Goals and challenges of developing a patient focused myeloma center of excellence

The multiple myeloma treatment field has undergone several changes over the past 10-20 years. The average overall survival has changed from 1-3 years to 10-20 years. Yet, there is no established curative therapy for multiple myeloma. However, advanced monitoring with minimal residual disease (MRD) testing, targeted imaging, and cutting-edge molecular profiling of residual disease post-therapy will drive the field forward in the coming few years. With better identification of residual disease as well as detection of early recurrences, patients can look forward to improved remission-free follow-ups.

Multiple myeloma survivor and advocate, Gary Petersen talks to world renowned multiple myeloma specialist Dr. Carl Ola Landgren as part of the CureTalks with Gary series. Gary discusses the goals and challenges of developing a best of class patient-focused myeloma center of excellence with Dr. Landgren.

Hematologic oncologist Ola Landgren, MD, PhD, was recently appointed the inaugural leader of a new research program, Experimental Therapeutics, at Sylvester Comprehensive Cancer Center at the University of Miami Health System and the Miller School of Medicine. Dr. Landgren, who was Chief of Myeloma Service for the past 6 years at Memorial Sloan Kettering Cancer Center, will also serve as Chief of the Myeloma Program at Sylvester.

Full Transcript:

Gary Petersen: Hi, my name is Gary Petersen and you're watching Cure Talks with Gary and I am so pleased today to have Dr. Carl Ola Landgren on the program. For just everybody's knowledge I just need to let you know that he happens to be my doctor and I've chosen him for a number of great reasons, one of which if you look at all his past accomplishments, he has so many it's tough for me to put it down on paper and stay within the timeframe a lot. So, let's just say that he has some of the best background in the entire world. I have myeloma and as a result obviously I'm interested in anybody in it and when I first got myeloma, I decided to go to who I thought was the myeloma specialists in the world at the time and that happened to be Dr. Barlogie at UAMS and he did all his work at MD Anderson. Now he was at UAMS, I went there, so did number of other patients and I come to understand what a great facility that was and he went to Mount Sinai and when he did that, I followed him. So, if I get a great doctor, I'm not going to just sit around, I'm going to follow that doctor because he's keeping me alive and I've been alive now for 14 years, almost 15 since my diagnosis, so I'm very pleased but Dr. Barlogie left and went to Mount Sinai and I followed him there. At that point he retired and when he did, I looked and choose another outstanding and great doctor and that happened to be Dr. Landgren from Memorial Sloan Kettering Cancer Center and now he decided to move to Miami and so I followed him to Miami as well. Dr. Landgren has an excellent background experience in cancer research and he studied in Sweden and that's why not only is he very excited about working with myeloma but he found out recently that Abba is coming out with a brand new album and that pretty much excited him more than one could imagine. But what he did after he was at the National Institute of Health, he was the Director of myeloma program at Memorial Sloan and it's one of the two best cancer centers in the United States and if you search you'll find that it's one of the two best Cancer Centers of the world. So, he's set up and improved on that program and at least I saw that as well as that when I made a transition from one to the other, it seemed like it wasn't seamless. It's not just the doctor that makes the program. It's the program and its engineering and how it becomes seamless that makes the program. But obviously the

Doctors are key bone. So, Dr. Stephen Nimer happens to be from Laurel. He's from Sloan Kettering and he heads up the program at Sylvester and a chosen Dr. Landgren as a person he felt could bring them to a level like either Anderson or Memorial Sloan Kettering, so he was from Memorial Sloan-Kettering and he chose Dr. Landgren and so that's what their plan is at this point. But the one thing I want to know is the new program that he has is 51 if you look at US news and World Report Sylvester's at 51 which is not so bad based on the thousands that there are and I guess the one thing I need to ask you to begin with is just like Barlogie he went from the best to one that probably nobody heard of UAMS and here you are going from number 2 to number 51 which is probably significantly better. So, I'm going to ask you like I did Barlogie when I was with him what the heck were you thinking?

Dr. Carl Ola Landgren: Awesome. Thank you so much for inviting me here today. Gary it's a great honor and pleasure and we are having a lot of interesting discussions here aside from Health Management. So, what was I thinking? Well, as you briefly here reviewed my background. I've been training my entire life these institutions that will come up very, very competitive. I did my MD, PhD at the Karolinska Institute in Stockholm. I moved to the NCI. I was there for 10 years and then I was recruited to Sloan Kettering and was there for almost 7 years. So, I think what I felt was that we were doing extremely well at Sloan Kettering but I also felt that all these years I hopefully have learned how to build teams and what it really takes to establish the top quality that all these institutions have trained and taught me how to do. So, I felt it was a new challenge for me and it was a new opportunity for me as a leader to establish a program and I was also thinking Florida is the third most populated state in the United States, California, Texas and Florida those are the top three most populated states but there is really no big myeloma center in Florida. So, I was thinking not only it will be a challenge for me, but it would also be a big contribution for patients that live in Florida to have access to top-of-the-line care. So, I thought about it back and forth a lot when Steve Nigra reached out to me as you pointed out Dr. Nigra was at Sloan Kettering for almost 25 years. He was recruited to make the Sylvester Comprehensive Cancer Center here in Miami and NCI-designated Cancer Center which is the top tier Cancer Center kind of Hallmark, and he is the one who made this Sylvester Comprehensive Cancer Center. NCI-designated not happen about two years so when he researched me, he did several times, he tried to talk to me and move me and I said, I'm never leaving New York. He said there is a life after New York City. I said, I don't know. Where would that be? He said, it would be in Miami and he said you can build a top program here that you will also have a second job. So, you will also lead the establishment of an experimental Therapeutics program that goes across all the cancer diseases within the cancer center. So, I was thinking maybe this is the right moment really for me to take on this new challenge. So, I made a decision to come to Miami and I'm very happy here. I've been given a lot of support. I've been able to bring a lot of people with me from New York City and I also hire people from other institutions. I hire probably 15 or more people from top institutions in New York. I hire people from Washington DC. Now, I hired another top-class doctor from the Fred Hutch who is joining me and there are people from Boston that are coming and other places as well. So, I think we are definitely on the roll. I think this is the long answer. The brief answer to your question what was I thinking? I actually think that in order to establish a world-class program you need to have experience; you need to have energy and vision. What you don't need is like hundreds and hundreds of people. We actually can do probably top-of-the-line care and research with the group of say 20 30 people and that's about what we are trying to establish here. So, I already have a team of about 20 people here and our ambition is to become one of the top three myeloma programs in the United States within next five years and we are so far right on track and I'm very, very excited. So that's my answer back.

Gary Petersen: One of the things that I think is important in any myeloma center is that there's a continuity in the program, it's patient-centered, it's focused on the disease as well and what I found is that at all of the locations that have been in the past although it may not have been to begin with like with you and Miami I was probably as disappointed as I could be when I first made that transition because it seemed like there just wasn't the same level of seamlessness that I came to expect from Memorial, from my care leaders and with that I was very open with you about that. I had sent you a number of patients in the past and I didn't feel that they were getting the same level of care, not necessarily care from you but certainly care from a consistent ongoing myeloma centered patient centric position. So as a result I liked you know so in no uncertain terms and you obviously said that you're going to do something about it and we're in the process of doing something about it and knew that was the case and if so, what are some of the things that you came to

understand that you needed to change in order to change not only the program but this specific person's attitude towards that program?

Dr. Carl Ola Landgren: Well, it is something that I was expecting what's going to happen when I moved from some country to another smaller place that you probably will not have all the infrastructure in place day one. It seems like that is unlikely to happen in any discipline. If you go from top of the pyramid to a program that is not yet there you gave some of the statistics before Sloan Kettering and the MD Anderson every other year first to second or second to first and if you pick right here, we were the first and now you're set up, Miami was 51 by some recent rating. So, I think that's the rule probably we are kicking in here in your first encounter. And I knew that there would be a lot of work to be done. But I already had a plan in place and as you know I have worked endlessly and relentlessly and I am on establishing all those gaps. So, to make the long story short. I learned that in order to deliver high-quality care if every person needs to breathe myeloma every day, everyone who is involved in a program needs to understand why this person's job is important and needs to understand what the real mission is for the entire program, you need to understand the big picture and you need to understand why your role is important. So, you cannot have people doing a lot of different diseases or covering a lot of different jobs. You have to have people very special lives and working as a team is teamwork. Teamwork, working together, communication, teamwork, teamwork, teamwork. This is something I learned at Karolinska, I learn about the NCI, I learned about Sloan Kettering. When I came here, I mentioned already I brought a lot of people because a lot of the people I work with, they already knew these steps. So, I didn't train them on this. I just put them here by offering these positions and they just started working from day one and they immediately started communicating with each other and me like the way we used to do in New York City. So, it's basically part of New York City moving to Miami. We just get going right away. I think a lot of people here don't know fully integrated in this model. There are fantastic people here and very hard-working. They're very good people. But the model that was here before was more of a generalist model and we bring to a table the super specialized model. We like center of excellence model. So, we have people answering the phone that only do myeloma, staffers that only do myeloma, nurses, doctors, nurse practitioners only do myeloma and we have internal collaborators on the team saying Radiology, Pathology, Laboratory Medicine and so forth that are dedicated to support the myeloma program. Of course, they did that before also but I think maybe there were multiple people that did that for a little while supporting the program. Now we have people very, very focused on these two jobs and that takes me back to what I said before in order to do that for even a large population of patients, you don't need hundreds and hundreds of people, you could do it with relatively small group but you need to understand that it's about focus and attention to detail and dedication and that's really the model I'm rolling out. So, we're clear….

Gary Petersen: You talk about Communications too and that was one of the things that I had noticed. And when you say generalist and I called in on the same line when somebody called in about a cold and if you get a myeloma patient who has spiked at 103, they don't necessarily want to go through this generalist rigmarole in order to get to their doctor and obviously that's where you've changed it and changed it the most which I congratulate you for that because frankly it's frustrating for me and if it's frustrating for me, it's frustrating for all myeloma patients. You want to call somebody who knows about your disease. They want to know that they're going to talk to an inside nurse or an outside nurse or somebody else who's going to know exactly about their disease and they want their doctor also be available, if they need it because the problem with myeloma is you can get a cold one day and be dead the next and the same thing goes with the COVID-19 and it's happened to a number of people that I know. So put your hand in the right location there's a bunch of old people in Florida I mean, you've got quite a good nest there.

Dr. Carl Ola Landgren: Well as I mentioned before Florida is the third most populated state in the United States. As we know here in the Miami unfortunately, I think there are close to 1000 people being diagnosed with myeloma every year. So, I think we are here to help and support. I think what you mentioned before when you called in. I think the line that they used to have been not for everything. It was a line for blood diseases but that also is not good enough. So, you cannot have patiently Lymphoma, Leukemia, MDS or Myeloma on the same phone line because this is just so dramatically different diseases. So, it has to be one phone number from day one that is the number that you can call and the people that answer will know you, they will be able to solve your problems, they work as a little cell and I learned is the hard way in New York

City. I think my years in New York City were very, very intense years. I love New York City very much. I think one of the experiences that I have there is that everything goes so fast in this city. So, I think in one month to some degree you probably get 10 years of work experience elsewhere and I was there for seven years. So, if you multiply that, that's a lot of years of experience. So, it goes very, very fast. Everyone is on everything and I'm so grateful for the experience I have, all the friends and colleagues I have and I talked to them all the time at Saint Catherine. They taught me so much just seeing how the machine there runs top of the line in everything. That's something I would have with me forever and I'm trying to establish that in Miami.

Gary Petereon: Well, about the consistency it seems there's really a race for the myeloma patients to make sure they get the best care and to me people were dropping just entirely too much before, and now that you've taken care of that I think that's where monstrous step and other places could learn from if they took away anything from this presentation, other myeloma centers could learn from that.

Dr. Carl Ola Landgren: I think that there are a lot of small pieces that go into what you are bringing up and I hung up some speed with everything you say. I think for example, if you are a patient you come to a center, you do a blood test, the blood test is important for decision-making. If that blood test takes many, many days to result, the decision making will be delayed or if it's not 100% perfect that could be potential grey areas for interpretation. So again, I was trained in New York and in New York everything happens very fast. You drive a car red light turns green everyone horns because they want to drive now. So, you have that with you, you come to another place. So, I look here and said, so tell me about the results for this or that essay and he said it takes about a week. I said that's not okay. I'm used to 24 hours but I'll give you 48 hours, so you don't have to rush but not more than 48 hours and I'm going to check everything and make sure the quality is up to the level and we have already here for about 11 months. We have replaced all the instruments for all the MOD testing. We are setting out all the new technologies that we set up in New York be it blood test or MOD tracking. We are taking all the newest electronic imaging here and I would say we probably have one of maybe the most advanced sequencing program for myeloma in the US or may in the world here. So, we have taken a lot of these technologies that basically are in our heads with us. We set everything up and we brought all the instruments. We set up all of the infrastructure now, we're moving fast. So that's what we're doing.

Gary Petersen: Okay. Now you say you're looking to develop a top-class translational research myeloma program and I think you said there's more than just myeloma, it was other cancers as well, right? For the uninformed like me what is a top-class translational research myeloma program?

Dr. Carl Ola Landgren: So, are you referring to all the different diseases or are you referring to a top class translation research?

Gary Petersen: Well myeloma specifically but you mentioned that you're doing it for all diseases right?

Dr. Carl Ola Landgren: Yes or no. Well I am responsible for everything that relates to myeloma here at the Sylvester Comprehensive Cancer Centers that includes the clinical care, the establishment of the whole program, the rollout of all the basic science and also the clinical trials of the drug development. So that goes from the far left to the far right or from the far right to the far left. We covered everything for myeloma, that's my responsibility and for that I've hired a lot of people. There were already people when I came but I hired many people and we have been growing very fast. So, the translational component refers to the fact that you provide top-of-the-line care along the lines of what we have been spending time and talking about. For that there's something on the back end of that, it is a matter of learning from data that you can capture, so if a patient consents to have some leftover blood samples or bone marrow samples or any things like that, or Imaging pictures we have taken. If the patient agrees we could then use that for research and we could use that to develop new better ways to do things, new blood test, we could do blood-based MOD tracking for example Imaging that could be targeted with things like that. All those things are translational. It refers to the fact that you use science as a tool and you link it with clinical outcome and together they can deliver stronger predictors of the future. So, we want to find a cure. We want to improve survival, we want to limit toxicity, we want to improve quality of life. In order to do that you have to gather data. You need to know how to gather it

and analyze it and take it to the next level. So that is what the translational is. My other job is that I'm leader for the experimental Therapeutics program. We also call it internally the experimental and translational program. So that really is a program intended to help all the other disease areas to do the same. So my role is to oversee that for the entire cancer center. Of course I cannot do all the work for all the other disease areas but I'm showing through myeloma how it can be done and there are already people working with me from leukemia, from lymphoma, from some of the soft solving tumors. There are other disease areas on the low block base cancers. A lot of people here have been working on similar things or related themes and now we are trying to learn from each other and see if we can help. So, my goal there is to make sure that they have access to infrastructure in a similar way so I can help them by showing how we have done it or I can learn from them and try to cross fertilize. So it's more of a leader program, more like leadership role but not an operational role to do all the work.

Gary Petersen: That sounds fantastic. You get the same level of patient centered and in disease-focused program which sounds great. Now myeloma happens to be a very complex, you or anybody knows what I mean, I remember that you once had a story. It was something that you once told me and you were thinking about what specialty to get into and you had a mentor and your mentor told you make sure it's not myeloma because nothing has happened in myeloma from the last 30 years. So, there's going to be nothing for the next 30 years to which you said, sounds like a perfect opportunity to improve and I thought that was pretty remarkable. Now, that's a set of guns.

Dr. Carl Ola Landgren: Yeah. No, that's exactly true and there was actually another disease that was warned about and that's Chronic lymphocytic leukemia. So, it was myeloma and chronic lymphocytic leukemia. In the very beginning of my research at the NCI I was doing a little bit of chronic lymphocytic leukemia research and we actually published many years ago. I was the lead author in the paper in the New England Journal of Medicine and we showed that you can identify precursor clones in patients who develop chronic lymphocytic leukemia which is the precursor of that disease similar to MGUS being the precursor of myeloma. So, I guess I ignored both those pieces of advice I was doing both of those thesis and I had to pick one of them and I decided to pick myeloma because I saw that was something which was telling me you have to come here. So, I was just going there, struggling every day into that and I still do every day.

Gary Petersen: I still just often amaze at the level of expertise in the myeloma patients or in the myeloma specialist Community like yourselves, Barlogie, Orlowski and Richardson and go on and on. These are some outstanding individuals and but Dr. Barlogie for example I'm surely amazed like give me a tough problem and then what happens is that the best people are attracted to somehow tackle that problem and with that myeloma life expectancy has gone from 3 years when I was first diagnosed to over 10 years and if you are on myeloma specialist that would be the at least probably 15, 20 years for that matter. So, it's pretty amazing the skill and the expertise for the myeloma clinics. But there seems to be disconnect that I find when I go to one that I really love and follow somebody into it and that is continuity that you've been working on that you took to Memorial Sloan Kettering that was brought to Mount Sinai and that bar left from the MD Anderson and took to UAMS which was not your center of the universe. So, how do you organize and develop a center of excellence for world-class myeloma clinical care?

Dr. Carl Ola Landgren: Well, I think I have all these years of experience from different places. I have the Karolinska experience. I have the NCI experience. I have the Sloan Kettering experience. I integrated those in my head. I have tried to see what worked the best and my conclusion is having a very small group you have a doctor, you have a nurse, you have a nurse practitioner, you have a pharmacist and patient coordinator, five people they work together every day and new patients come to the coordinator, schedule patients and the coordinator collects information that the clinical team needs. The clinical team knows exactly what to do when they talk to each other all the time and when the clinical team says we need to do these tests or we need to do these follow-ups or we need to prescribe these drugs, we need to do these things. The coordinator makes sure that all these things happen. So, if you have such a small world like 5 people they can see many patients in one day, in one week, in one month, in one year. As a program grows you build another team exactly the same way. You have the same exact unit and if the program grows even more, you have a third group like this and as it grows more and more you would have the same structure.

So, it's about scalability. So, what would be a mistake in my experience is to have many doctors working in parallel and covering for each other just to catch up. You need to keep the detail attention and you need to have there close relationship with individual patients at the tea and when I was in New York, I came there we have less than 2000 visits when I started there and when I left there were over 10,000 cases for multiple myeloma in one year and I build that program this way, I hire people like this and ask me hire new doctors the first day they may not be as busy. So sometimes it could share a nurse with someone else or coordinator. I always make sure that when the coordinator answers the phone and that was a unique telephone number to that doctor and the coordinator would say welcome to Dr. Johnson's Clinic even if that coordinator covered Dr. Anderson, he or she could say welcome to the Dr. Amazon when the other number calls. There are two different numbers. It could be the same person as the volume grew, I would hire another person and we grew so fast so we basically had individual cells like this and I think the quality was the same within each of these cells and we could probably scale it up even more in New York there are a lot of patients. So I think here we have already grown when I came here there was one myeloma doctor, I became the second, I hired third, fourth, fifth and I have number 6 starting in less than a month and I am already building these small teams this way and this is how I'm changing culture around myeloma and I used it as a model for building a center of excellence within a disease group and sharing this soon Experimental Therapeutics from the other disease areas so they can also see how they can do the same thing and I think everyone is already seeing how well everything is going for us.

Gary Petersen: Well, thank you very much. So, it becomes obvious how complex this disease is and it takes a great myeloma specialist and an integrated patient centered system to ensure the best myeloma care. So how do you attract and recruit this new group of ambitious researchers and clinicians to follow your lead?

Dr. Carl Ola Landgren: That's a very difficult question. I think my interest in science goes from the very beginning of med school. I was very interested in science. The entire med school, the entire residency and fellowship and I continued having a strong interest in that. I'm a strong believer that if you think about things in a new way, you're fearless, you don't get stuck and always you are thinking how you can improve and don't get stuck in all technologies or all paradigms that were never proven by data and you can really make things better. So, I'm looking for people like that and I constantly look good to recruit and I can tell you already here in Miami and had many, many talented people reaching out from top places Harvard, The New York Institutions, Mayo Clinic and I mentioned places on the west coast. I think people that are driven and ambitious and looking where would be a good place for me. So, if you have this relationship, you share resources with each other. As a leader for the program, I try to be very generous also try to be very direct and say this is what I expect. So, I expect that you develop these things and if it doesn't work for various reasons sometimes the reasons don't work. We've talked about what escape routes would be. So, I give people one, two and then three projects to work on and I try to protect them so they have the resources to move forward and I've done it for many years. As you know I've been a doctor for almost 25 years now, so I tried to share my resources, my knowledge, my funds, my samples, everything I have control over like a family I share with everyone but in return I expect people to drive forward, to build their careers and also build the program and then I have one-on-one meetings with everyone every week. So, I spent a lot of time mentoring people so that I know what everyone is doing and if people are starting to do things that could potentially have some collision with someone else, I would say we need to talk, the three of us so we can sort out for this person as he now has a new idea and this person is thinking about it. Let's talk about how we can work together and help each other. No one can say everything is mine because we are working together. So, I try to foster the culture that if something is very important to someone that you should let go but if someone always says it is very important. That's not okay. You have to be able to say, it's not important. So, it's kind of a generous culture discipline and hard work that through mentoring and I try to set the vision of what's important. Everything is for patients, improve patient outcome, look for a cure, minimize toxicity, try to go after those important questions that can take us to that goal. So, it is a lot of work and it's almost like raising your family. I don't think you can write down like how do you raise a family in the best possible way and I think it is the same thing when you lead a team how do you do that? It's just like a long work and you have to be generous.

Gary Petersen: I think one of the things that I noticed in you is that you are a change agent, you don't settle

for the status quo, my whole career and distribution operations, engineering and business management that I was a change agent and I can tell you being that you always got your head above the trees, type of thing. You're always out in front and people don't necessarily like change, they like the status quo, a number of them do and as a result you're always a target and I've seen you as a target a few times when you went after a MRD great big, when it wasn't even hardly look at, when you talked about hitting patient's when they first got high-risk smoldering and you worked with the folks with regard to that and God forbid you did something like actually took a look at actual data and try to draw conclusions from that actual data, you know millions of points of actual data versus a 100 or 200 points from a clinical trial, that you got your ear, you've got people were taking shots at. I don't understand it but they did it but I do understand if you change, it's not enough if you're not doing this status quo, if you're changing stuff, you're going to get criticized. It's just happens and I applaud you for it because you're probably in an industry in medicine where gold standard is what clinical trials are and to me I consider that the old standard is just not enough data and you've got all this data out there and you tend to remind it and the best do I think, so thank you for that. Now given what I just said is, is there any parting comments that you'd like to share with the audience or comments on a support you've been getting with your efforts and how important is getting support for the program's success?

Dr. Carl Ola Landgren: Well, I made some last points on my ambition. My ambition is the same as it has been the entire time in all the other programs. I mean to develop very, very sophisticated top-of-the-line care for patients and to make sure that we always stay relevant and by coming out with new ideas that all relevant or important and are clinically important. So always having that kind of motion going deliver to Asians and to seek new ideas and to challenge yourself with data and to make sure we always deliver to patients that's really what I think was very important to me. I think the only pieces we have not talked about in that vein that are important is not only about like developing models. I also wanted to make sure that all these things are available. I changed the culture here already from having patients calling and they can be scheduling several days or weeks here. We have to see all patients within five business days at the most. If anyone calls here, if you have the best program, you also have to be able to deliver so that's key important and also…….

Gary Petersen: Is that doable? I mean some places you call for somebody to see somebody and it's like three months or four months, I hope.

Dr. Carl Ola Landgren: It is possible but of course if people would say if someone will come and see me and Charles what I just said I will say yes but there of course will be a limit to what I can do. I don't see this week. I think that six or seven new visits in one day on top of all the follow-ups. There is a lots of work for me but that's what I do because I want to deliver but if I keep on being more and more busy, this is what has happened to me in the past of our places.__(gap in audio)__The former Chief of myeloma from the NCI, he is here. I hire top Specialists from Sloan Kettering. He is here. So, these doctors can also see patients and they are fantastic and I will reveal a secret here that there is nothing I know that they don't know, and we do the same thing. Of course, we are different individuals that's something we always have but from my knowledge perspective, I think we are very, very similar and also we work as a team. So, we would review cases as a group. Every Thursday we go through cases, any patient who is to be discussed and they have one doctor and ask the team to see his or her case. We do that internally every Thursday. So, this is part of the scalability where we can assure rapid access, top quality and we have a scalability factor. You cannot copy people, but you can copy the model and you can build a strong model. I know this works because we already did it and we were able to just build this way in New York. It was very, very solid.

Gary Petersen: I know that you've taken some of the people that I have suggested to see you because you did some telemedicine and they were just so pleased a court response from you. So, I think that's the thing you can get in five days with world-class Myeloma specialist and is just almost beyond belief. But if you can make it happen that's a remarkable advantage over anybody else who's doing it today or pretty much anybody else that's doing it today. Priya are you on the line right now?

Priya Menon: Yes Gary.

Gary Petersen: If you want to see if there are any questions from the audience.

Priya Menon: I know you can wrap up Gary.

Gary Petersen: Okay. Well, thank you very much Priya and thank you for having us. I thank you. Dr. Landgren for this. I think it's obvious to me that it takes more than to begin with. Man, if you don't have a myeloma specialist giving you care, you are in big trouble because they're the only ones that could possibly keep up with this disease myeloma. They're just too much going on specially now but there's also another component to that, which is very important and that's the continuity of care and having a patient-centered and disease-centered program and you've been excellent in providing us with that, with your experience doing that. And I think that if people who have their own myeloma programs view this particular presentation they'll find that there's some nuggets in there that they can bring back to their program to improve their success and it's only something if duplicated can improve myeloma life expectancy significantly greater than it is today because we know that the seer data for myeloma still says there's only about five or six year life expectancy. And when we know that excellent myeloma centers can provide two to three times to four times that level of care. So, Dr. Landgren thank you so much for everything that you do and for success with your efforts at Sylvester and in Miami.

Dr. Carl Ola Landgren: Thank you very much for having me Gary and thank you so much for those kind words. Thank you very much.

Gary Petersen: Thank you sir.