Becoming a part of the solution: The Metastatic Prostate Cancer Project

The Broad Institute in Cambridge, Massachusetts, is one of the most sophisticated bioscience and biotechnology research centers in North America. It seeks to empower a revolution in biomedicine that will accelerate the speed at which we can conquer disease. The Metastatic Prostate Cancer Project is a new initiative being coordinated by the Broad Institute. Initially, it will allow any patient in North America with advanced or metastatic prostate cancer to contribute his personal genetic, genomic, and clinical data to the development of the world's most comprehensive database on advanced prostate cancer permitting the entire prostate cancer research community access this database and accelerate discoveries related to the management of advanced prostate cancer. The prostate cancer panel led by Mike Scott will be talking to Dr. Eli Van Allen about the project.

Full Transcript:

Priya Menon: Good evening and welcome to CureTalks, this is Priya Menon, your host joining you from India and today we are talking about prostate cancer. All prostate cancer talks on CureTalks are conducted in association with Prostate Cancer International and the Prostate Cancer Foundation. As we all know, the Broad Institute in Cambridge Massachusetts, is one of the most sophisticated bioscience and biotechnology research centers in North America. A new initiative the Broad Institute is coordinating is a metastatic prostate cancer project and today we have with us Dr Eli van Allen from Broad Institute talking about the project and how a patient can contribute his personal genetic, genomic and clinical data to the development of the world's most comprehensive database on advanced prostate cancer. Dr Van Allen is Associate member at the Broad Institute, Assistant Professor of Medicine at Harvard Medical School and who has clinical positions at the Dana Farber Cancer Institute and at Brigham and Women's Hospital in Cambridge and Boston, Massachusetts. He is the principal investigator for the metastatic prostate cancer project. Welcome to Cure Talks Dr Van Allen

Dr Van Allen: Thanks for having me.

Priya Menon: This panel is led by Mike Scott. Mike is Co-founder and President of Prostate Cancer International, a prostate cancer-specific not-for-profit educational and informational organization based in Virginia. He's a former chairman of the board of the National Organization for Rare Disorders and is also a board member of the International Myeloma Foundation. Joining Mike are prostate cancer advocates, Joel Nowak, Jan Manarite, and Paul Carpenter. Paul is a patient advocate for men diagnosed with prostate cancer. He has contributed to dozens of online groups and forums and he co-founded a Los Angeles support group for bisexual men living with prostate cancer. Jan is Executive Vice-President of Boston Prostate Cancer International and works along with Mike to implement free projects and programs with patients and caregivers through prostate cancer info link. Joel Nowak is the Founder of Cancer ABCs and survivor of five primary cancers including thyroid, recurrent metastatic prostate cancer, renal cancer, melanoma, appendiceal cancer as well as autoimmune disease Ankylosing Spondylitis. I extend a very warm welcome to everyone on the panel. Thank you for being here with us today. Before Mike begins with the discussion, I would like to remind our audience that we will be addressing questions towards the end of the talk. Dial in using 718-664-6574 and press one on your telephone keypad to let us know if you have a question for Dr van Allen. Alternately you can post your questions on CureTalks.com or email them to priya@trialx.com, with that. Mike, it's all yours.

Mike Scott: Thank you very much indeed Priya for the introduction. Good afternoon, Dr. van Allen, it's a pleasure to have you on the phone today. Perhaps the most sensible thing is for you to take about 10 or 15

minutes and just give us your overview of the metastatic prostate cancer project. I know that it goes beyond metastatic and you're really looking at patients with almost any form of advanced disease. And I know that you've done similar projects in breast cancer and rarer forms of cancer. So with that introduction, perhaps you could give us an initial overview and we'll start thinking of questions we want to ask you.

Dr van Allen: Absolutely, first I would like to thank you Priya, the entire organizing committee for giving me this chance to present and share our project, with this forum and say what a privilege it is to sort of be able to do this and be sort of representing the group. And I think I was thinking about what's the best way to frame the metastatic prostate cancer project and what we're trying to do. And I think the best way to do this may actually be to rewind a little bit and lead lead you and the rest of the group in terms of how we got here and why this patient driven metastatic prostate cancer project is so critical to help us take a big leap forward in discoveries for men fighting this disease for their families and so on. And so to take a quick step back, in my group, you know, at the Broad Institute, at Dana Farber, patients clinically across numerous other context are very interested in understanding the genetics of cancer; because we think the genetics of cancer can tell us about why does cancer arise, and then the genetics of advanced cancer can tell us why does cancer become resistant to the drugs that we have and how can we use that information to figure out what the next kinds of therapies are we'd want to develop to give to patients and to hopefully improve care and hopefully get towards the thing we're all striving for which is trying to cure cancer really across the board.

And it's been one of the privileges of my, one of the honors of my career so far to really be able to participate in these genetic profiling studies that have, in essence sort of laid the map of the genetics of many different cancers, the ones that I've been deeply involved with they're predominantly in prostate cancer, but these also include melanoma, breast cancer, lung cancer and so on and so forth. And we've learned quite a few things about, for instance, in prostate cancer. When we study the genetics of so-called primary prostate cancer, what is the difference between a prostate cancer and a patient DNA that they were born with and we've studied that to great length so far. And it really laid that map out pretty extensively. About four or five years ago as part of a large consortium effort funded by the prostate cancer foundation and Stand Up To Cancer. Again, very fortunate to join a large team science effort whereby we wanted to apply the same kind of genetic studies. But rather than looking at local prostate cancer. So prostate cancer that's treated with surgery or radiation and hormone therapy, rather look at more advanced prostate cancer, castration resistant prostate cancer that is resistant to the drugs that we have. And thinking that if we can look at the genetics of those tumors, we could actually, make great strides towards understanding what are the things we need to drug, what are the new therapies we need to go after, what are the right combinations, what are the right patients that need to be treated with the right combination so on and so forth. And so as a consortium effort expanding eight different institutions, we embarked on this effort together and it took some number of years, but we accrued the first roughly 150 men with advanced castration resistant prostate cancer that we can get tumor biopsies on. We did comprehensive genetic analysis and we laid the first map of advanced prostate cancer.

And this was something we reported on a couple of years ago and this was a really important study because it identified multiple discoveries that we've frankly could never have anticipated going into this. That for instance, about 20% of men with advanced prostate cancer have mutations in these so called DNA repair genes that might indicate potential for platinum chemotherapy, parp inhibitors, other, other men may have mutations in other genes that may lead to targeted therapy usage and so on. And we've since sort of continue to accrue in that project and move along. But the reason I lay out this pathway is that, so we made those discoveries in 2015 and in 2015 at the Broad Institute, we also started experimenting with a novel idea because that research project that I described was really sort of a, I would say, a traditional research project. It was a top down initiative developed by researchers at famous academic institutions that, whom the protocols were developed and studies were designed and things sort of trickled down. And eventually a patient was involved only because the patient had the tumor and he was going through the biopsy and therefore needed to be involved at a critical juncture. And that's frankly, how most of research is being done. But at the Broad Institute, we have this idea that maybe we can flip this whole concept of how research is done on its head and rather than engage with the patient at the, almost the last step we start at the day off from day one and build research projects hand in hand with patients. We rather than rely on patients have by

chance walking into one of a few very large academic medical centers we actually go, we find the patients where they are using social media, using websites, using the ability that we have to actually mail kits to patients homes and so that they can contribute their, their genetic information or their DNA to us directly.

And see if we can flip the whole concept of how we do research on the head. And the first initiative that was launched was actually launched at around the same time that our first wave of discoveries in advanced prostate cancer was reported. So roughly like summer, fall 2015. And this was in metastatic breast cancer and the project is called the Metastatic Breast Cancer Project. And I described that we spent a few years to study 150 men with prostate cancer. It took us a long time. It was very difficult. In this breast cancer project, in the order of about a couple of years, we've been able to obtain consents and go after tumors of over 4,000 women and men across the United States with a metastatic breast cancer who are willing to say, count me in, I want to participate in this research. We built the whole mechanism such that it resonated with those patients because it was in essence written by the patients. And it's been instrumental in guiding discoveries in that context. And watching that with an awe naturally then saying, gosh, you know, maybe we can do the same thing but do this for metastatic prostate cancer. And that is really sort of the impetus for the metastatic prostate cancer project, which is a patient driven research initiative that has been built by patients, in close collaboration with with patients, patient advocates, and many, many folks who aren't normally at the table of research projects on day one.

And the goal here is really to actually sort of just take one huge step forward in terms of the number of patients we can actually study, the types of patients we can study, and the mechanisms with which we can engage with patients to do research together. And I think what's been so amazing to see is that we launched this project, about a month ago and I mentioned that it took for the first wave of discovery of trying to study men with advanced prostate cancer took three or four years, all the different groups working together or rather challenging and so on, to get 150 patients to be willing to be participating in such a study in less. In about a month, we have approached 250 men who've said, count me in and proceeded to provide consent through a website through whom we've sent out kits, saliva kits, and blood biopsy kits, which I'll explain a little bit later. And we are starting to actually receive these things back. And the ability to accelerate research that would normally take years and years and years in the order of literally like three or four weeks is something that I still find mind boggling and something that I would say as a scientist I could not imagine would even be feasible. But it's something that's happening now and that's, I think what the power of patient driven research really is all about, is that we can actually do, a research project that would normally take years and years and years, on the order of weeks to months and thereby accelerate the pace of discovery, make better sense of all of the mutations that we see in this patient population to help guide further drug development, combination clinical trials, new treatment pathways for patient populations, bigger discoveries and so on and so forth. And thereby, move the needle forward much faster than, than frankly I could have ever imagined.

Mike Scott: Dr van Allen, I am a patient, I ran across information about the project I got it from the website.I read through stuff and I read through the link that said Sign me up. What are the next things that happen?

Dr van Allen: Sorry, it was a little fuzzy. But if your question was, if you go to the website and you read through the information and you clicked the count me in button, what happens next is that you're asked a series of questions, about your disease and you then click a few buttons that basically described the project that you're agreeing to participate in. And then, the next thing, you'll get an email confirmation about this and a few days later you'll get a Fedex box – It's a saliva kit in the mail and that you can then provide your saliva that we can use to study

Mike Scott: If I signed up for 23andme or if I signed up for Ancestry or any of the other service, simple saliva kit?

Dr van Allen: Simple saliva kit is the first premise now that there's two key things to be clear on here and I think it's worth being very transparent about it is that this is a research project and while our ultimate goal and frankly much of what much of 2018 is all about is actually figuring out the logistics of it to create a

mechanism that we can actually provide individualized results back. Like even if they're not really about clinical medicine, 23andme and Ancestry, those kinds of things that will provide something back. We can't do that right now. We can provide aggregate results back that information thing, discoveries that we've learned from the study that, that anyone who participates in can hand to their doctor. So just want to be clear on that point. The other part of this study that we think is pretty exciting is that unlike some of the prior direct to patient initiatives that we've already launched in this patient population, most men they may not even have a biopsy that we can use from their tumor that we can actually study the genetics of. And so with this study we are, we're experimenting with actually mailing out what's called blood biopsy kits. And the idea here is that with a simple a vial of blood we can actually find the genetics of the tumor in the blood and, and study that rather than what is usually done, which is trying to track down a biopsy that might be here and there or impossible to find. And the way that works is that, so the saliva we get you spit into the tube and then you put it right back in the mail with the blood biopsy kit, you bring the blood that kit to your regular clinic appointments and they'll just help you get the one extra tube of blood that you put again, put back in the mail and send back to us.

Mike Scott: So I can do that when I go for a PSA test or something?

Dr van Allen: Exactly.

Mike Scott: Ok and when I sign up am I telling you who my doctor is, will they know I am involved in this project?

Dr van Allen: Yes and so once it, absolutely. So one thing we want to be clear on is that the goal here is obviously not to sort of circumvent the patient doctor relationship and in fact we are working closely with multiple physicians to make sure this project also resonates with doctors. And we want to work closely with them in that regard. And indeed, part of the goal here is also to not only generate the genetic information but also understand the clinical information so we can make those discoveries even faster and in essence put the genetics in some kinds of context. So for that we need to know where the patient's being treated and what not. So we can get that information, but it's pretty simple and that also is part of the same online experience that patients go through when they consent for the project.

Mike Scott: Let me ask you a simple question or stupid question. You said that you weren't going to be able to tell me exactly what this project might be able to do for me but you would be able to tell me somethings. So would that be the sort of thing that you were able to say we found that 80% percent of patients who have a metastasis, a visceral metastasis in the liver have, this sort of genetic abnormality or y % perhaps something else. Do you see what I'm saying?

Dr van Allen: Exactly. You are exactly right. And we think it's that kind of information that can be immediately actionable if presented to a physician who may not be as I would say genomically aware if that's a phrase and so that in itself is quite valuable. And two, I believe, one thing we feel strongly about is that you're being realistic. That, research is hard and it can be frustrating sometimes, but we believe that a part of our goal here is an altruistic goal to really help the future. And there really is something that we really feel strongly about that we know a lot of the men who we talked to, who are working with us on these projects feel strongly about is that, you know, this may not ever actually helped me, but these findings may actually be the thing that helps my brothers or my sons or my grandkids. And I think that's part of the goal here is recognizing how important that aspect of it as well.

Mike Scott: Let me see if I can get a couple of other things clear and then we can listen to other members of the panel. What you'd like to think we could do is within a couple of years get something like 2000-4000 men from whom you had both blood samples and saliva samples that you've been able to test. And when you've got all that data, what do you do with all that data? I mean, my understanding is you're going to be able to share that with other researches in some way.

Dr van Allen: Exactly. Yeah. So actually we won't even wait that long. So as soon as we get, we actually

already have in our whiteboard, in our office, we have sort of a plan. Our goal is to actually have generated enough data, that we would make our first public release of, just to be clear, of de-identified data, so not information that can be traced back to anyone for privacy issues, but have our first release for the community, by fall of 2018, so by fall of this year. And the reason is that a lot of times these kinds of research projects are met with some skepticism by patients because they may hear that so and so wants to study their tumors and create a resource that kind of is almost becomes like a silo that it only gets released when some researcher decides to do so.

And I think we feel like that is completely opposed to what we and understandably every patient would want which is to make this data available to the entire community as fast as possible such that even if we can't put the whole puzzle together ourselves, maybe somebody else can and we want to enable that as quickly as possible. And then indeed towards that end, in the metastatic breast cancer project, we already have proof in the pudding in that we've now made a public release of the first 100 patients with both molecular data, genetic data and clinical data that's been released without any of the usual things that are expected from a researcher's perspective, because it's so important that the community know that we're serious about just making it available for the entire community as a resource to use and we are actually trying to really strongly encourage everyone to use it because we think that that's the fastest way to make discoveries happen.

Mike Scott: So you are going to be following up with my doctor once you've got the samples, you're going to be following up with my doctor to say, can you give me details about his treatment to date so that you can correlate that in some way to the rest of the data. Is that my understanding?

Dr van Allen: Exactly yes.

Mike Scott: OK. So let me throw this open to a couple of others and perhaps we should begin with Joel since he has every known form of cancer under the sun and he'll want you to do projects in all of them. So Joel is the president of Cancer ABCs and the project is all yours. Go ahead.

Joel T Nowak: Hello. So first of all I want to thank Dr van Allen so much for participating and actually more importantly for being the mastermind along with the rest of the team for this fantastic project. So thank you so much to you and the entire team. I'm really excited about it because it is going to make such important information available. We talk a lot about personalized medicine and people should understand that this is really an important giant step in moving us towards personalized medicine. Being able to understand the genetics of your particular tumor and being able to figure out what the best treatments are, but it's going to take awhile. So I do know that some men have had problems getting their blood samples taken. But I think I just want to let you know that when I had a problem when it went to the lab for my PSA test, I just waited until the next time I was at my doctor's office and he just had it done, a difficult thing. So I did want to share that. And I also wanted to ask Dr Van Allen, if you would, you have talked a little bit about it, about the return to the aggregate data. Can you give us an example of what aggregate data would look like and what perhaps an individual's doctor and they could perhaps do or think about that data?

Dr van Allen: Absolutely. So first Joel, obviously, so thank you and Jan and the rest of the patient and patient advocates, who are the real champions of this project. I think again I mean that sincerely, this is and you guys know this because you guys even go back to pointing out embarrassing spelling mistakes that I made way back when these things actually built, it is the kind of things that we just don't as researchers always were blinded to you, but you guys are so quick to jump on. But it's the most important thing. So thank you guys. In terms of sort of aggregate results, it's a great question. So I think the best example to keep it in metastatic prostate cancer is, when we made an observation in our 2015 study that 20% of men had had mutations, men with advanced prostate cancer has mutations in DNA repair genes and what we could do with that as soon as we found that even though we couldn't trace it back to the individuals that had those events, that finding can be distilled into a very simple blurb and could be handed to any physician who would then with an argument state, that's one in five men with advanced prostate cancer, have a mutation in something that may change, not only change the course of my clinical care and the drugs that you might

want to give me, but also in some cases, especially for men who have these mutations in their so called inherited genome, where germ-line gene, the DNA that they were born with, may have implications for my family which means, you can then make a very strong case to your physician – you need to do genetic testing for me.

And so even though we don't have the results for any one individual, that finding in essence became the thing that changed practice immediately as far as we're concerned, for both the patients, all the patients that came forward after that study, but also for those who may have been involved in the study but didn't know, but you could immediately take that distilled blurb down and hand it to their physicians and say, based off of this, I need you to do these certain tests, and so that's the power of the aggregate information even though it may not be, you know, personalized to one individual at the moment, it's still is profoundly important and actually even stronger than it would be if it was just one individual's information because it's sort of part of a larger set of data that we can feel much more confident about.

Joel T. Nowak: So in essence, the issues about this project benefiting my children and my brothers. There also is a possibility that I may in turn or as a participant directly benefit in obviously not immediately, not tomorrow, but some time in the future. Also, I just want to point out, I don't think you mentioned the web page or how do people get involved or find out information. I don't want you to forget that's important,

Dr van Allen: Right, yeah sorry, so of course, thank you for that. So, it's very straightforward. It's www.mpcproject.org, or you can just google metastatic prostate cancer project, should get you there. And to your first question, yes, so even though, we think the pace of discovery is getting so fast if things that used to take decades or take five plus years can be shrunken down in terms of like months if not years. And so we think it's entirely feasible that these kinds of discoveries could happen in that time frame for this project. And so we do believe that there's a chance of what you just described, but we also want to say that, there's so many other sort of benefits as well. I guess this is what I would say.

Joel T. Nowak: Thank you.

Paul Carpenter: So this is Paul Carpenter. I had a couple of questions for you. I'm very grateful to you for doing this sort of bottom up thing that I've been pushing doctors and researchers to do for years and I wish Tony Crispino was also on the line, because I know he very much like this way. I would wonder if the biopsy and pathology slides might be even more valuable than the blood vials and for those who have them and they're relatively fresh, would that be something that you could use? 29:03

Dr van Allen: So one, I'm thrilled to hear you say that, this is something you're excited about. And I think, for those of us in the research world, we're so used to sort of the old fashioned way of doing this, that of science that we did, the notion of saying like, start with the patients and have them drive the project. Still feels like something that when, depending on who you ask may sound like something that's a little bit out there.

Paul Carpenter: Actually we have been doing this for quite some time, but it hasn't been under the aegis of scientific research. Were you on the Young Adult cancer project, where the thousands of men with prostate cancer who shared their stories and it was not just a community but a lot of valuable information. Anyway, please. You have the floor.

Dr van Allen: Well yes, those are the kinds of things that we want to sort of then channel into genetics and science. And in terms of your question. So I didn't mean to say that we were discarding or not going to go to attempt to study the pathology slides in the tumor biopsies that were done. Indeed, we actually when possible very much attempt to do so. But we do recognize that oftentimes practically that that's not feasible because you know, men may have gotten a biopsy 10, 15 years ago in a urology clinic that may even not even be open anymore before they ended up developing a more advanced disease and so they may not ever get another biopsy. And so there are instances where it's not possible. But, indeed when possible, we would definitely be keen to study that as well.

Paul Carpenter: For example, I would think that the most valuable federal comparisons you could get would be someone who had a pre castration resistant prostate cancer and a year or so later it becomes castration resistant. What changed? Everything else was the same except that gene or those genes that would be wonderful to get.

Dr van Allen: Exactly. And indeed we have actually done some of that already and the sample size, the number of patients in whom we were actually able to do that successfully was very small. So in one study that we recently reported it was 7 men. And what's so compelling about that approach is that in those 7 men, we found enough of a signal about involving a gene called cdk4 and cdk6 is two genes that that actually have drugs, that are in development in this case for breast cancer that and we have immediately then gone back to the company and said, Hey, you know, here's an indication on prostate cancer that you need to jump on immediately. And it translated that into what's going to hopefully be a clinical trial in the not too distant future. And, and that was just, that was 7 men so, we by no means have exhausted the potential to make those kinds of discoveries and translate that into immediately, your compelling trials and opportunities and therapies would that, that we could not have predicted in any other way. So yes, I completely agree that that's within the scope of what we're trying to do here and, and something we're really, we're hoping to hoping to do again in partner with, with patients.

Paul Carpenter: That sounds great. I had several other questions, but I'm not the only person here and yield it to Jan or Joel or Mike if you have something.

Jan Manarite: Hey this is Jan hi Dr van Allen, how are you? Thanks for being on and thanks Mike and Priya for doing this. You know me, I always try to think like a patient, which I'm not one, but I was a caregiver. So I was really interested in the comment you made about the finding of approximately 20% of men, one out of five had a specific finding when they were advanced and I know you said DNA something, I'd wonder if you could repeat that and I want to ask a question that goes with it, if that's OK.

Dr van Allen: Absolutely, so what we found was that in studying the genetics of men with advanced prostate cancer, whether it's the genetics of the tumor itself or the genetics of the DNA that the person was born with from their parents. About 20 or so percent have genetic changes or mutations in a set of genes that we categorize as the so called DNA repair genes or more commonly known, some of them are known in breast cancer the breast cancer world, like the bracket gene that Angelina Jolie, was very vocal about. it's all part of that same family.

Jan Manarite: So if I'm a patient and I hear you say this, I would go to my medical oncologist and I would ask him to give me this hereditary genetic testing. What do I ask my doctor?

Dr van Allen: If you have advanced prostate cancer, you could ask your doctor for both hereditary genetic testing and tumor testing and those are to be clear, those are two different tests. One would be of the blood of the DNA that you were born with from your parents. One would be of the tumor biopsy that you might have had from some time ago.

Jan Manarite: So the blood tests tend to show you what you've carried your whole life, testing that tumor shows you specifically what your tumor is expressing and they can be two very different things for patient. Correct?

Dr van Allen: Correct, exactly.

Jan Manarite: If I could ask a follow-up question and I know there was a consensus conference in Philadelphia last year and something released in Journal of Clinical Oncology, I think February this year, talking about some of this stuff. So I feel like genetic counselors are going to be our new medical professionals and I feel like we're, we're going to overwhelm them. But I wonder if you have any insight on finding a genetic counselor or working with one.

Dr van Allen: Yes. So you're absolutely right. And I think, one thing we've already seen in our hospital here at Dana Farber, that all the genetic counselors who are trained for many years in breast and ovarian cancer, all of a sudden have a lot of guys knocking on their door that we are sending their way and I think we're rapidly stressing the system here and this is a place where there are many genetic counselors around. We know that it's difficult to find, in general. Our hope is that we're trying to do is actually empower physicians like oncologists and other caregivers who may not typically be involved in that kind of aspect of a patient's care, to become more involved when there is no available genetic counseling service, better that's feasible to access. And then we're also looking into opportunities for tele-genetic counseling and other means of sort of bringing the genetic counselors to the patients when the patients can't get to a genetic counselor in person. This also speaks to why, it's actually hard to, we want to make sure when we bring the genetic testing to patients as part of this research project that we can actually, we don't want to actually do the aspect of the project that gives individualized results back until we can figure out how to solve that problem, for example, in addition to many other logistical issues. So, you raised a very important point that the role we in the medical community are still trying to figure out how to solve.

Jan Manarite: Yeah, I think we're at a fast pace and we're just going to have to find solutions as we go. One last question, the key to this project is in real simple terms, numbers, numbers, numbers, numbers. So anybody who goes on to mpcproject.org; can find the Facebook page also at the bottom as this is something you want to share on Facebook and just get more awareness out. It's pretty easy to do on Facebook.

Dr van Allen: I would echo Jan's point on this, the reason why the metastatic breast cancer project has been able to sort of accelerate that whole field and get so many thousands of women and men to sign up is not because myself and the others on the team sort of are famous people and push it forward, it's because patients are sharing it with other patients and patient caregivers are sharing it with other patients and other caregivers and it's happening in a very organic way and we believe that that model, it's sort of the, the right way to do things if what we're supposed to be as a patient driven project. So if you go to mpcproject.org, and it's something you're interested in doing, you can also have a mechanism to either share it via Facebook, via twitter, via email, via whatever capacity that you're sort of comfortable with. And that we think that organic strategy is the right path forward here.

Joel T. Nowak: I was just going to say is this study intended to be longitudinal in nature, so in other words, I give you you get my genetic material and so forth and my medical records and then question six months or a year, does it change or I have a new biopsy? Are you interested in collecting that data and is there a system set up for that?

Dr van Allen: So yes and yes. So we are very interested in that and for the reasons that Paul mentioned because I think there's huge value in studying that to help inform drugs and therapies and trials and whatnot. The mechanism is actually going to be two fold and we will obviously try to go after the formal records, but we think here again, there's power, the patients have the power and we're developing sort of repeat surveys that patients have a chance to provide their own voice and provide patient reported data on where they're at with their disease, what's happening in their life. And actually doing not only help solve the problem you just described, but actually in some cases can even just prompt research questions that we never would've thought of, that are sort of become up to the forefront of the science we'd like to pursue because of the kinds of, the things that were just listening to what patients are telling us here and sort of guiding the science based off of that.

Mike Scott: Dr van Allen thank you. I just have one more quick question and then I'm going to let Priya see if we've got questions from the audience. You've called it the metastatic prostate cancer project – MPC project. But my understanding is you are actually accepting pretty much any form of advanced prostate cancer patients. Can you just make sure we're all clear about that?

Dr van Allen: Yes. So I think and our goal here is really to think about prostate cancer has left the gland and from our perspective counts as sort of not localized prostate cancer. And so the naming is always a little bit tricky in this disease is it advanced, is it metastatic? But I think from our perspective, we're very keen to

study men along that entire spectrum of folks who in whom prostate cancer's left the gland and that could be lymph nodes, that can be biochemical recurrence, that could be bone metastasis, liver metastasis and so on.

Mike Scott: Right so basically, if you've got any form of progressive disease, you are eligible to participate.

Dr van Allen: Yes and also to that there's folks who had been through the outpouring of interest from folks who don't necessarily have metastatic prostate cancer but who have come across our site, there are ways to participate in terms of providing patient reported information that maybe we can't sort of act on right this moment. But it's the kind of thing that could easily become something that can turn into a project down the road. And so that's OK too.

Mike Scott: Ok so Priya, I'm going to hand it back to you in case you got calls on the line.

Priya Menon: Thank you Mike. Listeners, if you have a question for Dr van Allen, please press one on your keypad and let us know. The number to dial in 718-664-6574. If you've already posted your questions on our website, we are going to be addressing them now. Jan has been really great, she has taken time out and answered quite a few of our questions. So thank you so much Jan. Dr van Allen, I will be reading them out so that you can probably just give quick answers to the questions that had been posted. The first one says I have metastatic prostate cancer which is currently well under control and initially ADT, Docetaxel followed by prostectomy, lymphadenectomy and now he's under the Zoladex and Enzalutamide and Denosumab PSA is less than 0.01. So he says two years ago after prostectomy, I had a sample of the cancerous tissue from the prostate tested for BRCA 1 and 2 and the test was positive for BRCA 2. A test of my blood which I did a year later came back negative. That is no germline BRCA 1 or 2. Would you expect that metastasis would also show BRCA 2 mutation and hence is necessary be treatable with a BA RPA inhibitor?

Dr van Allen: So that's a great question. It also exposes the challenges, in the current state of challenges and understanding of what these different genetic tests are. It sounds like this individual has had both the sort of inherited DNA test and the tumor tests for genetics, those are the two tests that Jan was asking me about a few moments ago and the BRCA 2 mutation is only in the tumor test, not in the inherited DNA test. So what we're learning, and this is all happening in real time, is that men who have these mutations from either tests seem to be more likely to respond to both parp inhibitors and to a class of chemotherapies called platinum chemotherapy. So that may be the case in this context. I'll just stress though that this patient described that, things are currently well under control, which is fantastic and there's no indication to necessarily do anything right now. The other thing I'll say is that we're still learning how best to use these therapies and there are many clinical trials that are open for men with those kinds of genetics. So it always encourages anyone who's interested and has access to consider a clinical trial because the only way we're going to learn and put the puzzle together is actually your patient participation in that context as well.

Priya Menon: Thank you, Dr van Allen. Our next listener question is now it appears that the immune response produced by ablation combined with intra tumoral injection of immunotherapy agents such as Yervoy, Opdivo and Keytruda can create a highly effective anticancer immune response with eradication of cancer, even beyond the directly treated site. He wants to know if anyone here is familiar with this approach metastatic prostate cancer which has been performed by Dr. Jason Williams.

Dr van Allen: So there are studies under underway or sort of in progress looking at some of these immunotherapy agents that were listed here and their relative utility in metastatic prostate cancer. The reality thus far has been the results had been pretty disappointing. Most men have not responded, although some do. And actually, one of the questions that we can actually potentially address in the metastatic prostate cancer project is what is unique about the genetics of those men, because some of these men are participating in this project and they have self reported that they've received these therapies. So I'm not particularly familiar with the specific approach by the website listed but I think again, more generally, there are actually quite a few clinical trials happening in various places where people are trying to study these drugs in metastatic prostate cancer better. And so any opportunity to participate in those may help us all put this puzzle together. But again, it also stated like, men are getting these therapies in the community in the

real world by one way or another, and any men who wanted to go to mpcproject.org, and participate in our study can actually help us help inform those that puzzle as well and actually help, figure out what's different because that could guide how we use these drugs for all men with metastatic prostate cancer.

Priya Menon: Thank you Dr van Allen. We just got a question. I've submitted a sputum and blood sample, will I get any personal results or are they all wrapped up in general non-Specific summary?

Dr van Allen: Great. So that's a great question and speaks to what we're one of the key things here is that for the mpcproject.org at the moment it is purely a research study, which means as we make discoveries, we can present the aggregate results of the tens, hundreds or thousands of men who and whom we have data that we can provide back to the participants who could then take that information to their doctor and ask about relevance. At the moment we are not able to return individualized results from an individual patient's genetics to back to that patient. But it is something we're obviously very keen to try to figure out how to do and are working towards over the course of this next year.

Mike Scott: So Dr van Allen just to follow up on that, so what I think I hear your saying is that it might be possible if it starts to look like a good idea to be able to provide those results back to the physician, is that where you think you might go?

Dr van Allen: It's a great question. It's all still a work in progress because 1- we don't want to intervene between the sacred patient physician relationship. 2 – want to be able to provide a test that sort of meets the clinical grade criteria that are needed to be a real test that can be used for patient care and 3 – want to do it in a, as most as a responsible way. And so all of those things are, are our challenges that we as a community need to overcome so that we can do this effectively. It is something we're very keen to build towards. And we're working very hard behind the scenes to,figure this all out. But for now this project and the other count me in projects are purely research projects.

Mike Scott: I see, ok thank you Priya you are back up, sorry..

Priya Menon: Dr van Allen, next question. I know it's a slightly away from the topic that we are discussing, but a person refers to an article on tapeworm drug that fights prostate cancer and using NTZ (nitazoxanide) for the treatment of prostate cancer with a Gleason score of seven and a PSA of 5.61

Dr van Allen: Sorry the agent. I didn't catch the agent. Could you repeat that?

Priya Menon – NTZ (nitazoxanide)

Dr van Allen: There's, it's not something that I think we feel like is, we have enough information on as being relevant for patients, especially those, it sounds like you have what's called local prostate cancer and in who it has not spread outside the gland. It does sort of actually sort of present an interesting, it is an interesting question because it's sort of part of the, it's the kind of information because patients are oftentimes taking things like this perhaps even without telling their doctor, but it's the kind of thing that they're self reporting in the surveys that we're getting as part of the MPC project in the initial launch.

That could represent the kind of things that we didn't even realize we had the potential to ask, so for instance, are there certain interventions that the men are doing either dietary exercise, off label therapeutic, a typical medications that they would tell us that we can actually link to the tumor genetics and whatnot, which are completely uncharted territory scientifically, but it ended up kind of things that are hard to study through a traditional research program but are exactly the kind of things that we can actually try to do here.

And so all the more reason why we're very keen to sort of cast as wide a net as possible and provide a mechanism for men to actually share all the things that they're doing that may oftentimes don't end up in the medical record that their doctor may never write down in a clinic note. But the patient themselves using their own voice can share with us.

Priya Menon: Thank you doctor. Paul you had some questions for Dr van Allen, please go ahead and ask them.

Paul Carpenter: Ok, this one's a simple one, is the blood sample affected by the medications, the patient might be taking and by the genome of course?

Dr van Allen: That's a great question. And actually I think it's a question we don't scientifically really know the answer to. We know that if the drug is working, then it'll be less likely for us to find the tumor DNA in the blood. But other than that, we actually don't know the answer to that question for almost any cancer therapy that we give to in any context in any cancer. So the short answer is we don't know, but we'd love that. That's the kind of question that could easily be sparked by this kind of an effort.

Paul Carpenter: Ok I was surprised by the answer, so I'm glad I asked that. In other words, more people more data. I was also interested in, this is probably something you can't really answer, but how could you correct for sample bias, especially in aggregate data when chances are good that the samples you got are more likely well-educated to do perhaps a little more affluent patients and other patients may be less well served. And of course, that's been a problem in medical research forever.

Dr van Allen: So I'm actually thrilled you asked that question because I think it speaks to one of the most important things we're trying to do with both the metastatic prostate cancer project and the other count-me-in projects and you hit the nail on the head. This kind of research is embarrassingly skewed towards Caucasian patient populations oftentimes have sort of middle, upper class socioeconomic status and generally we have very little understanding of the differences, either genetic or otherwise that helped contribute to cancers either, as they arise or as they become metastatic. In other patient populations. And this is especially important in prostate cancer because we know clinically that men of African descent, for example, have oftentimes present with more aggressive prostate cancer at a younger age that's less responsive to therapies and therefore they are more likely to die.

And we don't understand why but almost very few men who are African American who have prostate cancer have ever been studied. And that is, there's many reasons for that. But some of them may be simple as you know, again, it comes back to, well, do those men go to the five or six or seven cancer centers that we typically conduct these kinds of research programs in. And the answer is usually no. And so a mechanism like the metastatic prostate cancer project, which anyone with an Internet connection can actually login to and sign up for, is a way around that. But to your point, it's insufficient in that itself because there, there's still probably a lot of men who may not be either for whom that, that may be a barrier. And so we're actually working with some of the members of our patient advisory council to come up with strategies to actually bring, for instance, either flyers about the study to other other places where we're focused, congregate that we can actually tap into these communities, whether it's church groups or support networks or whatnot and socialize these projects in places we don't typically do. And in fact, actually it is really cool opportunity to do this. So working with something called the Prostate Network, which is a prostate cancer support group based in Kansas City, where by myself and one of the members of our prospects are metastatic prostate cancer project team skyped into their monthly meeting and presented the project directly though.

Paul Carpenter: That's a great idea.

Dr van Allen: And we just connected directly with a small group. We should, we discuss the project. It was, it was clearly sort of a heterogeneous group of guys who some of whom or seem like they were more helpful, more literate about medical care than others. But we got to connect with all. And it was awesome and they're great, their feedback was awesome. It was a really fun thing to do. And indeed, during the soft launch for this project over the last few weeks, we have this nice cluster of guys in and around the Kansas City area who've signed up. They were probably all from that one interaction. I think these are the kinds of things that we just never dream of doing in a traditional way. It's still hard though. We still have a lot of work to do to try be able to, being an honest broker in terms of like, being trustworthy in, into all of the communities that matter to really make this work. But we were really interested in trying to break through that

study of men with prostate cancer who have not been traditionally been able to participate in these kinds of, these kinds of research projects.

Paul Carpenter: Oh your enthusiasm is absolutely wonderful to hear and thank you for that.

Dr van Allen: It's easy for me because I get to work with cool people like Jan, Prostate Cancer International, Joel, Cancer ABC's, Mike's got it's like I got to say it's such a, nothing to do necessarily to do profiling of the project itself, but like on a personal level, the kind of thing where you spend all your time learning how to be a doctor and what it was supposed to mean and then you get to participate in things like this and realize that, you don't know the first thing about what I thought was really like until you do something like this and it's even actually helped me, I feel like it helped me become a better doctor. And that's not, that was by no means the intent of this project, and obviously not the primary goal, but I mean, you know, if it's just a privilege to get to engage with this group and do all this fun stuff together.

Mike Scott: So I think we've pretty much reached the end of our time and Dr van Allen I'd really like to thank you for taking your time out this evening to talk to us all in the hoop. It's been interesting to all the people online and hopefully this will get shared extensively afterwards, a number of our programs do. So Priya would you like to wrap this up for the evening?

Priya Menon: Thank you Mike, yes. I totally resonate with Mike and Dr van Allen thank you so much for your time and all the information that you shared regarding metastatic prostate cancer and thank you so much for being here. Mike, Jan, Joel and Paul, thank you so much for your participation, those great questions. The talk will be made available on CureTalks website, and you can also embed your talks on your websites and blogs now, so please visit curetalks.com for details on our upcoming talks. Have a great evening, thank you everyone.