials and we do oversee and provide oversite during drug development, including clinical trial oversite and so that's how we're able to really ensure safety and effectiveness of the drugs and the integrity of development process. Next slide, please.

And so what is patient-focused drug development and how does that fit into this? Well, PFDD is a systematic approach to help ensure that patients' experiences, perspectives, needs, and priorities are captured and are meaningfully incorporated into drug development and evaluation. Next slide, please.

The evaluation that we do for new drugs means that we really need to understand the patient's perspective and patients are uniquely positioned to inform FDA's understanding of clinical context and regulatory decision making. Prior to PFDD meetings, we didn't really have a lot of mechanisms for collecting patient info. They were really limited to discussions that would occur with regard to specific applications that were under review, for example, through an advisory committee meeting, and only a few patients can participate in those meetings and they need to undergo conflict of interest screening and meet other criteria.

PFDD meetings provided us with a more systematic way to obtain patient's perspectives on the severity of the condition and the impact that that condition on your daily life and their assessments of available treatments, how well those treatments are working for them. Next slide, please.

So this slide gives you a sort of timeline for how long we've been doing our patient-focused drug development meetings and bringing stakeholders together to hear the patient's voice in a given disease area. We established this program in 2012 and we've been conducting these meetings since 2013.

As so far, FDA has conducted over 25 of these meetings, and we also have established externally led patient-focused drug development meeting option to really expand the capacity here to have more meetings, because patient groups were telling us that they really wanted to conduct a meeting in their disease area.

And so we really value the information we've been collecting in these meetings. It's been extremely in informing and giving FDA insights about what it's like to live with the disease. Next slide, please.

And so this gives you a sense of the range of the diseases that we've been exploring and hearing about in patient-focused drug development meetings and you can see it's a very wide range of disease area, and yet in every one of these meetings, we have asked similar kinds of questions about the impact of the burden of the treatments and the questions that worked very well in helping us get a better understanding.

And in addition to these meetings, we've had over 30 at this point and counting externally-led meetings, for patient-focused drug development. Next slide, please.

These meetings are sort of set up in a townhall style of discussion format which is different from the typical public meeting that FDA might have. They begin with an overview of the clinical background and currently-available treatment typically provided by one of our senior medical staff. And that's followed by a session that's focused on hearing patients' views on the symptoms and impacts of the condition on their life.

We begin this with a panel of patients and caregivers who will give their first-hand experience about that -- symptoms and daily impacts and that provides a nice springboard for the facilitated discussion to bring in more voices from other people who are participating in the meeting. And that's followed by a session on the current treatment options.

And again, we begin with a small panel of patients and caregivers talking about their experiences and their story, and that provides a good springboard for the discussion of others' experiences with treatments and what the treatments are able to -- duplications and where they fall short. Next slide, please.

Each patient-focused development meeting is tailored, to a degree, to meet that specific disease area. And FDA does encourage patient advocates, researchers, drug developers, healthcare providers and others to attend these meetings, however, our focus is hearing directly from the patients and their caregivers.

And so we ask others to remain silent and stay in listening mode during these discussions so that we can all hear directly from patients and caregivers and patient representatives.

And then after PPFD meeting, a voice of the patient report is developed to summarize what we have heard from patients and caregivers during that meeting. Next slide, please.

So with that, I want to thank you again for joining us today. We're really looking forward to hearing what you have to tell us about what it's like to live with systemic sclerosis and we know that it'll be extremely valuable to us in our work going forward. Thank you again.

MS. BENT: I'd like to thank Dr. Mullin. Obviously, I'm a bit biased, but I think these PFDD meetings really hold an important place in incorporating the patient voice into the medical product development process.

And now I'd like to ask Dr. Dinesh Khanna to unmute and turn on his video to begin his presentation that will provide us with an overview of systemic sclerosis. Dr. Khanna?

DR. KHANNA: Good morning, everybody. And it is a great pleasure to be here. Now let me pin my slides.

So good morning, again. It's a great privilege and pleasure to be presenting on scleroderma and systemic sclerosis. I think in a very important meeting on the patient-focused group development for systemic sclerosis. Next slide.

Here are my appropriate disclosures, although I'm not talking about any therapeutics today. Next slide.

So what is scleroderma? It's an altering [ph] disease and the word comes from two Greek words, sclero, meaning hard, and derma, meaning skin.

There are approximately 200,000 to 250,000 people in the U.S. who suffer from scleroderma. As I show below, scleroderma can be divided into localized format that usually affects young people, and systemic sclerosis or systemic scleroderma.

I think with our estimate, there are approximately 75,000 to 80,000 people in U.S. who suffer from systemic sclerosis. Next slide.

So this slide is from a review article that I and Professor Christopher Denton from London published. And I will walk through this slide.

The upper panel are patients who have early diffuse scleroderma. What you see is marked skin pigment. You see hand contracted in the middle and you see a person who had this diffuse scleroderma. And I will define these terminologies. For about 15 years, you will see pinning of the nose and pinning of the lips.

On the left lower panel is a patient or two patients who have limited scleroderma, something called "CREST syndrome," C-R-E-S-T. You see a little bit of skin thickening in the Panel B, but you also see evidence of what we call "tanglasia" in the gentleman on the left lower side, some nail changes and calcinosis

But what we worry quite a bit as clinician is the multisystem involvement with the digital involvement, Raynaud's phenomenon, digital ulcers. Unfortunately, amputation, GI involvement in the middle panel, lung fibrosis, pulmonary hypertension, cardiac involvement, cardiac fibrosis and lower panel renal crisis, disability and calcinosis.

SO as we talk about this disease, we must admit the multisystem heterogeneous involvement of this systemic autoimmune disease. Next slide.

So I only have one slide on pathogenesis of scleroderma. I must state that over the last 10 to 20 years, we have made leaps on understanding the pathogenesis of the disease.

Any autoimmune disease we think about an environmental trigger. We think about the role of your DNAs and your epigenetics without the environment of factors that are veritable but do not affect through DNA sequence, and that leads to in scleroderma what we roughly call, "tripartite pathogenesis" or a "three-pronged pathogenesis."

On the left side I'm showing you vascular involvement, vasculopathy. Almost everybody with systemic sclerosis have Raynaud's phenomenon. Unfortunately, some of them develop this digital ulcer as shown on the left side and marked and remarkable fibrosis of the internal vessels.

There is dysregulated immune system, autoimmunity with scleroderma auto antibodies and that results in fibrosis not just of the skin, of the musculoskeletal system, but also internal organs. Next slide.

So let's talk a little bit about epidemiology of systemic sclerosis. I'm focusing largely on or in United States.

The peak age of onset is 30 to 50 years with a female predominance of three to five to one. It is similar to other autoimmune diseases such as rheumatoid arthritis and lupus erythematosus. It's a rare autoimmune disease and this is the work done by Professor Maureen Mayes in Detroit, Michigan published in 2001 where she estimated a prevalence of 276 cases per million.

In Europe, it's a little bit less; 88 to 160. And if you look at that incidents which are all the new cases every year, there are only about 19 cases per million per year.

So here is my calculation. If we estimate 328 million people in the United States -- that's based on the Google search I did -- there are about approximately 6,000 new scleroderma people that are diagnosed every year. So truly an orphan disease.

It's quite heterogeneous as I showed you in the slide. And I think as a clinician who runs a very large scleroderma program, I'm reminded on a daily basis the high morbidity and the high mortality among all rheumatic diseases. Next slide.

So this slide is to classify. Classification is used by epidemiologists and physicians for clinical trial and for epidemiological purposes to define the prevalence, incidence and other aspects. But the slide is only highlighting that systemic sclerosis is not just skin involvement.

The first row shows you the skin tightening, but then there are other aspect: the fingertip -- the nailfold capillaries, the telangiectasias around the face and the palm, the lung involvement, the Raynaud's phenomenon, scleroderma autoantibodies. It's truly a multi-system disease that can affect different organs. Next slide.

So when as a clinician I see a person with scleroderma, the first question I ask myself is do they have systemic sclerosis? I use a classification criteria to help me, and then I further divide people into limited cutaneous, and diffuse cutaneous scleroderma.

One thing it's very important to clarify for the audience, limited does not mean only limited to skin. Limited as shown on the left side of the slide are people who may have finger, veins, forearm, face, and neck involvement.

On that -- and that's 60 percent of all the systemic sclerosis people that have systemic sclerosis in the U.S.

On the right side are diffused cutaneous which have a lot more skin thickening of the upper arms also and thighs. And there are five to ten percent of patients who have sine scleroderma. In other words, they do not have any skin thickening, but they have scleroderma antibodies and they do have internal organ involvement. Next slide.

So my patients come to me, you know, I spend about 60 to 90 minutes giving the initial visit, and it's important for us to do that because most of the things that happen in systemic sclerosis happen early in the disease.

Here is a distribution the natural history from University of Pittsburgh cohort provided to me by Professor Tom Metzger there and what I'm showing you, the diffuse patient where the skin thickening is progressing over the first two to five years, but more importantly, that's when people get lung fibrosis also known as interstitial lung disease, muscle involvement, tendon involvement, contractures, Raynaud's phenomenon, digital ischemia -- involvement, myocardial involvement.

And therefore, my role as a clinician without having very effective therapies is to really educate the patients and make them be aware that these complications may occur and I will go over my clinician viewpoint, how I manage these patients. Next slide.

Why we differentiate between diffuse and limited is because people with diffuse disease have a higher mortality due to higher and more progressive internal organ involvement. Here's a slide that shows diffuse scleroderma patients are more likely to have -- and heart involvement, renal involvement, large joint contractures and reduced survival. On the right side of the slide, are limited to cutaneous patients and the only combination that seem to be higher is pulmonary arterial hypertension, which is a later complication of systemic sclerosis. Next slide, please.

In our practice, we also look at the autoantibodies, scleroderma autoantibodies and that's shown on the left side and it help us to prognosticate that tells me as a clinician that you are more likely to develop pulmonary arterial hypertension. You are more likely to develop interstitial lung disease such as topoisomerase 1. You are more likely to develop scleroderma renal crisis such as RNA polymerase III.

I also want you to be aware of the right side of the slide where we have been looking at the gene expression. These are the branches that I'm very, very, you know, excited about that I can -- and other clinicians can define this from skin biopsy and blood whether you have fibrotic pathways that are activated or predominately inflammatory pathways that are activated. Next, please.

So here is one slide on a clinician viewpoint. You come to my office and apart from education, this is what I'm thinking. I need to screen you for early organ involvement. I cannot prevent internal organ involvement if possible. Can I reduce your disability, and can I decrease the progressive disease in the heart, lungs, and other organs? That is what I am thinking as a clinician.

And on the left side are patients with Raynaud's phenomenon, active digital ulcers, marked vascular arthrofibrosis of the -- pulmonary hypertension and we tend to use medications that are vasodilators, such as calcium channel blockers -- and all the pulmonary atrial hypertension approved medications.

On the right side are patients who have predominantly lung fibrosis, skin fibrosis, heart fibrosis, and we go to non-FDA approved medications such as immunosuppressant therapies; mycophenolate mofetil methotrexate, anti-fibrotic therapies, a new FDA therapy called nintedanib, or stem cell transplantation.

So this is my point of view as I am talking to you, giving the first year of your disease.

Can I prevent something? Can I screen effectively? Can I reduce a disability, and most importantly, can I decrease if you have lung fibrosis, can I stop the progression of the disease? Next slide, please. Next.

So here are two slides that had a big impact on how I tell -- how I think about and how I change my point of view of outcome measures.

This is a study that we did and we published in a journal called "Journal of Scleroderma and Related Disorders," where we asked people with early scleroderma how they feel. And here's a patient of mine that really touched me and he said, "It feels like all the time that I have a mask on and stretched out of shape, especially over my chest, lung, and expanding and not expanding. Of my body, this bit are the tightest." Next slide, please.

And I want to talk about the journey of a person who is diagnosed with scleroderma. The initial symptoms are non-specific fatigue, pain, constitutional symptoms, losing weight. You start to have puffy fingers, thickening of the skin, Raynaud's phenomenon. And this leads you to go to your primary care doctor. Primary care doctor sends you to a rheumatologist. Rheumatologist maybe a orthopedist send you to us. So there is a lot of misinformation. There is a lot of misdiagnosis, such as rheumatoid arthritis and lupus. There's a lot of frustration that is involved.

On average, patients take about one year from the onset of symptoms to come into our clinic. There are treatment that are not FDA approved and I think I really applaud FDA to have this be a meeting, and you can see what people feel; fearfulness, exhaustion, pain, unpredictable cause depression, limiting function, complications that are associated with the disease. Next slide, which is my final slide.

So as a clinician, as a trialist who has been doing clinical trials for the last 20 years, these are the lessons that are thought about last week when I was developing these slides. I think there is so much enthusiasm among the sponsors to do clinical trials of scleroderma. It's a wonderful time.

We have learned so much about pathogenesis, but it's getting difficult to find people who qualify because of an orphan disease. It is difficult to find scleroderma community because lack of expertise outside the scleroderma community. There has been marked heterogeneity in the traditional outcome measures we use.

You have seen me pinch the skin, you have seen us do lung function tests and I think finally the focus of this meeting is that there's lack of patients' voice as primary and provable endpoints.

So I thank you for your time. I have one more last slide thanking, you know, University of Michigan where I work and I look forward to this wonderful meeting. Thank you for the opportunity again.

MS. BENT: Thank you so much, Dr. Khanna. I think it's really helpful for us to have this presentation to set the stage for what we're about to hear from our panelists and meeting attendees who have lived experiences with scleroderma.

DR. KHANNA: Thank you.

MS. BENT: Thank you. Moving on, I'd like to share with you a bit more of how this meeting will proceed.

It's been truly an honor to work with the patient -- or the panelists that you'll meet in just a moment, as we've prepared for today's meeting, and thank you to Dr.'s Nikolov, Mullin, and Khanna for the really helpful presentation that give us some context to think about this next part of the meeting. It's really yours.

If you're new to this area of what FDA does and what medical product development is, then I hope we gave you a little bit of background on that and especially some of the key terms and words we'll be using today.

Before we kick off this next part of the meeting for those of you with lived experiences with scleroderma or systemic sclerosis or the stars of the show, I just want to share a bit of information in the terms of kind of an orientation to help you understand the meeting structure and why we set it up this way because it's very purposeful and intentional.

So for those of you that are here representing yourselves or your loved ones with lived experiences with systemic sclerosis or scleroderma, you are the experts and have the -- and the expertise that you have is what we're all here to hear.

We kind of flipped the script on the type of meeting that most of us go to where you have a lot of medical professionals giving presentations and having discussions while you listen. Today we reverse that.

We've heard some opening remarks from some experts in their field. But you are the experts in your field. You are the ones who know what the systemic sclerosis is like to live with.

So our goal today, as we start this discussion portion of our meeting, is to really foster an open dialogue of personal experiences and perspective on systemic sclerosis. Our two main topics for discussion are health affects and daily impacts of systemic sclerosis or scleroderma followed by current approaches to treatment.

We'll kick off each session with a panel of individuals with systemic sclerosis. There are five panelists for the first topic. After the panelists, we'll broaden the dialogue to include other individuals and family members who are joining us on this webcast.

Anyone who is watching the meeting who identifies as a person with scleroderma, systemic sclerosis or a family member, loved one is welcome to participate. Aside from the panelists, we don’t really have anyone else identified to speak, so we need all of you out there to kind of share your experiences in order for this meeting to be successful.

And the purpose of the panel presentations, it's really build -- or the purpose of the -- of the open dialogue portion, is really to build on the experiences shared by the panel. And I'll ask a number of follow-up questions.

Throughout the day, polling will be done by a computer or cell phone, and as I mentioned previously, we're taking comments from online through the meeting chat feature and via telephone if you've got something to add.

So this is your opportunity to really build on the kind of invitation that the panel will create to open up what is really a tough subject matter and we know that. Just feel -- feel the empowerment that you have in this meeting today to be heard not only by the FDA, but by representatives from medical product developers, researchers, and clinicians about systemic sclerosis and what you'd like to see happen to help those with systemic sclerosis.

So if you'll please take this opportunity and we hope that this will be your invitation to participate with us in the discussion.

So we really encourage you to call in by a phone to share your comments, and when speaking, you can remain anonymous. I mean, you don't have to give us your name. You may state your name if you want, but we really -- what we really care about is your experience. And so when you call in, there's a couple of things that will help us.

One is if you stay on the topic we're discussing, whatever topic we're talking about. If we're talking about symptoms or if we're talking about daily impact. Try to think about what that topic is and stay as close to that topic as possible.

Obviously, there -- you know, in a fully virtual setting, there's a little bit of a lag time, so there's some flexibility in that, but if we can stay as close as possible, that would be -- that would be great.

It's also helpful if you can keep your points to maybe just on one or two things so that we can go to as many people who want to speak as possible. And for transparency, we request that at the time of your first comment that you disclose if you're affiliated with an organization that has an interest related to systemic sclerosis or if you have significant financial interest in systemic sclerosis drug development.

If you're submitting comments via the webcast, you can provide whatever name you'd like. Don't worry about us being overwhelmed by comments. We can handle it. We'll try to summarize them as much as possible. We'll do our best to share the comments we receive via the web platform.

If for some reason we're not able to read all of the comments out loud today, your comments will be incorporated in our final summary report. So they definitely will be impactful.

And so now as Dr. Mullin mentioned earlier, we also have a public docket for this meeting that will be open until December 15th. We encourage you to share your experiences and expand on what we discussed today through the public docket.

The comments will be incorporated in our summary report as well. Anyone is welcome to comment through the docket, whether you're joining us via the web or you know someone who wasn't able to participate today, but you think they have something -- something to contribute. Please encourage them to submit their comment.

You'll find the link on the slide here and we'll also email this link to folks after the meeting, to everyone who's registered for the event on the website.

You can submit your comments as anonymous, and I want you to keep in mind that if you submit to the public docket, that is -- the word "public" is there for a reason, and this will go to the website. So please think about how much personal information you want to share.

And we don't need -- again, we don't really need your personal information again. We don't care what your name is or where you live. We care about what your experience is. So please keep that in mind that what's important to us is really your experience. So you can just say anonymous anonymous, or just leave the part when you have to put your name as empty.

So moving on to just a few ground rules for our discussion today. We're here first and foremost to listen to those with scleroderma, systemic sclerosis, and their family members. We'll try to accommodate everybody who would like to speak.

We're happy to see over 200 people on the webcast today, and some of those who represent research and drug development are also registered for this meeting. We believe that the input that you hear today will be important to you as well, and we just ask again that you stay in listening mode.

FDA staff is really here to listen. We know that you may have questions about drug development or drug review, and if you have specific questions, we encourage you to share them via email with our FDA staff. Our contact information is on the meeting website and we'll get back to you with more information following the meeting.

As has been described, our discussion today is focused first on the health effects of systemic sclerosis and daily impact and then approaches to managing those health effects. Our discussion may touch on some scientific treatments, however the discussion of any specific treatment should be done in a way that helps us to understand the broader issues, such as what health effects are being addressed and how meaningful that it is to patients and individuals and family members.

The opinions expressed here are personal opinions. Therefore, demonstrating respect is of paramount important. We very much appreciate what complex and personal topics we're addressing in this public meeting and we expect everyone to share this appreciation with us.

Our discussion is going to focus on health effects and treatments and we know that this is a very complicated issue and there are many concerns and many questions you have and things that you had to think about living with systemic sclerosis and getting the support that you need. These are all important.

Today we want to focus on the topics the FDA needs most input on so that we can best fulfill our goal in medical product development and decision making.

And so while you take in the information on the slide that outlines how to submit comments, I'd like to take the opportunity to ask my FDA colleagues on the FDA panel to turn on their video and introduce themselves starting with Dr. Nikolay Nikolov.

DR. NIKOLOV: Good morning, everyone. I think you have seen me already. My name is Nikolay Nikolov. I'm the director for the Division for Rheumatology and Transplant Medicine. I am really thrilled to be here and participate in this meeting.

MS. BENT: Rachael, I think you're muted.

MS. GLASER: Thanks. Sorry about that. Good morning. I’m Rachael Glaser. I'm a clinical team leader in the Division of Rheumatology and Transplant Medicine at the FDA.

DR. HULL: Hi. I'm Dr. Keith Hull. I am a medical officer also in the Division of Rheumatology and Transplant Medicine and looking forward to hearing the patients' input today.

MR. NAIR: Hi. My name is Raj Nair. I'm an acting team leader with the Division of Rheumatology and Transplant Medicine and happy to be here.

MS. SCHREIBER: Hello. My name is Shera Schreiber. I'm a medical reviewer in the Office of Tissues and Advanced Therapies within the Center for Biologics, Evaluation and Research.

MS. ROTHWELL: Hi. I'm Rebecca Rothwell. I'm the statistician and team leader for the team that supports the Division of Rheumatology and Transplant Medicine. Thanks.

DR. MEJIA: Hi. I'm Maryjoy Mejia. I'm am medical officer with the Division of Dermatology and Dentistry.

MR. TRAJOVIC: Good morning. My name is Snezan Trajovic. I'm a team leader in the Division of Dermatology and Dentistry.

DR. ILLOH: Hi, everyone. My name is

Onyeka and I'm an acting team leader in the Division of Clinical Outcome Assessment and the mission of our division is to integrate the vision voice into drug development, so I'm very happy to be here. Thank you, everyone.

MS. BENT: Thank you. From time to time during the meeting, we'll turn back to our FDA panelists to see if they have any follow-up questions or clarifying questions about what we just heard. I also want to introduce my colleague, Shannon Cole, who will be keeping an eye out for comments that come through the internet. She will be sharing those comments through the meeting.

She will also be coordinating with our other colleague, Lyna Merzoug, who you will speak to if you call in to provide comments via phone.

So let me turn to Shannon, allow her to introduce herself, and then we'll give everybody -- all of our FDA panelists a wave. Go ahead, Shannon.

MS. COLE: Good morning, everyone. My name is Shannon Cole, and as Robyn mentioned, I will be monitoring the webcast comments during today's meeting.

MS. BENT: Great. Thanks so much.

So we'll have some polling questions today and we're using a third-party application, Mentimeter, to run our polling. Polling on Mentimeter's site, menti.com, is anonymous and can be done via cell phone or on your laptop or tablet.

Please note that we're not tracking individual people's answers and we can only see responses grouped by option.

You can access the Mentimeter poll in two ways. You can use your cell phone camera to view the QR code on the slide which will take you to the survey, or you can go to www.menti.com and use the digital code on the slide to enter the survey.

For some questions, you'll have one answer. For others, you may have multiple answers. These polling questions are meant to be a discussion aid for today and are not a scientific survey.

So let me pause here and just make sure

that everybody has had an opportunity to see the QR code and make sure that they are able to log into the survey.

Okay. So with that, let's begin with a polling question. So please get your cell phones or computers ready and we'll move on to our first polling question.

I apologize. I have multiple -- multiple screens, so I'm going to look to the side to see the results of the polling questions occasionally, just so that we can -- we can discuss them.

So with Question 1, we're starting with some basic demographic questions, so that you can kind of get familiar with the polling platform.

The Question 1 is one, "Do you live in the Washington D.C. metropolitan area, including the Virginia and Maryland suburbs?"

And you have two options; we have "yes" and "no." All right. And there is a little bit of a delay between when we launch the survey and when we are able to see the results, just because it's about a

15 to 20 second delay. So we're going to give it just another -- another second or two to -- to see the results coming in and to see -- see how -- how it's working.

All right. So this looks great and it looks like everything is working. I'm hoping nobody is having any challenges with the application. It's usually pretty user friendly -- friendly application.

And I think that what we're seeing is really kind of one of the -- one of the biggest benefits of moving to this virtual setting, which is that most of the people who are on the call with us today are -- or on the webinar with us today, are not from the D.C metropolitan area.

A lot of times, we have a little bit of an overrepresentation in our in-person meetings. But it's clearly not -- not -- not playing out in our -- in our virtual meeting setting. So that's -- that's great. And I -- I hope that throughout the day we'll have additional people kind of maybe more the west coast people who thought that seven a.m. was a little too early to start a meeting will be joining us.

But I understand we have over 200 people on the webinar now and it looks like it's just continuing to grow. So -- so really -- really excited about the potential for impact for this meeting. So thank you all, and now we're going to move on to our next question.

So Question 2, "Have you or your loved one ever been diagnosed as having systemic sclerosis or scleroderma?" And again, "yes," or "no" are the two options here.

And we're just going to take a brief pause while the results come in. All right. All right. Great.

Okay. So from this point on, we're going to ask that each polling question be answered only by individuals with systemic sclerosis or someone who is answering on behalf of a loved one with system sclerosis or scleroderma.

And so we'll just give this a brief moment while we're -- while the answers are still coming in before we move on to Question 3.

All right. So now let's move on to Question 3, and it looks like, as you can see from this question, Question 2, we do have a really good variety of people on the meeting today, both patients and family members who are -- who are -- who are living with scleroderma and systemic sclerosis and also a lot of the regulators and medical product developers and others who are really interested in hearing what you've got to say.

And so that -- that -- that's really great and I think that it really kind of captures what we're hoping for in -- in the meeting.

So Question 3, "What is your age?" Now remember if you're answering for a loved one, please answer with their age, and just the -- just the age range is perfect.

And the options are "younger than 18, 18 to 30, 31 to 40, 41 to 50, 51 to 60, 61 to 70," and "71 or greater." And so this is -- this is -- we have -- we have great diversity in range -- age range. As you can see, we have a majority of people kind of in that 51 to 60 area, but 50 -- 41 to 50 is really also -- also close. And we have -- we have a lot -- good number of people on the 30 to 40 range and the 60 to 70 range as well.

So again, a great -- a great variety. A great -- a great spread of participation today and I thank you guys so much for that.

Okay. So now we're going to move onto our next question, which is, "Do you identify as male" -- or, sorry, as -- "as female, male, or other"?

And again, these questions are certainly not scientific. It doesn't really -- we're not using this in a study. It's really just for us to get an idea of who's participating with us today on the webinar. It's kind of -- it's kind of hard and a little anonymous to -- to kind of be in this virtual setting where you can't look out at a roomful of people and kind of see -- see who's there with you. So -- so this is kind of -- we're just trying to -- to decrease that anonymity and kind of -- kind of build a community of people all here together with a common purpose and a common goal behind it. Kind of move forward.

And so, but, yeah. Some of these questions are kind of a little weird, but they're really -- they're really just helping us join kind of come together as a community for -- for the duration of this meeting, because we are going to be talking about a lot of -- of personal things and personal experiences.

It's nice to be able to feel a little bit connected to the people who are talking and maybe hopefully feel a little bit more comfortable sharing your experiences because of that connection. So -- so great. We see -- we see a majority of females. We do see some males, and we do have somebody who identifies as other.

So again, what a -- what a great kind of diverse group that we've -- we've got going on here and I think that's great. And it looks like the -- the 20 to 30 second delay, we're kind of catching up with that and we're seeing -- seeing more and more responses.

So, so wonderful. And so now we're just going to move on to Question Number 5, which is, "What is the length of time since your diagnosis?" And the options here are "less than one year, one year to five years, five years ago to ten years ago, more than ten years ago," or "I'm not sure."

All right. And right now, it looks like the majority of the people have been diagnosed for more than 10 years, which, I mean, that -- that's a long time, but we do have some people who are recently diagnosed within the last -- within the last five years and then some -- about four people who are saying that they were diagnosed five to ten years ago.

So great. Thanks. Thanks for that. And thanks to everybody. We really just have one more question before we move to our first panel discussion.

And this question is a little more complicated and I'm going to ask that you let me read you the options for the answers because we ran into some technical limitations and couldn't put in much information into the answers as we had hoped.

So I'm just going to go ahead and read them to you. The question is, "Which subtype of systemic sclerosis or scleroderma have you been diagnosed with? Select all or any that apply."

And so "A," we have is "Diffused," which is defined as "Skin tightening or thickening affecting large areas of the body, organ damage, potentially to a GI tract, kidneys, lung, and heart, pain or arthritis, high blood pressure."

"B, Limited. Skin tightening or thickening is limited to fingers, hands, or face, heartburn, Raynaud's phenomenon, pain or arthritis, CREST syndrome, red spots on the body as a result of enlarged blood vessels."

Okay. "C" is "Sine, Symptoms of Organ Disease including Raynaud's phenomenon but no skin thickening."

"D" is "systemic sclerosis with overlap syndrome, which is an overlap of features of other systemic rheumatic diseases such as systemic lupus, erythematosus rheumatoid arthritis, polymyositis or Sjogren's syndrome."

"E" is "Other." And "F" is "I'm not sure.

All right. And it looks like right now what we're seeing is that we have a majority of people with Diffused. A good number of people with Limited. One person with Sine and about six people with systemic sclerosis with overlap syndrome. So that's great.

Again, we have a range of people participating today and I think that's what we really need to hear from. We don't need to hear from -- I mean we -- we understand that everybody has kind of -- kind of their own experiences with everything, and this will -- this will give us really a -- really a good kind of big picture idea of what people -- what people are -- are -- are experiencing and we hope that those of you who are participating in the polling will also participate with us actively in the discussing --

discussion.

So with that, let's start with our first panel now. And I'm excited -- excited to hear -- to hear from this panel because -- so as we mentioned, Topic 1 will focus on the health affect and daily impact of systemic sclerosis and we have the five panelists who will start off the session by sharing their experiences.

In about 30 minutes, when the panel is done sharing their experiences, we'll move into the interactive portion of our meeting by asking you about your experiences. And if there's something that you hear from a panelist that really resonates with you or you want to share a bit of your experience, please consider sharing your comments via the web or closer to the end of the 30-minute period. Maybe around 11:15, 11:20, maybe call into 1-800-527-1401 to share.

And you should know that if you call in to share your experiences and are placed on hold, the hold music will actually be this meeting. So not music, but this meeting, so you won't miss out on hearing from our panelists if you -- if you call in to speak.

And so with that, I would like to start by inviting Amy Gietzen to share her experiences. Amy?

MS. GIETZEN: Hi. Thank you, Robyn. So really my experience with scleroderma has been a difficult one. I was diagnosed when I was 19, so, you know, I was really young and just getting through a typical day with scleroderma and how that really impacts my life is, you know, it can depend on day-to-day.

So, you know, I have Raynaud's, which causes a lot of pain, numbness, sensitivity in my fingers and in my feet. But there's also weakness and pain in my joints and stiffness, making it hard to bend, to reach things, you know, to stretch, to kneel.

So things like that which really make it extremely hard to accomplish daily tasks. I also tend to get really terrible ulcerated sores on my fingertips and sometimes on my toes. So they're really painful and bothersome and they take forever to heal due to the poor circulation from Raynaud's and not being able to clot my blood because of the scleroderma.

So, you know, it's been really hard for me to kind of get through my day-to-day life. But I think, you know, if you have a good support system and you have people who are willing to help you and you have that positive drive just to get through each day, you can find ways that you never would have thought of to kind of make things happen. You know, like using gadgets or just doing things differently.

So, yeah. I think that that helps. You know, before I was diagnosed, I was really an active person and I was a dancer for many years. I swam for many years, and, you know, but with systemic sclerosis and being diagnosed at 19, you know, you start to realize that you can't really do those things that you wanted to do and that you enjoyed doing.

So dancing became quite difficult for me. You know, I had -- I had developed pulmonary fibrosis so it was hard to breath and keep my stamina up and, you know, one of my biggest heartbreaks with this disease is not being able to finish college. I was going to be a nurse and I just couldn't do it anymore. I was really tire, fatigued, I had a lot of problems with my hands. So it was a big regret.

You know, a good day for me would be just being able to get out of bed and do things myself and just kind of being able to go do something that I enjoy, you know, like shopping with a friend or, you know, having lunch with somebody.

And a bad day would really kind of be, like, me in my PJ's all day with my cats, watching TV because it literally hurts to breath, let alone get out of bed. So I think that that's, you know, it -- but it can change over time.

Like, you can have good days, you can have bad days, you can have things that you once couldn't do before, you know, or things that you never did that now you like to do. So I guess it all depends on what kind of person you are and how you want to get through certain things.

You know, for me, my disease, the changes were hard and fast in the beginning. I developed pulmonary fibrosis. I developed GERD along with reflux. Difficulty swallowing, tightness of my skin, especially around my mouth, elbows, fingers, and wrists.

And that kind of seemed to even out for about seven years, however, you know, I've never been symptom free. I've never not had -- you know, never not had an issue. So I know, you know -- I'll be reaching my 20-year -- you know, 20 years of diagnosis next February, so I think, you know, my symptoms have always still progressed.

Now I have pulmonary hypertension. I have a lot of heart issues. I have the telangiectasia, like, from the top of my head to the bottom of my toes. So I know I have contractures in my hands, which makes things difficult.

So I started to have symptoms, looking back now, when I was probably like 15 or 16, but I wasn't diagnosed until I was 19. So, you know, it was a little bit of a overlapping gap. Today I would say my disease is pretty well managed, but, you know, it's not really slowed down. But I have a really great team that kind of make sure everything is going according to plan and I stay really positive and on top of my medications and my treatments and I'm really an advocate for myself and my own body.

So I think that's really important if you're a person living with scleroderma. You need to be your own advocate and really speak for yourself. It's your body. You're living in it and you need to trust yourself in that you know, you know, what you're doing and you really need to be educated on scleroderma, because a lot of people don't know what it is. So thank you.

MS. BENT: All right. Thank you, Amy, for -- for being the first one to speak, but also, most importantly, for -- for sharing -- for sharing your experiences. There's a lot there and I think we're going to talk about it a little bit more -- more later, but now we're going to move on to Julie, who is going to share -- share her experience. Julie?

MS. JEFFERS: Hi. Good morning.

MS. BENT: Good morning.

MS. JEFFERS: Amy did a really good job. And I just want to say I'm not yet diagnosed. I'm trying to be diagnosed. That is incredibly difficult, but I do participate in some Facebook groups and from doing that, I have come to know that this disease affects everyone differently every day. And it's just really challenging and really difficult.

But there were some questions that were asked of us in order to participate, so I'm kind of -- want to go through those.

"Which aspects of systemic sclerosis have the most significant impact?" So for me, I use an alternative drug because I'm having trouble getting diagnosed and that's called "low-dose naltrexone and that controls the skin symptoms and -- for me. So my biggest problem is fatigue.

Robyn asked me to concentrate on that and when I say "fatigue," I don't mean I'm just tired.

I mean it's hard to explain how tired you are. You're tired when you wake up in the morning. You take a nap and you're still tired. It's just -- never ends, so fatigue, GI difficulties are significant, the shortness of breath is very limiting. The brain fog is another thing that's a problem.

I get dizzy when I drive. I have pain.

And the next question was about specific activities that are limited for me or I'm unable to -- for me the biggest problem is work. And the fatigue and the brain fog and the pain really limit my work. So for me, I have to limit my work, I have to change my work, I have to really concentrate hard on my work, which makes me more tired.

I have to reschedule work. Actually, I own a business for 23 years and I'm trying to sell the business because I really -- I can't run it anymore.

Other things that are -- other activities that are affected are -- you know, pretty much everything. Daily tasks, housework is really hard because, you know, your back hurts. Your joints hurt.

Everything hurts. Cooking meals, grocery shopping, I'm too tired to go grocery shopping.

You know, so on good days, I just want to say I'm still tired on good days. I still have to limit my work. I still have random brain fog. But on the worst days, I -- I -- I have to cut off things. I have to reschedule things. And I have to say that most days are bad days. There's very few what I would call "good days."

The next question is, "How has your systemic sclerosis changed over time?" Unfortunately, it's worse. It started a couple of years ago and then about every twelve months, it seems to worsen.

Next question, "Would you describe your systemic sclerosis as being well managed?" I use many things to help manage symptoms. I'm always looking for things to help. I use diet. I use, you know, try to exercise or stretch, at least. I see a Chinese doctor. He does acupuncture and cupping. That helps. Massage helps. You know, anything.

You are just constantly trying to find

things that will help. Sleep. You have to get rest and sleep.

So next question, "What worries you most about systemic sclerosis?" The heart and lung involvement is really, really worrisome. So ...

"If I could change one thing about systemic sclerosis, what would it be"? And it would be that. That heart and lung involvement. That's -- a really a worry and, yeah, it's the worst thing of that. It's just a big, big concern. So thank you.

MS. BENT: Okay. Thank -- thank you so much, Julie. I think -- I think that it was -- it was really -- it was really helpful for us to -- to hear about kind of all of the challenges that you're facing, particularly the kind of the overall fatigue and also all of the -- all the complaints, the things that -- that you're really kind of concerned about as you kind of work through -- work through the process.

So that was -- that was really helpful. Thank you.

Now we're going to go to Rosemary who

is going to share her experience. Rosemary?

MS. LYONS: Hello, everybody. Can you hear me all right?

MS. BENT: Hi, Rosemary. Yes, ma'am.

MS. LYONS: Very good. I may be the longest diagnosed person in this group; almost 35 years. And so the last speaker, Julie, talking about how it gets worse and worse. For me, it did get worse and worse in the beginning, but there were then periods that were good.

But it's still constantly a challenge and I call it the "daily maze."

Temperature -- just talking about how it is every day to live. So all the things -- all the decisions you have to make every day so you can get through a day.

Cold is a problem. I had the terrible ulcers on my fingers. I couldn't take the cold. It just painful. And moved 1,400 miles away from my family from the north to the south, because it was that bad. I had started to lose part of one finger. I was miserable. I couldn’t leave the house, but I had to leave the house.

I also have overlap syndrome, so I also have lupus and fibromyalgia. So I also can't take the sun and the heat. So now I live in a place where there's sun and heat, so I need to manage that.

I have a problem with artificial light. So sitting in an office environment, I would become very, very exhausted just from the overhead lights. I had them take out the -- the bulbs over my desk. Of course, they'd make fun of me for that. And I also have fevers. And that's probably the lupus.

So I never know when I'm going to have a fever and with the pandemic, my -- my fear is now I want to go someplace or get out an a plane or do something, and they're going to say, "You have a fever." So that's something I fear.

Skin issues, although initially, I had the hardening of the skin on my arms and my hands, that type of thing, and some pain just to my face, over time, that stopped. But my skin is very, very sensitive.

So I have to be cognitive of what type of fabric is touching my skin. And I have massive allergies: food allergies, skin allergies, all kinds of things. So I have to only use -- I've spent thousands of dollars trying this soap, that soap, this makeup, that detergent. Certain bedding, I can't sleep in a bed if -- if I can't tolerate the bedding. My shoes, I can't always have on closed shoes. So just getting ready in the morning for skin issues, is -- is a problem.

I may find something that works, and then it doesn't work anymore. So constantly I'm changing. As far as things that I like to do, going back to what Amy was saying, I -- I played the piano. I was pretty good and I -- I was a dancer and I did choreography.

And -- and that's something that had to go away a long time ago. I painted. I can do that a little bit. Just putting on jewelry is difficult. Buttons are difficult, so buying clothing, you have to worry about how you clasp it.

Housework, if I'm having a good day, I will choose to do some housework knowing that I will have one to three days of recovery. So I can do the housework, but I can't do the housework.

Food is the biggest problem. My biggest issue for about the last 10 years has been the gastrointestinal. So initially, it was the terrible reflux, feeling like I can't swallow the food. I had a very limited diet to begin with because of extreme food allergies. But now, it's the impaired motility, the digestion, and also the volume. So I -- I can really only eat one meal a day. To eat more than one meal a day is like emergency room time. That -- that bad. Yeah.

The other thing is -- and I was going to talk about when I had spoken about it with you previously, is my story about sleeping. So when I lived in the north, to go to bed, I wore pajamas and a big, fluffy robe with a hood with gloves, with socks, with slippers over that, under a bunch of blankets, plus an electric blanket. And then my face was still cold, so I ended up with a blanket over my face.

I couldn't sleep. I've never been able to sleep. I've had this problem all of my life. Now that I'm in the south, I -- on a 90-degree evening, I can get by with one blanket and two comforters. But I don't have to have the robe and the slippers and all of that. At -- at night, the cold is worse and I get terrible itching and I guess it's my blood vessels are -- go into a spasm. So sleeping and eating are giant problems, which, of course, it makes a whole cycle of exhaustion.

I can sit for so long or stand for so long or walk for so long. Some days, I can walk almost half a mile, and sometimes, I can't walk at all. That has a lot to do with the swelling and with the pain. Lifting is out of the question. Stooping is a risk of fainting.

As far as social activities, if I'm going to -- and, of course, I haven't now for seven months, but if I'm going to participate in something, I have to know is it inside or outside, will I have a place to sit down? I have to eat before I go so that I -- I don't eat something I shouldn't eat and then have a situation.

It takes me -- the gastrointestinal issues, three -- it used to be one hour, now it's three to four hours per morning to be able to be dressed and out of the house, because of the issues.

Travel, it's the same thing. How long is it going to be? Am I going to be able to use a bathroom on the plane, or is there a bathroom along the way? How strong am I going to be? And then the other thing is, is that there are medications for all of these different things, but I am allergic to many, many medications. It causes something much worse.

The other thing is when you've had an illness for this long, how long can you stay on some of these medications without having an adverse effect from the medication?

So in addition to that, fainting, seizures, brain fog, wild weight differences. At the very beginning of -- after my diagnosis, my weight went down to 94 pounds, but I've been up to 145 pounds. So it's -- it's all -- I -- I think I've evened out now. So I'm doing pretty well. But overall, the nose bleeds, I -- I don't know. There's -- there's a lot of things.

But I would say for anyone who is more newly diagnosed, you have the internet. My diagnosis was before Google. Someone said to me, "I think somebody who has what you have is in People Magazine." That was in the late '80s and that was all I had.

I went to the library. I couldn't even find anything on it. One of the first physicians I saw said, "Tell me about it. I've never seen this." So there -- there -- there's a lot more as far as resources and, you know, and -- and I guess the positive thing I'd want to say is after 35 years, I'm still here.

MS. BENT: Great. Thank you so much, Rosemary. And -- and we're -- we're all -- we're all very glad you're here. Both here and here at this meeting. So -- so thank you -- thank you so much for -- for sharing your experiences, and really for sharing, kind of, a little bit -- a little bit of ending on kind of a hopeful note, because I hope that -- I hope that, you know, that -- that things will continue to -- to get -- continue to get better, so -- so thank you.

And now we're going to hear from Amy Harding.

MS. HARDING: Good morning, everyone. I’m happy to be part of this discussion today. I'd like to share with you some more significant health effects and daily impacts of having systemic sclerosis that I have experienced.

I was diagnosed with scleroderma in 1998. I started having symptoms about a year before I was diagnosed. My primary symptoms were starting with my hands swelling and constant aching of my finger joints and my wrists.

I though maybe perhaps had carpal tunnel, because I worked on a computer a lot, but the blood work proved it was scleroderma instead.

Initially the pain in my hands and other joints, such as my knees and shoulders, tightening of my skin, digital ulcers, heartburn, and sensitivity to the cold had the most impact on my life. Twenty-two years later, I must say the calcinosis that I get in my fingers, my elbows, my toes, my ears tops any of the prior symptoms.

All other symptoms have been manageable through medications for the most part. Any activity involving the use of my hands has become more and more difficult. Opening jars is almost impossible. Typing, I don't know how many times I have to correct a word or two because I added an extra "M" or a "N" or some other crazy letter in there.

Bending at my knees is not easy and I find myself, I'm very cautious at when I do it, because I'm afraid that I'm going to fall over and potentially break something.

Dental appointments are extremely stressful. I recently had two dental appointments in the past month. I thought that my mouth was going to rip apart, because it's much smaller than it used to be. I can't open my jaw very wide. Fortunately, I did have a very good dentist that were, you know, aware of my situation and they were very kind doing the work.

Constant exhaustion. That has had a huge impact on my daily life. Heartburn -- daily heartburn limits what I can eat. The pain in my hands makes simple things like washing dishes difficult.

Occasionally, I have really good days, but it's difficult to figure out why yesterday was so good and today is so lousy. I just have never been able to get to the bottom of that.

On the worst days, depression really kicks in for me. I suffer from chronic depression and do take medication for that, but on my worst days, I don't want to interact with anyone. I mostly want to sleep so my mind shuts down and I don't have to deal with the realities of scleroderma.

There is good news, though. I'm happy to say at 57 years old, I have very few wrinkles because there is so much collagen in my skin. Skin tightening, though, has tapered off quite a bit. I don't experience digital ulcers like I did in the first 10 years of my disease. My Raynaud's and heartburn have gotten worse and the calcinosis just, for me, just puts it over the top.

I feel my scleroderma is managed as well as it can be. My multitude of symptoms are being managed with medication. Other things like calcinosis, I'm just hoping and praying for some sort of treatment or cure for that real soon.

My biggest worries about having scleroderma are not being able to take care of myself and dying young. If I could change anything about my systemic sclerosis, it would be the constant pain and the uncertainty about whether or not a new symptom will present itself today or tomorrow or the next day.

Thank you for your time and I'm happy to be here again.

MS. BENT: Thank you -- thank you so much, Amy. And that was -- I mean, you raised some symptoms that had not been mentioned before, and I think that it will be really -- really good for us to kind of explore as -- as we move forward in -- in the panel.

Now we're going to go to our final panelist for -- for this session, Kimberly.

So Kimberly, if you wouldn't mind going ahead and sharing your experiences, that would be great. Thank you.

MS. BENNETT-EADY: Certainly. Good morning, everybody. I just want to take a quick moment. Thank you so much to the other panelists for sharing. I've heard so much of my own story in yours and we're all connected. And I just want to thank you. Sorry.

I can't remember living a day without pain. For the last 24 years of my life, every single day I've experienced varying degree of pain. My self-examination, I've been living with pain longer than without it.

I can remember the onset of my symptoms

began when I was just 19 years old and a junior in college. It all started with what I thought was systemic virus. I was assured that I would feel better soon as I was hydrated and rested. I never felt better. If anything, I began to feel worse. And it is with every passing day it just got worse and worse.

And the travesty, I know there was something in my pain had also changed. The magnitude of my pain only intensified over the years and as my chronological age increased, ironically, my pain did the same.

This alarmed me. I knew that whatever was happening to me, it had to be terrible. I just couldn't put my finger on it and neither could any of the providers I visited. I was often dismissed, ignored, or belittled when explaining my pains. I heard things like, "You're too fat. You're just depressed. It's in your mind." But if you know me, then you can attest to the fact that I love finding solutions to problems.

So I spent the better part of another

six years trying to find answers and the symptoms that plagued me never diminished. If anything, they had become more acute.

I kept the severity of my pain to myself for as long as I could. I never communicated with my loved ones about the full extent of the torment I was experiencing. I felt alone in isolation, and I almost believed the disparaging remarks I received from the culmination of some of those doctors' visits. I started to doubt myself and I even shouldered it in silence for fear of receiving further trivializing remarks from those closest to me and I just couldn't do that, so I kept it to myself.

However, my pain was that bad. It was palpable. It was tangible. It was tethered to me. I knew that it was very, very real and after a traumatic experience of locking up in my bathtub for a half hour by myself -- I lived alone -- I finally revealed my truth regarding my pain.

By opening up and speaking out, I received a helpful key puzzle piece to help me close the searching chapter of nearly nine-year quest of trying to find out what's happening to me. I was told I needed to see a rheumatologist and request an ANA test based upon the symptoms that I had described.

And just 10 days before my 20th birthday, my beloved rheumatologist granted me the gift of knowing. I received my answer, I was diagnosed with systemic sclerosis.

I was a shell of who I used to be. My skin was taut, discolored, itchy, shiny. My movements were so stiff. My fingers had curved, and my dexterity was compromised.

In the nearly nine years I went without being diagnosed, I missed out on vital treatments. Irreparable damage had been done to my body. My lungs. My lungs are attacked aggressively. And at that visit where I received my initial diagnosis results, my rheumatologist decided to show me an X-ray of my lungs.

Well, my lungs were not visible. Instead, there were two murky clouds and they had these, like, random nickel-sized holes that resembled bullet wounds. That's what was looking back at me. And at this current juncture of my life, my lungs have continued to betray me.

I'm now in need of supplemental oxygen. Oxygen is being forced into my nose through this not-so-subtle cannula and -- because my lungs can no longer work independently.

This is a symbiotic relationship. Who am I kidding? I'm reliant upon this thing. Without it, I'd be like a fish out of water, gasping for air. Portable oxygen is my sustenance.

My lungs often cause me to feel full, so I no longer get hungry in the traditional sense. I usually have to force myself to eat or be prompted. And the constant coughing has made me quite fearful of eating a lot of the time. I'm fearful of aspirating into my lungs for fear of infection or regurgitation.

My chronic cough has interrupted way too many engaging conversation and ability from expressing myself at any given moment. It's so violent. Because of how suddenly and the impact of the assault of coughing, which in turn causes my body to writhe in pain, I swear I've injured and bruised a few ribs because of this cough.

Most days I don't feel well, but not everyone can detect that. Sadly, I masked my pain so long with an unassuming smile, people don't know that behind the smile is agony. There's intense level of pain that I can't control at all, and most days, I don't take any pain medication.

So I go throughout my entire day with horrible pain, and yet I'm glad to be alive, so the joy in my spirit comes through and I think that's what people tend to see.

But then there are some days, oh, my god, where I'm unveiled. Like, there is no mask to don. Those days are hardest for me. I stay to myself. Pretty much bedridden and would be able is like folding into what I can only describe as a hibernation type of deep sleep. It's my body's natural defense response to help me endure the extremely intense pain.

I never know what the day will bring, not until I make it to the next day. And when I do, I open my eyes and my first thought is, "Wow, I made it," and I'm super excited about that. I'm grateful, because I no longer have to live in survival mode. I'm going to live every day for it is; a gift. Thank you.

MS. BENT: Wow. So thank you so much, Kimberly. And there's a lot to unpack in these experiences and I think we really need to thank Amy and Julie and Rosemary and Amy and Kimberly for sharing their experiences.

And they did it -- did it really to help us move the field of systemic sclerosis forward. And so -- so thank you guys so much for that. And for -- for those of you that would like to comment or submit comments to be shared, as a reminder, here -- here is -- here is how to -- how to do that.

And so I guess now I'd ask, like, how many of you heard your loved ones own experiences reflected in the comments shared -- shared by at least one of these speakers? In a virtual setting, it's not really possible for me to see you nodding or applauding in the way that we usually see in some of our PFDD speaking meetings. So we're going to use some more polling questions to get feedback from all of you who are online -- who are joining us online. And again, polling is limited to participants who have lived experiences with systemic sclerosis either as users or as family members and loved ones.

And if you have thoughts to share related to discussion questions on screen, please submit them via the web or over the phone. And so I think if I -- if I recall, Shannon, do we have -- do we have anybody who wanted to come in and -- and share -- share some of their experiences as well?

I think if I recall, we have a call from a caller in New York. Is that correct?

MS. COLE: Yes, we do. We have an anonymous caller from Mayfield, New York. And they would like to discuss overall health effects and daily impacts.

MS. BENT: All right. So please --

please go ahead, Caller.

UNIDENTIFIED SPEAKER: Hello?

MS. BENT: Hello? Okay. So I'm not -- I'm not showing that we can hear the caller, so why don't we give our producers a little bit of time to kind of straighten out -- straighten out the audio issues. And what we can do is, Shannon, did you -- did you mention that -- that we had some -- received some comments online that you might need -- might be able to share with us?

MS. COLE: Yes. We have received a few comments online, so I'll go ahead and kind of summarize what I'm seeing here.

We received a comment from Rick who has had systemic sclerosis for 10 years and he -- he believes he's past the worst symptoms, but he continues to have flare-ups and contractures in his hands.

We also received a comment from Susan and she -- she had a rapid onset when she was 50 years old. It began with Raynaud's, which she didn't understand at first, and then she experienced horrific pain and swelling in her hands and fingers. It took almost a year for her to get diagnosed and during that time, she had skin tightening over her entire body and so much pain that it was difficult to work.

She was working full time in a demanding career and became so disabled that she eventually had to quit. Her arms, hands, stomach, legs were -- were hard like a rock, and she had contractures in her hands. She also had very bad fatigue.

Her face became so tight that it was hard to eat and swallow, and she eventually had such dental issues that she had to have nine teeth extracted.

So -- so that's -- that's pretty much what we're seeing on -- on the web right now and really hearing -- hearing people's experiences with their symptoms and many comments kind of discussing those -- those contractures in the hands as well as fatigue.

MS. BENT: Great. Thank you, Shannon, and thank you to those of you who are -- are sharing comments via the web.

At this point in time, I would like to turn to my FDA colleagues and just see if -- if they have any follow-up questions on anything that they heard from -- from our panelists.

Go ahead, FDA panel, or FDA colleagues, please.

DR. MEJIA: Hi. This is Joy from the FDA -- from Dermatology and Dentistry. The first panelist, Amy Gietzen, you had mentioned that you use gadgets to kind of help with the daily function.

MS. GIETZEN: Yeah.

DR. MEJIA: I’m just wondering what those gadgets were, how they assisted you, and if the other panelist had, you know, work arounds throughout the day, you know, ways to function better.

MS. GIETZEN: Yeah. For sure. Amazon is a wonderful place. But, you know, I -- my hands had a lot of self-amputations from sores. I don't know if you can see.

So I needed stuff to be able to do things independently because for me, I still wanted that independence. So my dad, he's really great. He helped me find, like, little gadgets to open pop cans or jars. We found, like, a little gadget to help me loop buttons into the buttonholes. You know, stuff to put your shoes on, to reach things up high if you couldn't reach them. He -- we -- we changed all the knobs, like, in our kitchen and doors to those ones where you just push down so I was able to open them, instead of the turning knobs that I couldn't do.

So I think you just have to work with, like I said, finding ways to still keep that independence and just kind of think about things in a different way.

MS. BENNETT-EADY: Yes, I agree with Amy. Gadgets are your friend. There are reachers that I have to use to grab stuff. There are automatic jar openers. I call them my "fancy-capable tools." Like if you want to open a soda can, it's -- the ones that help you open pill bottles. There's so much. And you also, like -- it's, like, ingenuity, right? So you get a straw, you put some tape on the end, you try to pick up that coin off of the ground because we can't grab it with our fingers and it's just amazing how innovative we are.

MS. BENT: Great. Great. Thank you, guys, for -- for answering that question.

Dr. Mejia, did you have -- have more questions or -- or -- or perhaps Dr. -- Dr. Nikolov has a question as well?

DR. NIKOLOV: Yes. Hi. Thank you for this -- for these moving stories. I think we're learning from -- from all of you and this is kind of the purpose of -- of this meeting.

I have one question. I think Amy Harding mentioned that she has calcinosis. I just wanted to find out how does that impact her -- in what way?

MS. HARDING: Sorry. Had to do a little work to get myself unmuted there.

Calcinosis, I primarily get it in my hands. Twice, two years ago, I had to be hospitalized because I was in such pain with it and, you know, they put me on some intravenous antibiotics and that sort of stuff to make sure that I wasn't getting an infection or anything like that.

But when I get it, it's really hard to explain. It -- it's like this -- this little rock is coming out of your fingers. And if you accidently touch it or hit it on anything, the pain just sends you through the roof.

I mean, literally, I actually have become quite good at getting the calcinosis to get to the surface. I either soak my hands or I wrap them in bandages with either Vaseline or, like, Neosporin, and then eventually I can pull the calcium out, which sounds kind of gross, but it's better out than it is in.

And I pulled out some pretty big pieces where it has actually brought me to my knees and put me in tears. It hurt so bad.

MS. GIETZEN: Amy, have you had them surgically removed? Like I've had some on my forearm that they had to kind of take out and then stitch back together.

MS. HARDING: Yeah. I had this thumb, I had some surgically removed. Would I do that again? I don't think so. Not that I can bend my fingers a whole heck of a lot, but this, you know, has -- I can't bend it at all. It's still a little bit numb.

And I don't blame that on the surgeon or anything. I knew what I was getting into. And I still get calcinosis in that thumb anyway. So it only took it away for, you know, maybe a couple, two or three years at the most.

MS. GIETZEN: Yeah. They can still come back, like this will grow back, so it's -- it's like a, you know, a -- waging a losing battle 'cause --

MS. HARDING: Exactly.

MS. GIETZEN: Yeah.

MS. HARDING: The worst case I did have, though, was in my -- most recently was in my big toe. I thought for sure that I had gout, although I'd never had gout in my life, but my big toe got really swollen and red and hot and it ended up being calcinosis in my toe. I couldn't put my shoes on. I could hardly walk. It was, yeah, just unbelievable.

And I don't know --

MS. BENT: And I think -- Sorry. Go ahead.

MS. GIETZEN: I was going to say, I don't know if I answered the Doctor's question or not, but that's what I go through.

DR. NIKOLOV: No. Absolutely. You know, this is what we want to hear. You know, how -- how all of these different symptoms that -- or how all of these manifestations you have affect you or impact you, your quality of life and functioning. So that was very helpful.

MS. BENT: Yeah. And I think Rosemary might have just a brief something to -- something to add regarding the calcinosis as well, so let me -- let me turn briefly to you.

MS. LYONS: Thank you. The first time I was aware of it, I -- I didn't even know what it was. I went to the doctor because I thought I had hurt my back, picking up my son. But I actually had it under my shoulder blade, and it was very painful.

So I've had it in my hand since then. I have it right now near my thumb. I also have three small spots in my kidney that I think that's what it is, too. But, yeah. The first time was the shoulder blade. It hurts.

MS. BENT: Thank you, Rosemary. So I understand that we -- we have somebody -- somebody on the line. I believe Isa is -- do we have you on the line so that you can share your experiences?

ISA: Hello? Hello?

MS. BENT: Hi. We can -- we can hear you, but if there's a way to -- that the audio can become a little bit louder, I think it would be helpful for -- for everybody. I'm -- I'm not asking -- I'm not asking you that. I'm wondering if it's -- the studio people can -- can work on that a little bit.

ISA: You guys there?

MS. BENT: Yes. Can you hear us?

ISA: Hello?

MS. BENT: Yep. We have you on the line --

ISA: Yeah. I'm here. Can you guys hear me? I can't hear you guys.

MS. BENT: We're going to play the telephone game, then, I guess. Lyna, if you could ask Isa to just go ahead, we will -- we'll -- we'll just go with that.

ISA: Can you guys hear me?

MS. BENT: Yes.

ISA: Okay. Sorry. Yeah. I have been a patient for five years and one of the things that I kind of live with on a daily basis is whenever I need to see a physician for general things; an example, this fall, I had a really bad cough, and I knew it was from -- I was in a farmland and it was from allergies and I needed some allergy medication.

So I called the local doctor's office

and asked to be seen. An my doctor was out, so I was going to see his PA. And when the PA got me the appointment, they immediately called me back within a half hour and said, "Oh, my gosh. You have such a rare condition. I don't feel comfortable treating you. You need to go to the emergency room."

So for something very simple that I knew I just needed general care for, I had to go to the emergency room, which led to a COVID test and a chest X-ray and blood work and actually thousands of dollars of expense because the doctors are so uncomfortable -- general practitioners -- treating us that I spent all this money for them to say, "Yeah. I think it's allergies. Here's the allergy medicine. Here's the prescription." And several hours later, I was able to go home.

My doctor in Chicago -- I see some wonderful, great specialists at Northwestern, but I can't wait three hours for allergy medicine. And so this often can be a problem when we have to go into a ER for a common thing or see a dentist or doctor, an eye doctor. They don't want to treat us.

And so the lack of knowledge day to day by the general medical population I find I'm educating them on my disease, and often, kind of leading them when asking them for the treatments that I'm needing, which is a really awkward situation to be in.

MS. BENT: All right. Thank you. I think that that really -- that that echoes, I think, kind of something that Amy Harding was touching on earlier about when she was talking about going to -- to the dentist and really having a specific dentist who understood the condition and kind of understood the -- the challenges that kind of went -- went with that.

And it sounds like -- it sounds like now, particularly with COVID, it's kind of added an entirely new dynamic as far as the challenges of receiving -- receiving routine care.

And I suspect, based on the number on -- on the backside of the meeting, I can kind of see our panelists who have -- who have their videos on and there was a lot of -- a lot of head nodding during -- during your -- during your -- your -- your kind of telling us about your experiences. So I suspect that this -- this is a -- an experience that really resonates with probably a lot of people out here.

And just based on kind of my survey of five faces that I see now, and the amount of head nodding that we've gotten. So -- so -- so thank you so much for -- thank you so much for -- for sharing that. It was really -- it was -- it was important for us to hear and -- and I appreciate you -- you calling in.

Just to everybody else who's on -- who's on the line, we're -- we're looking at the comments that are -- that are coming in and we're looking at the phone calls. If there are any comments that we are not able to get to as part of -- part of the -- the meeting, we will absolutely include them all in the Voice of the Patient Report so that everything that you contribute will be captured and kind of memorialized as an important component of this meeting.

Now before we move on to our -- our polling question, or our next set of polling questions, so get your -- get your cell phones ready, I wanted to turn briefly to Kimberly, who I think also wanted to make a comment about calcinosis or share her experiences very briefly -- briefly about that.

So Kimberly, can I turn back to you?

MS. BENNETT-EADY: Yes. Thank you so much, Robyn. I was just going to share that at any given time, five of my fingers are affected. And I use my fingers every day, all day, because I'm a visual designer -- X-designer, and I have to type.

And I find ways to, you know, use some of the fingers that are working relatively well, but Band-Aids, I have to rely on them, like, sometimes doubling them up so the cushioning, like, I don't feel the full impact of the pain. But, of course, there's still pain, but it's -- it's just very hard to do what I do and -- when I'm designing and -- I -- I push past it. I don't really realize it in the moment, but at the same time, it's like, oh, my gosh, like, I can't believe that I am using literally five fingers just to do my work.

And I think so many of us can understand that.

MS. BENT: Yes. Thank you, Kimberly. I think kind of putting it into context in a daily kind of impact is -- is really kind of -- it kind of brings home kind of the visual -- the visual of what the actual impact is.

So I think these -- and I am, I swear, I'm going to get to the polling questions, but I do think that we have one more question from one of our FDA panelists before -- before we -- we move on. So let me -- let me turn to our FDA panelist and see what -- what question you might have.

DR. TRAJKOVIC: Yeah. This is Snezan Trajovic. I've noticed that most of you complain about pain.

Can you describe this pain? Is it a pain that is all over the body or if it is in certain areas? I understand you have a lot of pain and discomfort in your hands, but are there any areas where you have pain? Can you describe that pain? Is there something that makes it better or worse or -- and how you deal with it?

MS. BENT: Go ahead, Amy Gietzen.

MS. GIETZEN: So I think for myself -- I can't speak for the other ladies, but for myself, it's almost like it -- I'm -- you know, I'm 38 but I'm living in somebody's body who's, like, 85. So I have the joint pain, muscle pain, stiffness, which causes pain, and then if I overuse my hands too much, there's pain. And it's like -- it feels like an achiness like -- like your body's worn down type of pain.

And I've tried a lot of pain medicine, you know, but that doesn't really make the pain go away. It just kind of makes you not really care that it hurts. Especially when you get digital ulcers, that pain is like a pain that is indescribable. It is almost like a nerve pain as well as if you got like a little blow of air on it, it is excruciating.

So, I mean, I think it differs for everybody, but I think it's just like a constant achy stiffness of feeling like your body is just worn out.

MS. BENNETT-EADY: For me, it feels like -- to add onto what Amy's saying, it is an ache, but the pains vary. So sometimes, it's muscle and bone pain. Sometimes it feels like bone and only, or just muscle pain, 'cause you're so inflamed, like, you can actually see your skin, like the raises, the inflammation, like if you're having an extremely bad day, you can touch it and you can feel the -- like the lumps of your tissue. It's excruciating.

So think about when you have the flu and how everything hurts and you just -- the fatigue, the pain, everything associated all at the same time, but magnify that by, like, a gazillion, and that's what it feels like.

MS. BENT: I -- so thanks. Yeah. I was going to ask if anyone else had anything to add, so Amy, please go -- yeah. So I was muted when I started to ask, so sorry about that.

MS. HARDING: That's okay. I -- I agree with the two ladies. For instance, what hurts me the most, you know, I used to have all the muscle pains and all that, but now, I have a lot of pain in my hands. It's as if all the skin that was on my hands to cushion the bones is no longer there and it's like you're hitting your raw bone on something accidentally.

Like if I reach into a cupboard and I hit the shelf accidentally, it -- the pain is -- it makes you want to scream. It's just so -- it's hard to explain. There are -- there are no words to explain it. It just radiates throughout my hands and up my arm and -- and, you know, it'll stay like that for, you know, a good five minutes and I'm dancing around the kitchen trying to shake my hands so they feel better.

So it's just -- it's just an enormous, enormous amount of pain that we live with.

DR. TRAJKOVIC: Thank you very much.

MS. BENT: Thank you, ladies. And I suspect that we'll be back to you in just a moment, but I did want to at this time kind of move on to a polling question, which is -- which is "Of all of the symptoms you've experienced because of your systemic sclerosis, which do you consider to have the most significant impact on your daily life?"

And so for this question, as the polling question, please feel free to choose up to three answers. The first one -- option being, "A, hardening or tightening of patches of skin. B, skin thickening. B -- or C, digital ulcers, D, painful cold sensitivity in hands or feet, Raynaud's phenomenon, E, heartburn or difficulty swallowing, F, digestive symptoms such as cramps, bloating, diarrhea, constipation, G, arthritis, H, fatigue, or I, other symptoms not mentioned."

And for our panelists, if you want to look down at your cell phone and -- and participate, that is -- that is perfectly fine as -- as fine as well.

Let me -- let me kind of go over here. Sorry, looking away so I can see the results.

And it looks like -- it looks like what we're seeing is -- is that we have about 20 percent of people with -- who are -- who have identified Raynaud's phenomenon as one of the most significant impacts. 16 percent of -- or, sorry, 18 percent of people looking at digestive system. 16 percent fatigue. And so I think that that is -- that sounds consistent with what we heard from both Dr. Khanna at the beginning and also our panelists who are -- who are talking about it.

But it also looks like there is a -- a broad range across of -- which are the most significant -- which symptoms have the most significant impact.

And so with that, while you guys are finishing up the polling questions, I know that we have a caller on the line, Laura, who would like to share kind of some of her experiences and things, so let me -- let me turn now to Laura.

Please go ahead.

LAURA: I was out of the bell curve

age-wise for receiving this diagnosis of the diffuse systemic scleroderma. I was 60. And before I started having symptoms, about four or five months before this diagnosis, I didn't have any healthcare providers caring for me. I was on no medication. And within a very short period of time, from this diagnosis, I have the interstitial lung disease. I had to go on oxygen 24/7 at 4 liters. My skin is tightening. My hands are becoming deformed. I have all the internal organ issues that we're hearing from the other panelists and folks calling in.

Mine have gotten so severe with the GI tract and my bladder that I have incontinence with the bladder and the bowel, so that dramatically changes your quality of life and confines me to my home a lot of days when I'm dealing with those types of issues.

And with systemic scleroderma, what I haven't heard from anyone is how -- besides the typical other autoimmunes that we deal with Raynaud's and Sjogren's and stuff, our medications that we have to take just to stay alive and just the disease process in itself of the scleroderma, we can have other very serious diseases happen to us as well.

And this summer I was diagnosed with multiple myeloma, which is cancer of the bone marrow and my kidneys. So I am dealing with those challenges as well now.

So this disease is so multi-diverse and with some of the support groups that I am involved with on social media, I find that those folks that are not in a large community where they might have access to university medical centers or multi-specialty facilities, that you have physicians that have never seen our type of problem. And we are very challenged with getting diagnosed and getting on the medication sooner rather than later so that we can help avoid some of the progression of the disease.

I have not had to deal with that, but I was in a very -- my career was a very rewarding one. I worked in the medical field for 49 years. I had to medically retire from that after getting this disease and getting so ill. I also had a private practice for

19 years as a massage practitioner, seeing patients with life-limiting diseases, and I had to close that practice.

The governor appointed me to work with the Department of Health for two terms for the State of Washington. I was also an instructor in massage, and I had to -- to resign from all of these positions. I also worked at a national level and I had to resign from that position. My body, I do not have the energy or the strength or the stamina to do these types of things that I so thoroughly enjoyed before.

It has just completely devastated my career in every aspect, and I have had to move in with one of my children who has helped when I am needing it because of this disease.

MS. BENT: Wow. Thank -- thank you, Laura. That was -- that was -- I'm sure -- I think that that really kind of picks up on the thing that we heard, that it's not just the health symptoms. Its' kind of all of -- all of the implications that the health symptoms kind of lead to and the limitations that -- that -- that we're hearing from -- from our panelists and others.

So it's more than just the health impacts. So thank you for that.

And now I would like to turn to Sheri who we -- is also on the line to kind of share some of her experiences and thoughts.

SHERI: Hi. My name is Sheri and I'm from -- can you hear me?

MS. BENT: Yes. Yes. Sorry. Thank you.

SHERI: I'm from Farmington, Michigan and I actually am blessed to have my scleroderma. I have limited scleroderma which mostly affects my -- I love the term "limited," first of all. When you say "limited" to someone with scleroderma, they just don't feel like that does it. I hate the word "limited." It's limited to my fingers, obviously, my GI tract, but what everybody is saying today is just such an inspiration to me.

I do get my care at the University of Michigan, where Dr. Khanna spoke earlier, and if it wasn't for that university, I don't know where I would be with my healthcare.

Laura, I could really hear what you were saying. You need to get quick health, and I actually moved from Arizona to be under this umbrella of comprehensive scleroderma clinics that -- I don't know where I'd be without it.

But what I wanted to talk about was my Raynaud's. Raynaud's to some people, if they don’t have scleroderma, is just this blue, pink, white change of finger color. But if you have scleroderma with Raynaud's, it's much more crippling than what it sounds like.

Obviously, you're not getting the blood flow to your fingertips. I get calcinosis under my nails and it feels like you hit your finger with a hammer, and you need to almost drain that blood. That's what would happen to a normal person.

Well, I get that with every flare-up of calcinosis that I get. And although the medical staff hates this, I drain it just so I -- I believe Amy was saying -- and I drain it myself because if I go into the ER with this pain, nobody wants to touch a finger that looks like it's infected. They don't know that it's liquid calcinosis that looks like toothpaste. So I just do it at home, and it saves everybody a lot of time.

The other thing I do to improve my Raynaud's is I get an IV infusion -- it was called Flolan, the medication, but now I believe it's --

And I believe Europe has it already in effect, and I don't know if the FDA has approved it here, or how it all works. But anyways, I checked myself into the hospital and get the infusion of --. They have a 30-hour infusion now and it's given through an IV. I don't have a port for it. And most people can do 30 hours and it's fine.

For some odd reason with this very individual disease, I had to go for the five-day infusion where you just do, like, six hours a day. And with COVID, nobody wants to be in the hospital for that many days.

So I've been going without and I know my neuropathy is terrible. You don’t know how many dishes I have broken, and my husband is just, like, "Forget it. I'll do the dishes for you, honey." So that's a pro, right? Right there.

But building your social -- somebody was talking about your support system. And you know, I think all of us with this immune -- autoimmune disease that's life altering, we not only need to find what our new normal is, but I think you would agree that we have to get a support system that really will give us what we need to make it through.

And we're part of a peer mentoring program at U of M. I don't know if other places have it or not, but I hear a lot of you saying you're on Facebook group as well. And Laura, I'm with you, I need someone to tell me that they have incontinence.

When I pooped myself at 40 looking for my child's first bathing suit for his swim meet, which I'm still going to do, I want to know that there's someone else out there that did this. You know? And that just helps us mentally move on.

I could talk for hours about this disease. If you saw me, I don't look sick, but what I do is find my new normal. I find the support I need and the medications that we need, and I also agreed with someone else. What if I take the small purple pill for 40 years? What's that going to cause, right?

So anyways, I just wanted to thank all the panelists. I wanted to share a little bit about my experience and I put in another question about bone grafts. So if somebody finds that, I'm just curious if anyone has had bone grafting in their mouth and if they could share that experience.

Anyways, have a great day. Be blessed. Thanks.

MS. BENT: Okay. Thank you so much. And I -- I would like to just touch on the fact that the reason that these panelists did not speak a lot on treatment is not because they don't have extensive experience with multiple different treatments, but because we asked them to kind of focus -- stay focused on the Topic 1 Session that were really focusing on the health effects and daily impact.

In our second session, will be -- will be treatment, and so -- so I guess I just wanted to put that out there so -- so that you know that obviously, everybody who is here on this panel certainly has kind of extensive thoughts and -- and experiences with the -- with the -- with the treatments, but -- but -- but we're just kind of -- that's our post-lunch, kind of, conversation.

So with that being said, I didn't know if I can -- I can turn back to you guys on the panel and see if you had any experiences with -- with what -- with what Sheri was asking about or -- and then I do think that one of our FDA panelists also has -- has a -- has a follow-on question.

So anybody have any -- any thoughts related to what we heard from Sheri?

Okay. Go ahead, Amy Gietzen.

MS. GIETZEN: Yeah. I think she was correct in saying, like, it's amazing to have a support system. I have my parents who are amazing and my dad's retired, so he's kind of like my travel buddy. But, yeah, I work really closely with the Scleroderma Foundation and I do a lot of virtual support groups with young adults and I work very closely with a bunch of other organizations, with the SPIN organization out of Montreal.

You know, I think it's really important to find support where you can, whether it be on Facebook, whether it be your local scleroderma support groups, whether it be seeing a therapist. I think, you know, you need somebody to talk to, even if it's another patient that you kind of just connect with.

It's so important to be able to be -- feel like you're being heard and like somebody is taking your -- your truth or your journey into consideration. You know what I mean? Like I think that's so important.

MS. BENT: Okay. Thank you. Thank you. So let me -- let me turn now to our FDA panelist. Onyeka, did you have -- did you have a follow-up question that you wanted to -- to touch -- ask our panelists while we -- while we still got them?

DR. ILLOH: Right. Yes. Thank you, panelists, for sharing your inputs and this is so informative. So I guess my follow-up question is in terms of Raynaud's attack, are there other stressors that will trigger a Raynaud attack for you guys other than cold? So I'm just curious if you guys have any other stressors that will trigger that.

And then the other question I have is for some of your symptoms, for example, fatigue, I would like to know if -- in terms of the frequency of occurrence of the symptoms, are there days where the severity of your symptoms spike up and other days where it's better? So just wanted to know how, you know, if there is fluctuation in the occurrence of some of your symptoms, for example fatigue or pain. Thank you.

MS. BENT: Go ahead, Rosemary.

MS. LYONS: Sorry. The unmute didn't want to work.

As far as the spikes in the fatigue, once that starts, there's nothing you can do. And you never can predict it, or at least I cannot predict it.

So I can be having a good day and it hits me and that's it.

And the first part of her question was -- because I had a comment on that, too, but I also have a brain fog.

MS. BENT: So that was the Raynaud syndrome and whether it was just triggered by cold or if it was triggered by other -- other items or --

MS. LYONS: Oh, no. No. It's definitely -- because I left the cold world to come to the tropical world and extreme stress, an emergency, anger, lots of things. I can actually see it happening and I don't always realize it's happening and somebody else sees it. They can see my hands turning colors and things happening to my hands.

I also have things happen to my face. I -- on and off, I have the lupus rash for my face, but no, it's not just the cold. All types of stressors can set it off and just put my hands into total spasm.

MS. BENT: Okay. Thank you. Did anybody -- did anybody else have anything they wanted to -- to comment on in response to -- to the question or else we can move on. We will move on. Kimberly?

MS. BENNETT-EDAY: Yeah. I just wanted to add if I had too much caffeine or too much sugar, that will also cause, like -- like more pain.

MS. BENT: Okay. Thanks, Kimberley. And I see some -- I see some nodding with some of the other panelists, so it might be that that is a -- that is a shared experience as well, so -- so thank you.

Did you -- sorry. Sorry. Did you have any -- any other follow-up questions or --

DR. ILLOH: No, that's it. Thank you very much. Thank you.

MS. BENT: Great. Thanks so much. So right now, we're going to move on to our next polling question and following that polling question, we're going to -- we're going to go to some of the comments that we've received online, because we have received a lot of comments and I want to be able to share them with you.

So moving on to Question Number 8, which is somewhat similar to -- to the -- to the previous question, but there's -- there's a little bit -- there's a little bit of a difference in that this one is asking for you to focus on the single symptom that you consider the most bothersome.

And I suspect that we may have missed a few of -- few of the symptoms that are -- are bothersome to people based on the conversations so far, but -- but anyway, let's do the questions.

"So for all of the symptoms that you have experienced because of your systemic sclerosis or scleroderma, which single symptom do you consider the most bothersome?"

And again, the options remain the same as for the previous question, with "A" being "hardening or thickening of patches of skin," "B" being "skin" -- I'm sorry. First it's "hardening or tightening of patches of skin." "B" would be "skin thickening." "C" would be "digital ulcers. D, painful cold sensitivity in hands or feet, Raynaud's phenomenon." "E" would be "heartburn or difficulty swallowing." "F, digestive symptoms like cramping, bloating, diarrhea, constipation, G, arthritis, H, fatigue," and "I, other symptoms not mentioned."

And so looking -- looking at -- looking at that, it looks like -- there we go. So it's -- sorry. I'm still -- the digital ulcers seem to be a very bothersome symptom. I -- I feel like bothersome is really kind of an understatement of the impact of -- of that, but so digital ulcers seem to be -- be a large -- larger percentage of people find those the most bothersome. Digestive symptoms about the same with the arthritis and the Raynaud's phenomenon also being significant.

Now we -- we understand that obviously asking you to pick one of off a bunch of hugely impactful symptoms is -- is difficult to do and it's certainly not to discount kind of the -- the challenges of all these symptoms together as well.

But looks like that's what we're seeing. Raynaud's phenomenon is now up to 10 to 15 percent. And so while we're waiting to get some additional feedback on this polling question, let me turn to -- to my colleague Shannon and ask her to provide us with a idea of kind of the comments that we're seeing online from people who are participating through the webchat. So Shannon?

MS. COLE: Thank you, Robyn. As I mentioned earlier, we are planning to incorporate all of the webcast comments into the -- the meeting summary report. But I wanted to quickly summarize some of the key themes that we're -- we're seeing in a lot of these comments, such as difficulty sleeping and Raynaud's phenomenon.

One participant mentioned that air conditioning and stress can trigger their Raynaud's. I'm also seeing comments about gastrointestinal issues, such as heartburn and bloating and -- and also some symptoms involving the mouth, such as a dry or shrinking mouth and the roots of the teeth are reabsorbing.

Participants are also speaking about fatigue and the excruciating pain of calcinosis. We're also hearing about the importance of early diagnosis as well as extreme pain in the joints and the muscles.

One participant also mentioned that walking has become difficult because it -- the cushion in their feet has deteriorated and it feels like they're walking on bones. And I wanted to just read one -- one comment that kind of catches all of these key things in one -- this -- this anonymous participant is -- has had systemic sclerosis for 24 years. They have GI involvement, pulmonary fibrosis, Raynaud's, calcinosis, dry mouth and eyes, fatigue, skin tightening and occasional joint and muscle pain.

Raynaud's is the worst symptom and has been on five different medications at a time, but they still do not feel that their condition is well managed at this time. They have frequent digital ulcers, which take forever to heal and have caused permanent damage, pitting, and scar tissue on their fingers. And they say that the impact is cumulative. It's impacted their -- their job and -- and their lifestyle and that the calcinosis makes it extremely difficult to use their hands as any pressure put on their fingers causes nerve pain.

They also talk about GI symptoms, difficulty swallowing. They need to drink after every bite of food. And they eat small amounts throughout the day, and can't eat a regular-sized meal because they have delayed gastric emptying. Also difficulty not feeling hungry and having reflux after they eat a larger meal.

So those -- those are kind of the -- the things that we're seeing on the webcast at this time.

MS. BENT: Great. Thanks so much, Shannon, and I think that that was -- that was really comprehensive, and I feel like maybe that kind of helped us understand it's again, one of the -- one of the frustrations of the virtual setting is that we have about nine percent of people who have identified

"Other" as the symptoms that are -- are most bothersome, and I don't really know that we have a way of getting feedback from people. I mean, if you did identify "Other" and you can type into the chat what you -- what you would consider "Other," that would be -- that would be really -- really helpful for us.

Let me turn briefly to -- to the panelists and see if they have any thoughts, if there was anything that -- if they have any thoughts or if they would have chosen "Other" if they -- what "Other" would have meant to -- to them.

So -- so let me -- let me -- let me turn there again. Oop. Sorry. My office is falling apart. Apologies for that. But so let me -- let me turn to you guys. Do you have -- do you have any thoughts on these results? Do you think that these results really are reflective of kind of your experiences for those of you who are involved in support groups? Do they -- do they seem kind of reflective of the experiences that you -- that you know of from -- from others?

MS. GIETZEN: Yeah. I think so. I think that if I had to pick -- if I picked the "Other," for me it would probably be my pulmonary issues, difficulty breathing, things like that. It's not always just about the skin, but I know with scleroderma, the main focus really kind of is the skin, because it's a big issue.

But, yeah, it would be my -- my breathing and then I have had some cardiac issues where I've had extra beats or I've gone into tachycardia from -- from fibrosis in the heart. So that would be a -- one that I would probably consider "Other."

MS. BENT: Okay. Thank you. That's really -- that's really helpful and I think that with that, actually, I -- it turns out that it is actually -- it is 12:15 and we have actually kind of made it through -- or I don't want to say made it through, because this is really a valuable session. I kind of wish we had -- we had -- we had given it a little bit more time. But I feel like the -- I want to make a quick plug for our docket comments reminder as well as the comments that you guys are submitting on the web, because I think we really -- I mean, it's clear that we've really just barely scratched the surface as far as the daily impact and get what you guys are experiencing day to day.

So for those of you who are online, if you want to submit comments either through the webcast comment or if you want to submit them to the -- to the federal docket, the public docket, to expand upon kind of what you've heard, that would -- that would be -- that would be wonderful.

And I would just like to take this opportunity to very, very much thank our -- our amazing panelists who really took their time today and took their time, really, over the last few weeks to prepare all of their remarks and -- and really think about this and really just open themselves up to kind of -- kind of help us have a better understanding of this.

And thank you to all of you who have

participated online thus far and with that, I just want to say thank you and we have a 30-minute break that's probably now going to be a 28-minute break in order for everybody to go and kind of take a little bit of the break. Hopefully get a little bit of lunch or at least a sip of -- a sip of water and we'll be back here at 12:45 eastern time. So thank you so much and I will see you shortly. Thank you, everybody.

MS. GIETZEN: Thanks, Robyn.

MS. BENT: All right.

(Off the record.)

MS. BENT: -- had a -- a good break. We have limited time, so we're going to move straight into Topic 2.

As we mentioned, Topic 2 will focus on current approaches to treatment of systemic sclerosis or scleroderma, your experiences and your perspectives on that, what you'd like to see in an ideal treatment, if future treatments could be better, how could they be better.

And we have five panelists who will

start off the discussion by -- by sharing their experiences and their thoughts. Before we launch into our panelists' experiences, I want to let you know that our first question for the open discussion session is actually three sets of questions, and it's "What are you currently doing to treat your systemic sclerosis, how has your treatment regimen changed over time and why, and what symptoms would you like most -- would you like to be improved or resolved by treatment."

So now we're about 30 minutes away from people sharing their answers, but if you're interested in responding to that question, please consider sharing it via the internet or by calling into the 1-800-527-1401 number.

So now I would like to start by inviting Monica to share her experiences. So Monica, go ahead.

MS. CICCHETTI: Hello, everyone. Can you hear me?

MS. BENT: Yes. If we could just have

our other panelists mute their phones right now. Perfect. Go ahead, Monica. Thank you.

MS. CICCHETTI: Thank you, Robyn. First, I would like to thank the FDA organizers for giving me the opportunity to be heard. I was diagnosed with scleroderma three years ago. Twenty-two years before that, my father had passed away of scleroderma.

Through this time, I learned that there is a lot I can do that will determine the quality of my life. So I decided to focus on lifestyle. First on the physical level, I moved to change my diet, sleep, and exercise.

We all know that diet is important and I needed to find one that would be good for my GI symptoms. After trying many, many different types of diets, I ended up taking parts of many diets and making one that my body would like.

Planning meals, shopping, cooking from scratch, cleaning, these are time consuming, but none of it would make a difference if I would not get relaxed in my mind while eating. I became a professional chewer. I really chew on food very well. If I would not do that, I would not be able to swallow my food very well, my digestion would be less efficient, I would have serious problems absorbing food nutrients.

So no more driving while eating in downtown L.A. for me. Instead, I pray. I feel grateful for having adequate food, healthy food on my table.

Another change in my lifestyle, sleep. Even though I cannot fully control if I'm going to wake up at night because of symptoms, I can control the time I go to bed. When I don’t sleep well, I literally feel like I am dragging my feet uphill all day long. My thinking, my speech are not clear and I get so tired that I get irritable.

So I often compromise in not spending the the time around the TV at night with my husband, for getting more sleep, and it pays off.

And exercise. I have a wide variety of exercise routines that I can practice. I can go out for hikes or walk for Tai chi in good weather. If not, I stay home, and I practice yoga. And if I am too weak for yoga, then I can do chair yoga. And I also practice yoga breathing exercises which can increase moisture in my mouth, in my eyes.

By the time I am done, I feel good, with more energy, which is precious when you have an autoimmune condition. Now if I lose focus, I don't exercise regularly, my joints will give me a reminder. I can't -- I get to a point where doing anything feels like a chore. So I have to keep moving all the time.

Mental and physical health go hand-in-hand. So another partner in my life is my mental wellbeing. My emotions. I attended workshops for stress, anxiety management. I recently had counseling during COVID quarantine. I also practice being patient and mindful regularly.

It is not that easy at first, but if you press on and you do not try too hard, it gets easier with time. You can be mindful while walking, observing nature, and while eating.

If I stop all practice, my mind starts

wondering, it works overtime. I start to worry about the future, and I don't like that. The simple act of breathing deeply promotes salivary secretion, supports self -- factor helps our immune system, reduces stress and inflammation as Dr. Sander -- found in his research book.

Last, I would like to talk about my spiritual life. I found that a deeper way of dealing with stress, anxiety symptoms and the way of having a more meaningful life is by living in peace with God, with myself, with others. Practicing meditation, mindfulness, getting closer to nature, and prayer gave me that peace.

This is one of the best things that I hope that I could have done in my life for myself and my loved ones. I was sure that if you would like to do something for yourself, you should let someone in. And if you would like to do something for others, you should better yourself as a person.

Finally, I would like to share that I am grateful to have a mild type of scleroderma and I do not take medications, although I take supplements to support my nutrition. So I have the luxury of managing my symptoms with lifestyle and I do not have to take any risks related to medication or treatment side effects.

Again, thank you so much for this opportunity. Blessings to you all.

MS. BENT: Thank you so much, Monica for sharing your thoughts and experiences. And we're now going to move on to -- to Demi.

We are having a few audio issues, so we're going to see if -- if Demi's audio is -- is great, and then if not, then we might move on to Anita and come back to -- come back to -- to Demi. But go ahead, Demi. We'll give you a -- we'll give you a -- the audio a chance. Do you want to unmute? Yeah. There we go. Go ahead.

MS. TRICE: The aspects of my sclerosis that impacts my life the most is a --

MS. BENT: Stop.

MS. TRICE: Can you hear me?

MS. BENT: It's a little rough. Maybe if we could have you log off, like, fully and log back in and we can maybe move to -- move to Anita, because I really want to make sure that everybody can -- can hear your experiences and your story and I'm afraid that with the audio issues, it might just -- we might not be successful.

So Anita, is it okay if we can move to you and then kind of, Demi, if you don't mind, kind of completely logging off and logging back on to see if that -- that will help the audio. That will be -- that would be great.

MS. TRICE: Okay. Thank you.

MS. BENT: Sorry about that. Thank you.

MS. TRICE: Sure.

MS. BENT: Thanks so much, Anita.

MS. DEVINE: Thank you. As an introduction, my name is Anita DeVine and I was diagnosed with diffused systemic scleroderma 14 years ago. Professionally, I had a doctorate in pharmacy, which has greatly aided in my knowledge of my disease and my treatments.

My disease course has run a gamut of acute immune crisis in which I was very clearly ill to now having scleroderma as a chronic debilitating disease. So therefore, when I think about treatment, the treatments have changed through the different types of scleroderma that I have experienced.

Currently, my treatments have included medications that will control symptoms only, but unfortunately, they are not curative in intents. My medication list includes high dose -- for severe gastric and esophageal reflux, enalapril for renal preservation, sildenafil [ph] to increase perfusion and also hopefully aid in pulmonary hypertension, levothyroxine and PRN opioids for pain.

I rarely take them, thank goodness, but I will be discussing that a little bit later. I do have to take a lot of Loperamide for my gut and my -- my symptoms are quite severe in my gastrointestinal tract and there are days that I can hardly leave the house without the Loperamide. I also take vitamins.

I previously had been on antineoplastic and anti-inflammatory agents to try to stem the course of my disease. However, unfortunately, the disease did not abate.

My non-medication treatments have included major hand surgery. There was one major and fifteen minor hand surgeries. You can see the effects of it. They were not wonderful, and it was extremely difficult surgery.

I have been on dialysis because of renal failure, which was due to my scleroderma. I elevate my head at night to abate my reflux symptoms. I use heat for localized pain. I have been on frequent bouts of physical therapy. My diet, I am on a low-sodium diet, because of my kidneys, and I exercise as much as possible to maintain whatever limb function I have left.

Unfortunately, my current treatment regimen does not affect the progression of my scleroderma. The anti-diarrheal medication stops the issue temporarily, but doesn't change the onset of symptoms and activities of daily living are extremely difficult due to the lack of my gut function.

My profusion is slightly better on sildenafil. I was a failure on other treatments that were given to me, such as calcium channel blockers.

I do want to spend a minute on pain control. I do experience quite a bit of pain on a daily basis and unfortunately, for someone like me who has kidney disease, many options are not available to me. And I am forced to end up taking opioids. And the opioids are a very, very difficult medication to obtain from a physician as well as you don't want to be on it for long periods of time. So it is a difficult thing to control my pain and I generally have to try and grin and bear it.

Thankfully, I'm on mostly oral medications, and that makes my life a lot easier. But the down sides of my therapy include cumbersome regimens, costs of my therapies, and pain control, as I said before.

If I was to choose my ideal treatment

with scleroderma, it would include cost effective therapies for disease and symptoms controls. The therapies would have low or no toxicities. It would be a simple regimen. Costs would be within reason, and insurance coverage and peer coverage would be acceptable to me. And I also would like to make sure that it -- the therapy is easy to obtain.

Sometimes they make you go through hoops to get medication or other modality, and it's not always easy to obtain meds. The other thing I consider before starting a therapy is the risk that could fall back of the treatment.

I think about various things such as potential value, comparison to other options and therapies that are out there, cost, again, side effects again, how severe are those side effects, how is it going to impact my quality of life and what are the effects on my family?

I also want to know what is the history of the treatment? Has the drug been out for fifty years, or has it been out for six months? That might make a difference to me.

And lastly, if the drug is still investigable. Did -- include patients like me? Did they include patients who were in my age group, my co-morbities, treatment after the trial has ended? Will there be a cost to me in a trial? Testing --

Lastly, is there confidentiality in a trial? I was actually a participant in a investigational study years ago and the data was compromised, and my confidentiality was breached. And so I just want to make sure that that never happens again.

Now on a personal level, when treating my disease, I would accept some side effects if the gain was control of disease progression and increase the overall quality of life. I would be willing to accept some side effects if organ preservation resulted. This is maybe the most debilitating issue to me in the long run.

I'm also willing to accept different treatments, depending on my disease state. When sicker with life-threatening scleroderma systems, I might be more willing to take riskier treatments if it improved my chances of survival.

Now during the more prominent phase of my illness, my present status, I would be less willing to accept the more severe or lifelong debilitating treatment. Having a slower, chronic decline for the disease, to me, would be preferential to having an acute life-threatening product which I would have to take.

However, if I felt that I could live satisfactorily with the risks that are incurred by the medications, if they were acceptable or treatable risks, I would be willing to take the medications or treatment.

Thank you for allowing me to speak.

MS. BENT: Thanks so much, Anita. So let's try and go back to -- to Demi and see if we've resolved our audio issues.

Demi?

MS. TRICE: Can you hear me?

MS. BENT: It sounded like something we are dealing with the same audio issues. I wonder if maybe we could -- we could figure out a way to maybe have you call in via the phone instead of -- instead of online, because I think that might be one of -- one of the -- the challenges.

So while --

MS. TRICE: Okay.

MS. BENT: Yeah. Sorry about that.

Let's move on to -- to Jackie as -- while we -- while we continue to work on -- on Demi's -- Demi's audio issues and -- and we will come back to her.

But Jackie, if you wouldn't mind sharing your experiences with us, we really appreciate it.

MS. LATKA: Sure. Okay. So my name is Jackie Latka and I'm going to start with just a little bit of background so you can understand my story.

I was diagnosed with systemic diffused scleroderma in 2011 and I was put on a medication called "CellCept" that I took for about six months with my symptoms continuing to progress.

After six months, I started having some breathing issues and was diagnosed with some secondary issues; Raynaud's syndrome, interstitial lung disease, and borderline pulmonary hypertension.

Not only did I have these secondary issues, but the disease continued to progress and started to make my mobility deteriorate. I could not sit or stand for more than 15 minutes. I could not be in a straight position. My body had to be bent for more than 15 minutes, or it was very painful.

I could no longer go upstairs. I used a walker. I was in a wheelchair. I needed assistance with daily tasks that most people take for granted, such as bathing, getting dressed, fixing something for myself to eat, opening a bottle of water.

When the disease continued to progress so rapidly, my doctors decided that I should take some chemotherapy, Cytoxan infusions. However, nobody could get the IV's in my arms because the skin was so tight.

So we moved to a daily, oral dose and I took it for four months, until I started to get side effects of the Cytoxan, with bladder issues.

So at this point, my doctors were kind of at a loss for where to go with me because my disease was progressing so rapidly. I did some research on my own and found a rheumatologist very well known in the scleroderma community, that I traveled outside of my state to go and see what their recommendation was.

And within 10 minutes of being in the office, the recommendation -- and the only recommendation she had for me was a stem cell transplant. So in 2013, I went and had a stem cell transplant as my treatment, and currently, continue to be on medications to maintain a status quo of my health and where it is from the transplant and the medications that I've taken over the years.

I also take some non-prescriptions, like calcium and Vitamin D and do exercises and stuff. My treatment has changed a little bit because of the transplant. Just different medications. I still take an immunosuppressant. I still take something for my lungs. I take something for my gastrointestinal, and several other medications.

I did see improvement in my mobility and in my lungs after my transplant. And I continue to see what I call my baby steps and my new normal to making more positive changes forward from the transplant.

I was able to retire my -- some of my medical equipment, but I still continue to use some smaller equipment and gadget-type things like grippers and door openers, et cetera.

So as I mentioned, my lungs did improve from the transplant, however, they're still in a compromised position and I do wish that they would get better. And one of the things that I would say that is, I guess, just annoying -- a little bit annoying to me is all the medications that I continue to have to take on a daily basis.

But in order for me to maintain my

status quo and not have to catch back up with the disease, I continue to take medications. But I always have the questions of worrying if another medication is introduced, how it will affect me, making sure I don't relapse, and worrying about any new symptoms.

In choosing treatments, I take into consideration who's in charge of the treatment, how knowledgeable are they about scleroderma, do I have any other options that I need to research, and what are my healthcare providers and my family recommending to me.

And if the treatment were to make a big difference in the -- and would improve my symptoms, and preserve my organs, I would consider it. I would have to outweigh the risks and the benefits, for example, like I had to do with my transplant.

The risk of the transplant was very high, however, in order to save my life and continue living, I felt the option was to do the transplant.

In looking at bothersome symptoms and things that are less important to me than are more important, I look at, like, my hands. My hands are curved like this, like a lot of scleroderma patients, and I can't straighten them. But to me, they're functioning hands. They're normal hands. I'm used to these hands, and I can live my life with these hands. So I wouldn't risk the possibility of doing a surgery to straighten them out and go to through the side effects of that surgery.

However, if my lungs deteriorated, I would consider a treatment that possibly has risks if for the greater good of me and my lungs, it's going to help and get the lungs better.

I think I've had a lot of high-risk treatment in doing the scleroderma, and I've looked at the benefits and risks and that's the main thing that I look at when I look at my condition. If there's a long-term factor, but my life will be much more functioning, then it would be worth it to me.

You know, in a perfect world, our treatment would be safe and we have positive results or a cure, but I guess I look at all the treatments and if my scleroderma symptoms started to decline, I would have to weigh all of the options at the time that I'm in, looking at the risk and benefits of them, and what my healthcare providers would be recommending.

So thank you to everyone. And that's a bit about treatment and scleroderma.

MS. BENT: Thanks so much, Jackie. I think that we -- I -- I appreciate that and I appreciate kind of the unique perspective that you bring, having -- having gone through the -- gone through the transplant and also really kind of your thoughts on -- on risk and benefits. That's really -- that's really helpful for us to hear.

And I think we're going to hear hopefully from more of you on the line about your -- your thoughts and your experiences with treatment as we move forward.

Right now, we are still working on Demi's audio, so Susan, if you wouldn't mind us kind of turning -- turning to you for -- for your -- your thoughts and your -- your experiences, we would -- we would really appreciate that.

MS. NYANZI: Definitely. Again, thank you for having me. So I've had scleroderma for 45 years, and it took three years and three different countries to finally get a diagnosis.

At the time, I didn't fit the standard patient. I was a child, and I was African living in a tropical country. For about 20 years, the scleroderma was in remission, but three years ago, things changed, and I had to figure out what I could do to go back to a normal life.

Just to lead an ordinary life, all my medications, prescriptions, and over-the-counter meds must be compounded, because I have intolerances to the binders and fillers that are now used to make all medications. The food intolerances are a side effect of SIBO, small intestinal bacterial overgrowth.

And because of this, I develop skin rashes that won't go away, constant nausea, constant aches and pains, and foggy-brain episodes. Once I changed my diet and pulled that gluten, dairy colon nightshades, all the symptoms disappeared, and my energy levels skyrocketed.

To be able to function throughout the day, I must put myself in TPN, total parenteral nutrition at night for 10 hours, because 70 percent of my nutrients come from TPN as I can't absorb nutrients.

Although TPN has given me life, it also has its downside. I get sepsis infections when the PICC line gets infected. This usually results in a nine-day stay in the hospital. The hospital stay is gruesome, because many of the physician and nurses don't know how to take care of scleroderma patients.

I have nutrition limitations; can only eat four foods. I have medication limitations, so I must bring my own medications and blood draws need to be limited, otherwise I develop hospital-acquired anemia that's treated with a blood transfusion.

Currently, there are minimal treatments for patients with intestinal problems. Once you've gone through the standard treatment, then your rheumatologist and gastroenterologist have to become creative in finding solutions that will work. We need medications that treat the intestinal tract; those that address SIBO, those that address lack of or limited -- and those that address lack of absorption.

We additionally need medications that address secondary Raynaud's that many of us develop. Although nitroprusside is recommended, it has side effects. A less aggressive medication is needed.

Many of us scleroderma patients are usually in some type of pain most of the time. So a medication that can lessen that pain and protect our organs would be ideal. One hears of too many stories where some scleroderma treatments result in rare cancers. And we actually have a scleroderma warrior that is currently going through this.

In the long term, aggressive treatments that work well and have the potential to damage our organs are not prolonging life or improving on quality of life. They are causing more hardship.

We need treatments that work well, protect our organs, and prolong life and quality of life.

Thank you.

MS. BENT: Thank you so much, Susan. I think that that was -- that was really very -- very well said and I think that it is something that we really -- we need -- we need to think about as a -- as a whole and appreciate that.

Now we're going to turn back to Demi. We believe we have fixed the audio issues, but of course, on a live webcast, we can't test it. So we're going to -- we're going to cross our fingers and hope that third time is the charm. So Demi, if you want to -- if you want to go ahead, we will -- we'll -- we'll cross our fingers.

MS. TRICE: Okay. Yeah. That's better.

The aspects of my systematic sclerosis that impact my life the most is the tightening of my skin. My skin on my arms, legs, hands, and face are significant. The skin has tightened so much that it causes me to have limited uses of my limbs.

I also have Raynaud's, making me extremely sensitive to cold environments. I continue to suffer from digital ulcers which cover many of the areas of my body. I also have calcium deposits.

Due to all of these issues, I now suffer from anxiety. Before being diagnosed in 2001, I was a very active person. Now I'm unable to walk for long periods of time. I no longer can put on socks, comb my hair, or open up items. My left hand is contracted, and my right hand has three partial amputations. My feet hurt constantly and I have had one toe removal.

All of this has greatly limited my activities. On my best days, I'm still unable to complete simple tasks like eating without adaptive equipment. I still need a lot of assistance, which can be very frustrating.

On my worst days, the fatigue is overwhelming. I'm so tired I literally can't get up and take care of my daughter. I'm forced to call family in to make sure my child eats and to stay entertained.

Over time, my scleroderma has gotten worse. I now mainly focus on dealing with the calcinosis, which is extremely painful and uncomfortable. I don't have as many complications that cause me to lose digits anymore. It seems my body is at a point where it is adjusting to the trauma it has experienced.

I have learned coping mechanisms that seem to be working for me. I've had scleroderma since 2001, but I still can't define my sentence as being well-managed. I just learn tricks to make it tolerable.

The issue of premature death concerns me the most about systematic sclerosis. If I could change one aspect of the disease, it would be the loss of my digits. I would like to have all my fingers and toes. The loss of my fingers has been a traumatic event for me and has caused me to suffer from depression that I now have to be treated for.

To treat my scleroderma, I currently use several medications that only are preventative. For example, Lorvas. It's prescribed to me to make sure my esophagus isn't damaged. I also use non-drug therapies and over-the-counter products. One product that I find the most helpful is Vaseline. I also use chair yoga to relax and stretch my limbs.

My treatment regimen has changed over time a lot. I used to take every medication a physician prescribed. But I only found that my doctors were experimenting and are not sure what can help me. Some of the meds cause me to suffer so much that I began picking and choosing which ones I -- that works best for me. I no longer trust physicians as much. Now I ask more questions and advocate for my healthcare plan.

The symptoms I would like to be improved or resolved by treatment is the skin tightening. The severe lack of blood flow causes more symptoms like the loss of my teeth.

Right now, the only treatment that

improves my abilities to do specific activities is pain management. When I'm not in pain, I'm able to function more normally in every-day activities. I'm able to participate, which is more of an enjoyable life.

The significant downsides are planning my life around doctor's appointments, surgeries, and home care visits. My ideal treatment would be to take five or less prescription medications, to qualify for more clinical trial opportunities. Also having one or two physicians trained and capable of conducting the majority of my care, instead of me having to see several different doctors.

Facts I consider when selecting treatment options are the physician's reviews, the medication reviews, and the side effects. Also my personal feelings of the results after treatment.

Another extremely important consideration is the physician's bedside manners. When I think about treatment risk, and treatment risk and improving my symptoms, I would like to preserve my organ functions. That would be worth the risk.

But I'm not willing to have a treatment with cancerous-issue risk. If I had to chose between two products, I would prefer a safe product that works somewhat, giving me some levels of real relief.

On a lighter note, I'm surviving with a smile on my face and a determination to be an enjoyable person and have an enjoyable life. And I want to thank you for listening and thank the FDA for hosting a public meeting.

MS. BENT: Wow. Great. Thank you so much, Demi, and thanks for your flexibility as we -- as we kind of trouble shot the -- the audio -- audio issues.

So as you guys can hear, these are all some really compelling and diverse experiences on both the treatments and with the scleroderma and systemic sclerosis. And I want to thank all of our panelists: Monica, Anita, Jackie, Susan, and Demi for sharing them.

And so as I mentioned before, the

discussion questions for this session are first -- first two questions are questions for the group. What are you currently doing to treat your systemic sclerosis, how has your treatment regimen changed over -- over time, and why, and what symptoms would you like to see most improved or resolved by -- by treatment?

And so -- so right now, I -- I think that -- I don't think we have anybody on the line, so let me -- let me take a moment and turn to the FDA panelists to see if they had any follow-up questions for -- for our patient panelists.

Is there anything from the FDA perspective that you wanted to clarify or -- or -- or maybe follow up on?

DR. NIKOLOV: Robin, this is Nikolay --

MS. BENT: Hi.

DR. NIKOLOV: Hi.

MS. BENT: Yes.

DR. NIKOLOV: Thank everyone for sharing your stories. Again, this pretty much what we wanted to hear, and I think that the purpose of this afternoon topic is mostly to think about how to think about the benefits and the risks of therapies for systemic sclerosis. And I wanted to probe a little bit. Some of the comments that were shared and ask the group, for new products that we may not know about the long-term potential benefit, say for disease, for educational, for slowing the progression of the disease, but, you know, it's possible that based on the mechanism of action and understanding, it may -- of action.

The question is, how much safety or toxicity would you be willing to take with a product like this? For example, if it causes cancer also, or if it causes heart disease or, you know, cardiovascular disease down the road, so these are some of the uncertainties that we have that we would want you to -- to share with us how you think about products like this.

MS. BENT: Jackie, you want to kick it off?

MS. LATKA: Sure. I can add that I -- it would depend on my health at the time. So for instance, one of the things that my rheumatologist had me take when my disease was progressing so aggressively was the chemotherapy Cytoxan that does have a side effect of cancer.

And in looking at the cancer, you know, it's going to be a possibility and not necessarily a yes, that you're going to for sure get it.

So I think I would, you know, at the time of my disease and where I was sitting, it was really more of a answer of if I don't try this, I'm probably not going to live.

So at that point, the benefit of possibly getting the cancer was a small side effect for where I was at with my disease.

MS. BENT: All right. Thank you, Jackie. Let's just kind of go in the order I see on my screen with Susan and then Anita and then if Monica or Demi wants to add anything, I'll -- I'll -- we'll go there.

So go ahead.

MS. NYANZI: And so actually when I was younger, my scleroderma was pretty bad and I was diagnosed and treated in England. That's where I was first diagnosed.

And so they did give me a medication that was part of a cancer treatment. It was called "chlorambucil" at the time. But they had to monitor me very closely, because again, I was still a child and I was still growing.

And so at that time, because, again, I was progressing fast, that was the only option they had at the time.

So I'm kind of conflicted with this right now. So the scleroderma has kind of come back now after 20 years and I think at this point in my life, I wouldn't risk taking something that could additionally cause cancer.

And you hear a lot of these worries happening. As I had mentioned in my notes, we do have someone who's going through that right now. But I think with advances that have been taking place, I'm confident scientists can find alternatives that are less risky, and that will prolong life and give a better quality of life.

MS. BENT: Great. Thank you. Anita?

MS. DEVINE: I would say that if the treatment is going to cause me more problems, and more severe problems, and mortality issues that I would be reticent to take it.

Right now, living with scleroderma is not easy, but I'm living. And so I think that, you know, truly say that I might have such cardiac affects that my heart might be severely compromised or that my kidneys will completely fail, they're close to that now, I don't know that I would be willing to accept that. So now that's pretty much my personal feeling.

MS. BENT: Great. Thank you. The -- the audio issue seems to be back a little bit. I'm sorry.

MS. TRICE: Can you hear me?

MS. BENT: Yes. Perfect.

MS. TRICE: Okay. I -- I would kind of

like to echo with Anita. I also wouldn't want to have extra trauma done to me. I -- my body's already went through enough. I don't feel like it would be necessary to try something that would just make it worse. So that's pretty much what I want to say.

MS. BENT: Okay. And Monica, I just -- I don't want to put you on the spot if you don't want -- if you don't -- I mean, you kind of spoke to -- spoke to this a little bit earlier, but if you had anything else to add, I want to give you the opportunity.

MS. CICCHETTI: Well, you know, when I was recently diagnosed, I tried a couple of medications and the side effects were horrible. And so at that point, I -- I decided to try without and -- and thank God I'm still being able to do it. So I really cannot agree with much in terms of medication. Thank you.

MS. DEVINE: I would like to add one thing, and that is if the side effects were treatable, I think we're willing to take a risk. So I think that's an important thing to say.

DR. NIKOLOV: Thank you, everyone, for sharing your thoughts. I mean, we get the impression that these are not easy decisions to make for patients or for prescribers, but this is sort of a mutual decision and I -- and I think we on our end also have to think about how to incorporate these considerations and how we assess the benefits and the risks of treatments. Thank you so much for sharing.

MS. BENT: Great. Thank you. And let me turn to Shannon to get -- I think we have one comment in -- from the -- from the one who submitted a comment online.

And so let me maybe have her -- have her share that share that comment. And then -- and then we'll -- we'll turn back -- we -- I think we might have a few other questions from our FDA panelists.

So Shannon, do you want to share that -- that one comment that we got so far?

MS. COLE: Sure. Thanks, Robyn. So we

did receive one comment from a patient who was describing the treatments that they're currently using. So they are -- they're using a variety of medications for GERD, high blood pressure, severe Raynaud's, digital ulcers, and some neuropathy pain. And they -- they try not to take some of these medications because the side effects are not being able to sleep, itching, and -- and -- but sometimes the -- the side effects are better than being in pain.

They've also tried BOTOX and have also used a hyperbaric chamber several times to help with amputation peel, and some laser light therapy which seems to also help the pain and ulcers to heal.

And they also stress that their treatment regimen can change according to their symptoms, so it may not be the same thing every day.

MS. BENT: Great. Thank you, Shannon. I know that we do have some more questions from our FDA panelists, but I'm going to get everybody kind of -- I don't want to say up and moving, because answering a polling question is not really aerobic activity, but let's -- let's turn briefly to -- to the polling questions to get some feedback from those of you who are online.

Again, polling kind of remains limited to the participants who have those experiences with systemic sclerosis or scleroderma, either personal experience or as a family member or -- or loved one. And, too, our panelists who are participating still for -- for the meeting, please feel free to pick up your cell phones or your other -- and -- and share your -- your responses with us as well.

And so this is where you're going to find my embarrassing ability to pronounce medications.

So "Have you ever used any of the following" -- sorry. I just want to make sure I'm -- all right.

"Have you ever used any of the following interventions or medical products, drug therapies, or medical devices to treat your systemic sclerosis?"

And you can check all that applies for

this one. And so the the first are "Medications to modify blood flow, such as Nifedipine." "B" is "Medications that suppress the immune system to prevent organ rejection or to treat arthritis such as cyclosporine or Azathioprine." "C" is "antifibrotic medications for interstitial lung disease such as nintedanib." "D, course steroids for skin and arthritis symptoms such as Prednisone." "E, Proton pump inhibitors for digestive symptoms such as omeprazole." "F, Pain killers such as Vicodin, Percocet, oxycontin." "G, Bone marrow or solid organ transplant." "H, Other medical products or interventions not mentioned," or "I, I'm not using any medical products or interventions."

So I'm going to be honest, that was the question I was worried about all day for my pronunciation. So apologies if I got those wrong.

All right. So looking at this -- and it is -- it is a little bit difficult to see, which is why you can see that we kind of shortened the -- the -- the answers on the survey question, so it looks like the medications to modify blood flow is -- is kind of 22 percent of people. Medications to suppress the immune system, about 10 percent. Two percent are using the antifibrotic medications for interstitial lung disease. We have steroids at about 17 percent. Proton pump inhibitors for digestive symptoms, the omeprazole and such, at 19 percent. 14 percent for pain killers. Not a huge number of people with bone marrow or solid organ transplants. And we have 15 percent of people using others or -- other medical products or interventions not -- not mentioned.

And that -- that is -- that is helpful for us to know and we will get, in our next polling question we're not going to quite yet, we will get to kind of questions about all -- you know, about physical therapy and diet modifications and counseling and other therapies and -- and over-the-counter medications and things like that.

So but right now, this is -- this is just really to kind of give us -- give us an idea of the -- of the treatments that -- that are being used.

And I think that that actually kind of leads us right into -- into one of the questions that one of our FDA panelists had about -- let me -- let me turn to Dr. Glaser, because I think you had some questions about -- about GI symptoms, and maybe meaningful improvement?

DR. GLASER: -- get both audio and video at the same time.

So I will echo my colleagues in thanking all of you for taking the time to speak to us today and describe your experiences living with systemic sclerosis.

One thing that we've heard quite a bit about today I think are the different GI manifestations from different panel members.

I was wondering what GI manifestations would be most important to develop treatments for? And then sort of a Part B question to that is what would be a meaningful improvement in those symptoms for you?

MS. DEVINE: Well, do you want me to start?

MS. BENT: Oh, sorry. I was having a great conversation that was deep and profound with myself, because I forgot to unmute, so apologies for that. Yes. If you want to -- Anita, if you want to kick it off and then we'll move on to -- to Susan, who I know touched on this during -- during her talk as well. But go ahead. Thank you.

MS. DEVINE: I think, you know, a lot of the issues that have been discussed are esophageal reflux, difficulty swallowing. The problems with -- of the gut and overgrowth of bacteria and all of those resultant in, you know, diarrhea that is so severe that it can be debilitating.

So all of those things would be of interest to me, personally in finding some things that would be beneficial. I would love that.

The musculature in the gut is some impaired that, you know, that's another issue that hopefully that could be alleviated as well. Thank you.

MS. BENT: Great. And before -- before -- before I have Susan kind of launch into that, so Anita, would you maybe tell us or maybe give us an idea of what you think would be -- would be an improvement? What would be a meaningful improvement that would make it worth kind of taking -- taking a medication maybe on a daily basis or -- or something like that.

Obviously, absent the ability to stop the checked problems altogether, would you -- what would you think would kind of -- I'm meaning, like, a decrease of like 50 percent in the reflux, or, like, reflux only on 50% of days.

I don't want to put words in your mouth, but just kind of -- kind of thinking about what you -- what would be a -- a goal for treatment that you would think, "Okay. This is worth -- worth kind of taking."

MS. DEVINE: You know, we do have some treatments now, but part of the problem is, you know, the proton pump inhibitors to help a little bit with the reflux, however, the side effects long term are scaring me, and so we are -- we're taking very high doses.

So, you know, when I step down therapy and I try to decrease doses, the reflux is untenable. So basically, I'd be looking for something -- even if it was a 50 percent decrease as Robyn said, or 50 percent of daily episodes, that would be meaningful to me. I'd be thrilled.

I'd be also looking for something that doesn't have, you know, long-term side effects that, you know, have been reporting most recently Type II Diabetes. All these proton pump inhibitors and, you know, all kinds of other issues that are being reported in the literature over the years on high-dose proton pump therapies.

So, yeah, I would -- I would love to see some new therapies. Thank you.

MS. BENT: Thanks. Okay, Susan, go ahead. Sorry. I -- I didn't mean to cut you off.

MS. NYANZI: No, no, no. That's okay. I would definitely like to see treatments for the intestinal tract. Currently there are really no treatments for the intestinal tract. With SIBO, there's a series of five antibiotics you can go through to get the gas down due to the SIBO. But once you've gone through those medications, you know, several times and then they stop working, there really isn't anything else that can be done. So your rheumatologist and your gastroenterologist need to work together to kind of finesse and figure out what else can work for you.

So we definitely need medications for the intestinal tract. Tablets or anything else that can get that gas down, you know, 50 percent, that -- that would be great. And then also we have lack of absorption.

So I have that. Seventy percent of my nutrition is coming from TPN. TPN pretty much saved my life. Other rheumatologists couldn't figure out what I had, but my rheumatologist at UCLA, who is a specialist in scleroderma, figured that out. And that's how I ended up on TPN. Otherwise, I really would have lost -- I had already lost 50 pounds. And I don't think I would have been -- I would be here telling you my story if he wasn't thinking about that.

So we also need medication that can help with absorption for those of us who don't -- who can't absorb any nutrients. So those are my points.

MS. BENT: Okay. Thank you. Did -- did anybody else want to -- to comment?

MS. CICCHETTI: I would like to say something about it. Thank you, Robyn.

My point of view is from the holistic type of treatment. I -- I do see doctors regularly and I make -- and I make sure that I'm doing all that they're asking in turn, but at the same time, I -- my -- my focus is a lot on -- on lifestyle.

And it is interesting we have this parasympathetic nervous system which is also called "rest-and-digest system." And this is the part that strengthens our immunity.

Before my diagnosis, I was working two jobs and going to school. And I literally never stopped Monday through Sunday. And so, you know, after scleroderma, I started to value my sleep and to have some more of a peaceful life. And my digestive problems improved a lot.

And there's many tricks that I've learned. Regarding diet, I am -- I observe my diet very closely. But for instance, there are -- in foods that I eat and give me heartburn. And I found out that if I eat something that gives me heartburn in a empty stomach or without any other food, then I have more problems.

But I -- I got to understand more my -- my body and learned that if I have this together with this other type of food, and usually try -- combining protein and veggies and carbs. And if I get a balance that my body likes of this food -- types of food, then my heartburn goes way down almost to nothing. So that -- that can also help.

Antibiotics. I did try antibiotics for SIBO first. The problem with antibiotics is that they -- they kill the bad guys and the good guys in your -- so it's a double-edged sword and I -- I tried another alternative.

MS. BENT: Great. Thank you -- thank you so much. I think that that's -- that's helpful. And I think that -- it sounds like you're going to have a lot to kind of add to when we get to your next polling question that those talk about kind of the more -- the -- the non-medical -- or the non-medication kind of based -- based treatment.

So at this point, I would like to -- I'd like to kind of turn to Shannon and see if she can give us kind of a summary or a overview of the comments that we're receiving from those of you who are participating and providing comments through -- through the web comments.

Also, this would be a great opportunity for me to put in a plug for those of you who would like to give us a call and kind of share your thoughts to -- to do so. So let me -- let me turn to -- to Shannon. Shannon?

MS. COLE: Thank you, Robyn. So we are getting several comments about treatment options that -- that participants are using. One participant said they're using Flolan and Veletri infusion for Raynaud's and a high blood pressure medicine for blood flow.

They're also using Cymbalta for nerve pain and depression as well as Botox injections for Raynaud's in their hands.

A few participants also mentioned proton pump inhibitors and -- and one of them said that the fact that proton pump inhibitors inhibit the absorption of calcium is a huge issue for women. A way to have a treatment with proton pump inhibitors without the side effects of less calcium absorption would be great.

We also received a comment from someone who -- who was using GI systems and strategies to deal with fecal incontinence. And some other recommended lifestyle adaptations.

In addition to medication, one participant listed they -- they did not eat late at night. They have some dietary changes and are doing their best to keep their core as well as extremities warm for Raynaud's. And in -- in their current condition, they would be wary of a long-term medication that dramatically increased their chances of cancer or cardiovascular issues. But if they're in a bad situation, they're -- they're viewpoint on that may change.

MS. BENT: Thanks so much, Shannon. That was really -- that was -- that was helpful. And thank you to all of you who are providing comments via -- via the web.

At this point, I'd kind of like to -- we're going to -- we're going to take a little bit of a turn. I'm going to go back to something we -- we heard a little bit earlier in the day from -- from our first panelist, which really, the challenges of dealing with kind of fatigue.

And we heard it from you guys as -- as well. There's -- there's a lot of -- lot of fatigue that comes with it. And so let me turn to one of our FDA panelists, Dr. Hull, to really kind of -- to ask -- to ask his -- a question that I think we're all -- we're all kind of interested in -- in hearing your -- your thoughts on. So, Dr. Hull?

DR. HULL: Yeah. Hi. I would also like to start by thanking all of the panelists for joining today. This has been a -- very helpful from our point of view for reviewing.

One thing that we commonly review in a lot of different applications, including scleroderma, is fatigue. And we hear a lot about patients with fatigue.

One of the problems we have is how do you assess it? Someone just saying it, so my question to you -- and it's been a common theme for all the patients, is how do you assess fatigue? For instance, is it every day you're kind of running at half battery, you know, half full, or does it come in waves? It's only a couple days out of the week?

And if you were in a clinical trial, how would you assess that? Would it be, you know, questionnaires? How do you feel from day to day, and do you think you benefit from how you feel looking back at a week?

Just give us an idea so that if we could do something as series as fatigue that we could see that there was a clinical need for improvement in it. Because --

MS. BENT: So if you -- Anita, I see you unmuted, so -- so I'm assuming that means you'd like to -- like to answer the question. So we would -- we really appreciate your thoughts on this.

MS. DEVINE: I -- you know, I do suffer from chronic fatigue. It is a daily issue. I fight it tooth and nail as best I can. I try to -- but you know what, if the fatigue is scleroderma, it's like you hit a brick wall.

I'm a Type A personality. I have always been extremely busy. And there -- you know, the scleroderma has caused such problems for me that just about every -- I'm done.

And, you know, I would like to be able to say that, you know, we had a longer day, not fatigued. I would like to wake up not tired. I would like to feel rested after a week. None of that occurs for me and I -- I imagine it's probably --

MS. BENT: Okay. Thanks, Anita. I'm not sure if you're still speaking. I'm finding there's a -- I think you're having a little bit of an audio issue and you're a little frozen. So -- so I'm going to move on to -- I think Susan has unmuted and is going to -- going to speak, and we'll come back to you if you -- if you have anything else to say after Susan is done. But Susan?

MS. NYANZI: Yes. So I go through bouts of tiredness, so kind of go through what everybody is saying. You know, you can sleep for 10 hours, but then wake up tired. And you're dragging throughout the whole day, from morning, lunch, dinner at night. You're just dragging throughout the whole day.

And so I used to have this, most of the time, for a whole week. And so it can come on and off. For me, it used to be part of my diet, so I changed that. But I know with scleroderma, you can have really bad fatigue. And I've experienced that as well.

So I think, you know, you're talking about in a clinical trial and how you can measure that meaningfully, and I think assess it during a whole week and see how people feel or have them describe what they're going through when they're going through the fatigue.

So it isn't just regular fatigue. I mean, you are really drained. Your whole body is drained. You know, even just going to get something to eat from the kitchen, that is draining to do. So everything you're doing is draining.

I hope that makes sense.

DR. HULL: I had one other question and it's is there a symptomatic difference between fatigue and the brain fog that you mentioned, or is that kind of a combination of the two?

MS. NYANZI: Oh, no. It is different. Brain fog, you can definitely see that one. That's when you can't think what -- I didn't say that correctly.

But you have difficulty thinking, so cognitive function is going to be down, and then trying to put concepts together, that is hard. Hard to do. So, yeah, brain fog is definitely different from fatigue.

And also with the brain fog, you can forget what you were doing and don't remember why you're doing what you're doing. So if you're working in a work environment, that's very challenging to do, to keep your work doing and -- and think appropriately at the tasks that you are asked to do.

MS. BENT: Thank you, Susan. Anita, I want to kind of circle back to you and see if you had anything else to add or if you had completed your thoughts when -- when I -- when I lost your audio.

MS. DEVINE: Did you say "Anita"? Sorry.

MS. BENT: Yes.

MS. DEVINE: Okay. I guess the one thing I would add for Dr. Hull is that when you're trying to measure outcomes and -- and whether or not some things actually helped, I guess I'd be looking at the amount of fatigue experienced daily and are you able to accomplish the things that you have set out to accomplish.

In other words, quality of daily living. Have you been able to have acceptable quality of living, which was nearly rated because you had less fatigue.

So that would be major to me.

MS. BENT: Thanks, Anita. Very helpful. I -- did anybody else want to add -- add something? Monica?

MS. CICCHETTI: Yes. In my case, I find they both happen at the same time. Many times when I wake up tired and I'm tired all day long, at night it's unsustainable. I -- and that's when I -- I have brain fog and I -- I can't talk. I can't find words. I can't think clear. It's really bad. I -- I cannot stand without holding myself on a chair or a table, something -- a wall, because I get dizzy. So it's really bad.

MS. BENT: Okay. Thank you. And Dr. Hull, I don't know if you want to circle around, or ...

DR. HULL: Thank you, all for those answers. That was great.

MS. BENT: Great. Thank you. And so Shannon, I wanted to turn to you because I think that we're getting some comments from -- from our online -- I guess everybody's online, but from -- from our -- from our online comments about -- about this.

Did you want to share a little bit with us?

MS. COLE: Yeah. So we are receiving some comments online about the brain fog and fatigue and one participant phrased it as "Brain fog is when you know that you know the answer, but you can't access it."

And another -- another participant mentioned they measure fatigue in spoons -- so the spoon theory. They never know until they wake up how much energy they'll have for the entire day and their energy can tank out at any time.

Sometimes it's just from physical activity. Some of it is from over-stimulation. Some of it is from emotional fatigue and some of it is anxiety related.

And this person said they usually expect that after doctors' appointments they will need to rest. They said that anti-depressants can help reduce fatigue and cut through brain fog a little bit, but never completely.

MS. BENT: Great. Thank you. And so I wanted now to -- to turn to the phone and I think we have -- we have two callers on the phone who want to share some experiences with us.

Let's start with Noel, and I'm not sure whether you're from Los Angeles or Louisiana, but we'll -- we'll get -- we'll start with you and then we'll -- we'll move on. So thanks so much for calling us.

NOELLE: Hi. My name is Noelle and I am from Los Angeles. I went from diagnosis with diffused systemic scleroderma to a oncologist told me about a stem cell transplant in five months.

I was progressing aggressively and about two and a half years after my transplant, I had a severe allergic reaction to an injectable migraine medicine that put me into kind of a tailspin that I'm in right now, and I am progressing once again.

I am a young -- I am a mother with five kids, four young kids still at home. I know -- I've listened to the panelists and I know a lot of them have talked about their -- their hesitance to have more risk, but as a young mom with -- especially with a child that I have that has a rare disease himself with only about 355 cases in the U.S. I am -- I need to be around for my kids. I need to be around for my family.

And so, you know, I've had scleroderma renal crisis. I have interstitial lung disease. I've got -- pain now, that turns it on that is extremely painful, making everyday living difficult. But I'm willing to take risks if there is a medicine out there or if there is something in the pipeline that's coming, even if it has more risks than what others might be able to -- to do.

So I'm just -- my question out there is, besides, you know, CellCept, the Rituxan, the Cytoxan, is there anything else out there that will slow the progression of this disease?

Thank you for allowing me to share.

MS. BENT: Okay. And thank you -- thank you for calling in, and I think that that's a -- that's a great question. And -- and so now we're going to -- we're going to move on to a caller from San Diego. Kristina? Yes. Kristina, so that she can -- she can share some of her experiences as well. I think we're -- we're talking about brain fog and -- and pain. Right Kristina?

KRISTINA: Yeah. Yeah. So I -- I was actually the one that sent in the comment about spoon theory. And it's, like, you know, every day we -- we would think that we would start the day with a certain amount of energy. Unfortunately, we never know and so someone actually stated this a while ago, where if they, like, using up a certain amount of energy, we call that a spoon.

And so there will be days that we get to where we've used up all of our energy. It might only be three o'clock. And that's it. You know, we are down for the rest of the day.

But something else I -- that I say is that like from brain fog, there's also pain fog and pain somnia. So, you know, I've been -- last year, I've been diagnosed for about 14 months now. I spent most of last year with pericarditis. I have my hospital stays. The medical bills are out of control. That is one thing.

Like, we do need care that is not going to bankrupt us all, you know, and that's -- that's really what's hard and heartbreaking about living here in the United States.

But, like, we -- you know, I was in and out of the hospital for most of last year with cardiac issues before we even found out that I had scleroderma, before that diagnosis even came in.

And I didn't realize, because, you know, I was trying so hard to keep up my life. Like, I was an audiologist. I was trying so hard to make it to work every day, that that's what your entire household revolved around, was getting me to and from work for those eight hours, and part of it is because that's where my insurance was coming from.

And also because I loved my job, I loved my patients. And -- and so, you know, I look back and I honestly don't -- there's a lot of days that are very -- I'll put it that way -- there are a lot of days that that pain level is so high that if you look back at it a year later, you're like, I don't know. I -- I just don't know.

And -- and some of that comes from the brain fog; some of that comes from the pain. I think the pain also can result in mood changes. So you can end up being a lot shorter with people and irritable with people when normally that's not your personality and that's not how you are and that's a really hard thing to experience, too, because you don't want this condition to change who you are as a person at your core.

And I think, you know, spending that time being mindful and meditating and being, you know, outside as much as you're able or spending time with friends and loved ones and your support group is really important to keep those changes from happening.

The other problem is the insomnia. So when you are in so much pain that it keeps you from sleeping. And not something that, you know, it's -- it's really hard to regulate and now, it's -- it's not very common that I get through a day without a nap, you know.

And that's not something that's conducive to working an eight-hour workday in most -- most jobs. Like, I'm 35, you know, and so the expectation is, oh, yeah, you're going to be at work. You know?

And that's not the reality. And especially now with COVID. Like, I had to resign from my job because of the high risk. And there were no contingencies for those of us with scleroderma and other high-risk conditions or how are we going to support you and help you through this by the government, and I think that part, for me, was really upsetting.

Like, everybody that is high risk is not necessarily over 65. There are high risk people that they don't have diabetes, they don't have high blood pressure. You know? There are other forms of high risk, and I think more people need to recognize that, and recognize that this is a disabling disease.

It's rare and it is very difficult to live with, like all of our panelists have -- have explained. And it -- just it can come on fast and hard and you don't know what is going on until it's already set in.

And that takes a while to wrap your head around and accept, and so there needs to be a lot more support. And I think doing things like this now are wonderful so you all can understand our day-to-day is extremely difficult. And we need more people to know that and help accommodate that, because that is going to keep us in more of the social model of disability as opposed to just the medical model of disability. Thank you.

MS. BENT: Thank you. And I think -- I think what you're speaking to is really what -- what we're all kind of -- I mean, for -- for those of us who are not patients with systemic sclerosis and maybe those of us who are -- are not experts in the field, and I clearly put myself in -- in that. I'm not one of the reviewers from the medical division.

I think what you're stating is really what's becoming very clear to those of us who are not experts, which is -- you guys are doing an amazing job kind of getting through -- through the -- through the days, trying to -- like, with -- not letting us see all of the challenges of this disease, but it's really becoming, I mean, it's -- it's obvious that this has -- this disease has - this condition has -- has huge implications for -- for -- for you and the -- the quality of your life and how you're able to get through -- through your days and so I -- I really -- I really -- I really thank you guys all for -- all for calling in and kind of sharing these experiences with us as well as our -- our panelists who are really kind of setting -- setting the stage for -- for everybody.

At this point, I would like to -- I would like to turn to Dr. Schreiber from -- one of our FDA panelists who I think she wanted to -- to ask us a question. And so let me -- let me turn to her and -- and go ahead.

DR. SCHREIBER: All right. Thank you so much. I want to echo what all of my colleagues have said, which is to thank panelists for participating. It's very informative.

So I know we heard from Noelle and Jackie who had shared their experiences with stem cell transplantation, but it didn't appear as though any of the other responded to the poll has reported transplant as a medication option they had undergone, and I was curious as to the reason for this.

Is this because it hasn't come up in discussions with your rheumatologists? Is it because they didn't know that it was an option, or because your disease state wasn't severe enough, or if it had been presented to you as an option, is it something that you didn't want to pursue or is it because the benefit risk profile didn't seem sufficiently favorable to you?

Thank you so much.

MS. BENT: So let me -- let me -- first, let me ask people who are online if you have comments on this, please give us a call or -- or type in -- type in your comments.

And now let me turn to our panelists and see if any of you who have not undergone a transplant have -- have any thoughts or want to -- want to share any of your -- your thoughts on -- on that.

Again, you certainly don't have to share thoughts if you don't -- don't want to, but if you have thoughts, please let us know.

Demi, did you -- did you want to unmute? Sorry. I didn't mean to put you on the spot.

MS. TRICE: Yeah. I unmuted.

MS. BENT: Okay. Good.

MS. TRICE: I have not undergone that treatment. The reason why I didn't undergo that treatment is because I've heard from other people it's like a 50/50 where some people it helps, some people it doesn't help, and because I'm already in enough pain, I didn't want to risk putting myself in a situation where I could have additional pain or additional complications.

So I didn't even attempt to try to get it.

MS. BENT: Okay. Thank you. Did anybody else have -- have any thoughts?

MS. LATKA: Can I just add one thing also on that, even though I've had one? So I had mentioned -- so I have local doctors here, local rheumatologists and they were very much against me getting the transplant because I had mentioned it to them as an option.

And then when I did go see the other doctor in another state, and that was the only option she gave me, they were a bit more open to it, but very, very leery of it because of the mortality rate at the time.

And one other thing, too, is I think that -- or at least what I have been told and in my research what I found out is there are certain requirements that you have to have in order to get the transplant. I don't know specifics on all of the requirements, but at least one for myself was your -- your DLCO of your lungs could not go below 40 percent in order for you to survive the transplant.

MS. BENT: Okay. Thank -- thank you, Jackie. Before we move on to the polling questions, let me just stop and say is there anything anyone else would like to add or else we'll -- we'll move on to our -- to our next set of -- of polling questions.

So all right. So it looks like for those of you online who have thoughts on this, whether it's why you chose a transplant and -- or why you didn't chose a transplant, if you want to share those with us in the comments or maybe if you feel open to talking about as part of your submission to the federal docket, we would -- we would really -- we would appreciate that.

But now we're going to move on to our -- our next polling question, so -- and we're going to do two somewhat in -- in kind of rapid succession because we are -- we are coming kind of up on the -- the tail end of our meeting, and I want to get through -- get -- get kind of everybody's thoughts on these.

So the first -- the first question is "For medical products or interventions that you use" -- wait. Sorry. Okay. Sorry. I skipped -- I skipped one. Sorry. Okay.

"Besides the medical products or interventions mentioned previously, what else are you doing to manage your systemic sclerosis?" And this is also a check all that apply with "A" being "Over-the-counter medications such as ibuprofen or acetaminophen." "B, Lotions or moisturizers." "C, Physical therapy and exercise." "D, Diet modification such as the keto diet, the paleo diet, vegan diet, et cetera." "E, Counseling or psychological treatment." "F, Other therapies not mentioned." Or "G, I'm not taking any therapies to manage my systemic sclerosis or scleroderma."

And so let me see. Okay. And I think that this kind of -- this looks to be pretty consistent with what we -- we heard so far from -- from the -- from this -- from our panelists and from our callers as far as most using over-the-counter medications and moisturizers, physical therapy and exercise as well as dietary modifications.

And I know we listed very specific diets and I know that from what we heard today, it sounds like everybody kind of has -- has found the diet that works for them and it might be a hybrid of multiple different diets that -- that really kind of -- kind of work for them.

But it looks like we -- we are seeing -- seeing a lot -- a lot of use of the over-the-counter medications, moisturizing, physical therapy, diet modifications. Some -- some counseling or psychological treatment and then other -- other therapies not mentioned.

And so let me turn to -- to Shannon and see, Shannon, did -- do we have any comments about kind of the other therapies?

MS. COLE: Yes. So we did receive one comment from a participant who is using other therapies and listed a few, such as the warm -- a warm water therapy pool, massage, pelvic floor therapy, water aerobics, building a strong support system, having a different mental outlook, and kind of taking quality over quantity. Asking for help when they need it, learning to let things go, yoga and stretching, and bible time.

MS. BENT: Excellent. Thank you. Thank you. And so now let's move on just -- just kind of to -- to the next polling question, which is "For the medical products or interventions that you use, what styles of treatment bothers you the most?"

And maybe this is kind of a leading question because we're asking you what bothers you. Obviously, there are benefits for the treatments, or you would not be using them, but -- but in this case, we're just trying to figure out what -- what are -- what are the things that are -- are the things that bother you the most.

And you can choose up to three answers for that with "A" being "How the medication is administered, such as a topical cream, an injection, or an oral medication." "B, The treatment only provides minimal benefits." "C, The treatment is effective only for a short term." "D, Bothersome side effects of the treatment." "E, Concerns about serious risks of the treatment." "F, Uncertainty about long-term effects of treatment." "G, Difficulty in accessing the treatment, such as insurance or physician referral." Or "H, Other negative impacts not mentioned."

Okay. And so -- so looking here, it seems like the -- the majority of challenges are that the treatment provides minimal benefits, the side effects can be bothersome, and there's some concerns about -- about the risk of -- of the treatment.

And, of course, we have heard from -- from people who have called in already today and from our panelists about some of the challenges. Did we lose a response? Okay.

So looks like maybe we lost one of the responses, but -- but that's okay. This will -- this will still give us a good -- good information. It still looks like the treatment only provides minimal benefit and the concerns about the serious side effects are -- are helpful to -- helpful for us to know.

And so I don't know if anybody wants to give us a call and kind of share some thoughts with us about -- about this or maybe share some comments online. I know we are -- we are coming up to -- to the end of -- of -- of the meeting, and I did want to kind of move the -- into kind of our final -- our final polling question, which is really a hypothetical scenario.

And we've talked a lot about this, but I think it would be helpful for us to just kind of put this all into context and kind of wrap everything that we've talked about during this session today into -- into this final hypothetical scenario, and I think that I have to read the entire hypothetical scenario to you -- oh, no. I don't. Excellent.

So I will read it, but it looks like -- we wanted to put a lot of checks in again, we found out we had some technological challenges with that, so here's the hypothetical scenario.

"So imagine that a new self-injectable medication indicated to treat systemic sclerosis has recently been approved by FDA. Your doctor believes that you may be a good candidate for this medication. IN the clinical trials that were conducted, the medication was shown to reduce the symptom that most significantly impact your daily life when injected once weekly.

More common side effects of this therapy may include headache, diarrhea, nausea, stomach or abdominal pain, and weight loss. Rarer, but it's more serious side effects may include infection, seizures, trouble breathing, fever, general feeling of discomfort or illness, and risk of bleeding.

And so given these risks, would you take -- would you take this medication?"

And so your options are, "Yes, No," and "Maybe."

And so -- so I think that one of the things that we're going to -- that I -- I want to kind of ask about is does your acceptance of potential safety risks go up with potential effectiveness of the product?

And so -- so, okay. So we're seeing that about -- I'm just going to give it a second, because I know there's a -- there is that 20 second delay in -- in getting the responses. But we're being -- I've had half of the people give or take are on the yes side. Maybe about -- all right. So -- so it's flip-flopping between yes and maybe. We don't have some -- some absolute no's, and I think that that -- that's really -- that's really helpful -- helpful for us -- us to -- to understand, and I think that Susan really kind of touched on this earlier, because I think we're talking about are we treating symptoms or are -- or are we actually, you know, is this -- is this going to -- is this going to work on symptoms, or is this going to actually work on the disease itself.

And so I think that that -- that -- that might -- that might kind of impact the -- the decision as well. So let me -- let me kind of turn to -- to our panelists and maybe ask a quick question right as we're kind of wrapping up, which is like, can you guys share with me any idea of what an ideal treatment might look like for you?

What would -- what would an -- what would -- what would an ideal treatment kind of be? Would it be something oral? Would it be something IV?

Would it be something that you took once a month or once a day? What would it treat? Maybe just give us a little idea of -- absent a cure, which, of course, would be -- would be wonderful, but what would -- what would an ideal treatment kind of look like?

I don't know if any of you have -- have any thoughts on that that you haven't already shared? Demi, go ahead.

MS. TRICE: For me, once a week or once a month treatment would be good. That would help. I have a family, so I'm constantly on the move and constantly have to be active, and I volunteer a lot.

So I would like something that would be convenient. The easier, the better. If I could self-administrate, it would be better. Going to the doctor's office, having another appointment would not be something that I'd be looking to do, but I would do it as long as it didn't have anything that would be like a fatal result from the treatment, I would be willing to take it.

MS BENT: Okay. Thank you. Anita?

MS. DEVINE: I would be looking if possible to an oral medication. I think that many of us with scleroderma have very bad veins and IVs are pretty traumatic for us, so that is an issue as well as, you know, the fact that you have to go in to get the IV. An inconvenience.

I'd also be looking at the regimen. Is it multiple times a day, is it once a day, because that does impact compliance and -- and ability to really be successful. So that's my thought.

MS. BENT: Great. Thank you. Susan?

MS. NYANZI: I'm open to medication, tablets and now that I've been with the PICC line for four years, I'm open with infusion as well. Again, if that can be self-administered at home, I have to clean my PICC line every -- every day, twice a day. I would be open to that.

MS. BENT: Great. Thank you. So can I -- I'm going to go a little off script here, but it would just be helpful for me, too, because I don't know -- I didn't really -- I didn't talk about this, but I'm -- I'm a nurse, and so I was wondering, when you guys are -- have talked about the IVs and the difficulty of getting IVs and things, do you -- do you experience the same degree of difficulty of similar degrees of difficulty when you're getting just a regular blood draw, or is it really -- is it really the -- or is the IV really the -- the more -- more challenging? And so just -- go ahead.

MS. TRICE: Really, it's just any of it. The blood draws, sometimes I have to get stuck five times. Sometimes my veins won't allow the tubing to go through because of the tightening, so it's any of it. So it's not necessarily just one way; it's both ways.

I don't even like to go get my blood drawn anymore. I try to have them do all tests at one time so that I don't have to be subject to that kind of pain again.

MS. BENT: Okay. Thank you. And I think that that's really something that we -- we -- you know, as people are designing clinical trials, and obviously we need -- there needs to be monitoring for safety and things like that, but -- but your comment about kind of trying to cluster the blood draws or -- so that they're -- they're really the -- you know, it's as -- as few as possible, really, I mean, it kind of -- it kind of resonates with me and so I hope that it resonates with some of the -- the rest of -- of the people watching as well because I think that this is where we have the opportunity to hopefully do -- do our -- do our best to make things as -- as simple as possible for people who are -- are -- are participating in -- in -- in research and things like that.

So let me, as kind of my -- let me first of all thank all of you so much for -- for your thoughts and your -- your -- your feedback and I just -- I want to turn in the last moments -- and I know I've gone a few minutes over, so I apologize -- to Shannon, who has a few more comments from online, and then we will turn to -- to Dr. Nair for -- for his closing remarks. Shannon?

MS. COLE: Yeah. So we have received a few comments about the hypothetical scenario and one participant said that they are willing to try a new drug as long as they can stop taking it if the side effects outweigh the symptom management.

And another participant mentioned that tablets are a challenge with sclerodactyly hands.

And then another -- another participant mentioned that they -- they would appreciate if the treatment decreased or minimized their fibrosis. And that would be what they would look for in an ideal treatment.

We actually just got another comment about your question, Robyn, for the blood draw. And this participant said a single blood draw for me is fine, but when a longer term IV is needed, they have had to have a guided wire IV, which is horrible, and they ask for an ultrasound-guided usually from the IV team.

MS. BENT: Excellent. Excellent. Thank you so much, Shannon, and again, thank you -- thank you to our FDA panelists who -- who are here and to our -- of course, our patient panelists both for the first and second sessions. And -- and to, again, Shannon and Lyna who have done all the work behind -- behind the scenes while I've been on this camera.

So let me turn this over now to -- to Dr. Nair who is going to provide us with some closing remarks. Thank you.

DR. NAIR: Good afternoon, and thank you for the opportunity to share closing remarks of what we heard today. The perspectives and insights you have shared allow me to approach my role with a better idea of complex needs of the scleroderma patient community.

We from the FDA are often tasked with review of different measurements to assess scleroderma disease activity and studies to evaluate treatments for scleroderma. It is critical for us to better understand the patient perspective when assessing the outcomes for systemic sclerosis that appropriately capture the patient's perspective.

Scleroderma is a complex medical condition that affects so many organ systems, and consequently can affect so many aspects of people's lives. Thank you for participating today in this meeting and for sharing your stories and experiences.

We heard the stories today of how scleroderma can decrease the ability to participate in activities such as the ability to play the piano or participate in dancing. We heard how life plans have to be changed, including stopping a business, losing a job, or having to stop college in order to take care of scleroderma.

We heard about how Raynaud's cold intolerance and pain is severe and patients physically have to relocate to warmer locations in hopes of making the symptoms better, but knowing that the pain will not completely go away. We heard about how paralyzing the pain from calcinosis is and that there are very few options in being able to alleviate the pain.

Many activities that people take for

granted on a day-to-day basis have to be planned carefully, including social activities, food to eat, and planning for travel in order to avoid complications of scleroderma.

We heard about using ingenuity to work around the issues complicating scleroderma, including straw and tape to pick up coins, modifications to door knobs, and methods to extract calcinosis.

We heard about how the fears of developing new symptoms and dying earlier are major concerns with this disease and we heard about how support groups and education about scleroderma have been very helpful in cooping with scleroderma.

Patients are experts in their condition. The ability to hear what is most important to patients with regards to symptoms, daily impacts, and currently available treatments for scleroderma can help FDA and other stakeholders to facilitate medical product development as well as understand how patients view the benefits and risks of therapies and devices for scleroderma.

You all have identified a lot of key issues today. Among them we heard that pain is a significant issue with scleroderma, which can be from multiple sources. These include muscle and/or bone pain, excruciating pain caused by calcinosis and pain caused by digital ulcers.

Digital ulcers have been a problem in themselves because they can also lead to loss of fingers and toes. We have heard about digestive symptoms, which limit the types of food that can be eaten and also the amount of food. We heard about only being able to eat once a day. We heard about how reflux requires significant medical intervention just to keep under control. We heard about issues with malabsorption and incontinence due to scleroderma complications.

The fatigue is unpredictable and can be severe leading to days where it is impossible to get out of bed and can limit activities that were previously routine.

Other key issues include shortness of

breath, requirement of oxygen, and damage that scleroderma inflicts on organs like heart, kidneys, and lung.

As FDA continues striving to incorporate patient perspective more broadly into medical product development, meetings such as this scleroderma meeting you have participated in help enhance our understanding of the patient perspective and assist in moving the science of patient input forward.

This input is valuable for FDA's drug review because it helps provide the underlying clinical context about the severity of the disease and currently available treatments. This context is necessary to take into account when assessing whether drugs benefit outweighs its risk.

This kind of dialog is extremely valuable, not only for FDA, but also industry, academia, and other medical product developers in the room and on the web. The perspective shared today can help stakeholders identify areas of unmet need in the patient population, identify or develop tools that assess benefit of potential therapies, and also raise awareness and channel engagement within the patient community.

Involving patients through the direct drug development process has the potential to strengthen the process and improve the science.

Once again, thank you for your participation and sharing your perspectives with us today.

In addition, I would like to thank everyone involved in planning this meeting. Thank you.

(Whereupon, the meeting concluded at 2:32 p.m.)

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I, JANEL FOLSOM, the officer before whom the foregoing proceedings were taken, do hereby certify that any witness(es) in the foregoing proceedings, prior to testifying, were duly sworn; that the proceedings were recorded by me and thereafter reduced to typewriting by a qualified transcriptionist; that said digital audio recording of said proceedings are a true and accurate record to the best of my knowledge, skills, and ability; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this was taken; and, further, that I am not a relative or employee of any counsel or attorney employed by the parties hereto, nor financially or otherwise interested in the outcome of this action.

Janel B. Folsom

JANEL FOLSOM
Notary Public in and for the
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