



## Public Health Live! Broadcast Transcript

### January 2015: Prediabetes-How Healthcare Providers Can Take Action

**Moderator Rachel Breidster:** Hello and welcome to Public Health Live, the third Thursday breakfast broadcast. I am Rachel Breidster and I'll be your moderator today. Before we get started, I would like to ask that you please fill out your online evaluation at the end of the webcast. Continuing education credits are available after you take our short post-test, and your feedback is helpful in planning future programs. We encourage you to let us know what topics are of interest to you, and how we can best meet your needs. As for today's program, we will be taking your questions throughout the hour by phone. The toll-free number is 1-800-452-0662 or you may send your written question by e-mail at any time. Please e-mail us throughout the hour at "phlive.ny@gmail.com". Today's program is "Prediabetes: How Healthcare Providers Can Take Action". Our guest is Doctor Jill Abelseh, an endocrinologist and director of Capital Region Diabetes and Endocrine Care with St. Peter's Health Partners in Albany. Doctor, [we] thank you for being here.

**Doctor Jill M. Abelseh:** Thank you for having me.

**M:** To start off today, can you give us some context and talk about the obesity epidemic that's going on across the country?

**D:** I think you are defining it perfectly. It clearly is an epidemic. And really, this picture is a picture of evolutionary success. Because as technology develops, we become more attached to laptops, computers, Facebook and our iPhones – all of those things –and we become more sedentary. So in the past, people would actually exercise as part of their daily life. Now we have to choose to exercise. Actually, we're becoming more attached to fast foods – in our busy life –as we become more economically challenged and this is the picture that we see.

**M:** We have this obesity epidemic going on across the country. Does this obesity epidemic risk factors vary state-to-state and by different types of population?

**D:** Sure. As you can see depicted on the screen, this is a slide actually of self-reported obesity among Non-Hispanic white adults by state. And it ranges from 50% of that group, to greater than 35% of the population. As we then look at Non-Hispanic black adults, you can see the prevalence is much greater. And then as we switch to Hispanic adults, there's a difference as well. So clearly, there's an ethnic variation in terms of the prevalence of obesity.

**M:** Now, in addition to having varying rates by race and ethnicity, have these rates changed over time?

**D:** Absolutely. If we look at this slide, which is the age of death adjusted obesity in diagnosed diabetes in U.S. adults, and this is from 1994, you can see obesity described as a BMI greater than 30 and then diabetes. As we follow along, and move ahead six years to 2000, you can see the incidence of both obesity and diabetes has dramatically increased. And then as we get to 2010, clearly it's shocking how much obesity has increased. And I think it's clear from the slides that the diabetes epidemic clearly mirrors the obesity epidemic.

**M:** Can you tell me a little bit about the impact of diabetes in New York State and nationally? You have shown it's growing, so what impact is that having on us?

**D:** Well clearly, there are about 29.1 million people in the United States, that's about 9.3% of the population – and remember this is 2012 data, it's not even this year that had diabetes. In New York State, we were not immune to the epidemic. About 1.5 million adults, 10.4% of the population, have diabetes. About 971,000 or 7.5% of New Yorkers had prediabetes. And as we go forward, I will explain to you what that means. I think one of the most frightening aspects of this is much of the population do not recognize that they have these disorders.

**M:** That certainly is something to be concerned about and to be aware of. Are there notable differences in diabetes diagnoses across New York State?

**D:** Absolutely. You can see there's a difference as we look across the state in terms of adults who have been diagnosed with diabetes. So there are certainly pockets in areas of the state where the prevalence is higher.

**M:** Now what does this large rate of diabetes mean? In other words, what's the financial importance of the discussion we're having?

**D:** I think that's a good point. It's clearly important to the individual and their families as far as the medical aspects go. But this is also an economic crisis for us. In 2012, \$245 billion was spent on diabetes - 11% of healthcare dollars. Now, \$176 billion were in direct costs. And you might ask, "What's the rest?" And in fact, indirect costs are loss of time from work, disability, premature death. So this is clearly a growing epidemic that's going to affect us economically.

**M:** I think that point that you make about the indirect costs, those are things that we often don't even think about. This is really staggering. Now, can you talk about New York State Medicaid specifically and those costs?

**D:** Absolutely. So, New York State Medicaid is spending about \$10 billion on patients with diabetes. That's the b word, billion. This is 2011 data. Keep in mind the majority of these patients have more than one associated health condition, 60% have two, and 28% have more. So diabetes does not usually occur alone. It usually lives with hypertension, cardiovascular disease and other illnesses.

**M:** And as we see more and more of those co-occurring illnesses, the health costs are going to increase as well.

**D:** Absolutely. Good point.

**M:** We can see there are these enormous costs that are incurred. Can you help us understand what this means for the individual patient?

**D:** Yes. I thought I would tell you about a patient that I have seen in my practice in the past six weeks. This is a 66-year-old woman who has had type 2 diabetes probably diagnosed for 15 to 20 years. She has been with us about six weeks in our practice. She's on what we call MDI, which is multiple daily injections of insulin. She has to take four to five injections of insulin a day to keep her blood sugars where they need to be. And she's not being successful and we're not being successful. Her A1C, which is our average blood sugar, is 12%. That's very high. Associated with that, she has the complications of diabetes – she has eye disease, nerve disease, and cardiovascular disease – and because of that, it's almost impossible for us to effectively treat her.

**M:** That's a really important picture that you paint, in showing what the individual patient looks like and how this becomes a serious situation. If someone continues to progress with the disease and encounter more and more related illnesses, talk about how the cost then escalates for the individual.

**D:** You can see how the cost will escalate when you talk about first the patient presenting by being overweight, then over years they develop obesity. And as we talked about, there's a link between obesity and diabetes, so they develop diabetes. We know the complications of diabetes occur ten to 25 years after diagnosis. And then they deal with the “microvascular complications of diabetes,” which are eye disease, blindness, kidney disease, dialysis, and renal transplantation – which of course is very costly. I want to make the point of cardiovascular disease for two reasons. One [reason is that] in a patient with diabetes who has neuropathy, underlying atherosclerotic heart disease can be silent and they might be unaware. And cardiovascular disease is the silent killer in these patients. I tell my patients with diabetes that it's an equivalent risk factor. What does that mean? That means if you are a patient with diabetes, you have the same risk of having a heart attack as someone who doesn't have diabetes and has already had one heart attack. So this is the killer of our patients with diabetes.

**M:** Wow. That really is kind of a startling piece of information.

**D:** A strong message.

**M:** You have provided us with a good idea and a solid understanding of the enormous costs for both the individual and the bigger picture. Can we take a step back and talk about the prediabetes epidemic and what that means, what does that look like?

**D:** I would love to. This is important. This is why we're having this broadcast today. Before diabetes is prediabetes. This is a huge population in the United States and in New York State. Of particular note is the lack of awareness among clinicians, caregivers and patients about prediabetes. Four and a half (4.5) million adults in New York State have prediabetes but very few know about it. Why is this important? Without changes, many of the patients will progress on to develop diabetes within five to ten years. It's important to know that for many of them, the problems can start during the prediabetes time. By that I mean, eye disease and heart disease.

**M:** So those are starting even before a diabetes diagnosis?

**D:** Absolutely.

**M:** From what you are saying, looking at the numbers of prediabetes and diabetes, they are staggering numbers. It sounds like those folks who are actually diagnosed with diabetes, that's just the tip of the iceberg.

**D:** It absolutely is. When you look below the surface, we see the staggering epidemic of prediabetes.

**M:** How do clinicians identify prediabetes?

**D:** Excellent question. I think this is a very important point. Basically [there are] three ways they can do that; doctors can choose which way is easiest for them and their office. The first way is a plasma glucose which they can obtain at the time of physical exam. The patient has to be fasting. We know normal is less than 100. Diabetes is greater than 126. Prediabetes is in between. So [prediabetes is] between 100 and 126. If they have an oral-glucose-tolerance test where they are given a drink of glucose and then glucoses are measured afterwards, we look at the two-hour after they drank glucose and in fact, if their blood glucose is between 140 and 200, then they have prediabetes. Less than 140 is normal and greater than 200 is diabetes. The other and perhaps easier way is to look at the hemoglobin A1C which is the average glucose. It's considered to be normal if it's less than 5.7, diabetes is greater than 6.5, and prediabetes is in between. [This is] a lot to remember.

**M:** Certainly. Luckily, we have the handouts that folks can download and see their physician for more information. We will talk about how people can get all of this.

**D:** That sounds great.

**M:** Are there specific ways that doctors can diagnose prediabetes that can help predict type 2 diabetes?

**D:** That's a good question. We have to look at the continuum between prediabetes and diabetes. What you can see as you look at the slide is the first thing that develops is insulin resistance. People become resistant to the insulin their body is actually making. Over time, their pancreatic Beta-cells that make insulin can't keep up with this insulin resistance. Insulin levels starts to fall, and when insulin levels start to fall, glucose starts to rise, both at the fasting time and post after mealtime prandial time. This process occurs, perhaps, five to ten years before they actually develop diabetes.

**M:** Interesting. Does understanding these dynamics help doctors to prevent the disease progression? Is there an optimum time for prevention?

**D:** Clearly. What it's giving us is an opportunity. Because if we can make a diagnosis prior to the development of diabetes in the prediabetes time period, we can treat more aggressively, more easily and perhaps delay or stop the progression to type 2 diabetes. This is a huge window of opportunity.

**M:** It's not an automatic sentence?

**D:** Absolutely not.

**M:** Great. What is the standard recommendation now for screening and identifying prediabetes?

**D:** Well, let's start by reviewing again why we do it. We know that type 2 diabetes as we talked about is very serious for the patient. It's very costly. There's an asymptomatic phase which is not benign. Early complications can be developing. And we know that early treatment actually prevents those long-term complications that we talked about.

**M:** Can you talk about the criteria for screening for prediabetes and type 2 diabetes in individuals who are asymptomatic?

**D:** Okay. We have to screen because patients are asymptomatic. We want to look at risk factors – who can we pick to screen? Risk factors are physical inactivity, whether you have a first degree parent or

sibling with type 2 diabetes. If you are from a race or ethnicity [that is disproportionately impacted] – and we reviewed what those are. If you had diabetes during your pregnancy, that puts you at a huge risk. If you have hypertension, defined as a blood pressure greater than 140 over 90, all of those patients should be screened. Other risk factors include HDL less than 35, that's a cholesterol factor. A1C greater than 5.7, and other clinical conditions that have been associated with insulin resistance such as polycystic ovarian disease, in women. If patients have a history of cardiovascular disease, they are of significant risk. Most people have one risk factor.

**M:** It sounds like it, that's a fairly long list of potential risk factors. Can you explain the provider decision making process for screening a little bit more?

**D:** Absolutely. Every adult who has a BMI greater than 25 should be screened if they have an additional risk factor. I'd like to make the point that if you have a patient who is Asian American that has been changed to a BMI of 23. If they have no risk factors, then the latest they should be screened is age 45. We have to look at it like a colonoscopy. We screen at 50. No risk factors screen at 45. If normal results, then repeat screening on a regular basis. You are going to use your clinical judgment to determine how quickly do I need to rescreen this person? And if they have prediabetes, you need to intervene and test on a regular basis.

**M:** Can you talk about the impact of diabetes on pregnant women?

**D:** Remember gestational diabetes, which is defined as diabetes that develops during a pregnancy, occurs in 10% to 11% of women. It occurs because the placenta makes a growth factor for the fetus that goes to the mom and affects her glucose control. It's actually counter-regulatory, or opposite to, insulin. About 10% of women cannot overcome this and they develop glucose intolerance during pregnancy, which is universally screened for. Because the pregnancy is a stress factor, when the pregnancy is completed, the gestational diabetes goes away. As they age, as they gain weight, other stress factors occur and they are at huge risk for developing diabetes. It's a very select population we need to monitor.

**M:** Having gestational diabetes puts you at greater risk for diabetes later in life?

**D:** Yeah, and the statistics are 2.6% to almost 70%. Some of that is based on what the glucoses were – [as well as] what the race, ethnicity, and family history of diabetes are – all those play a role.

**M:** That's interesting. I had no idea the two were related. Can you describe the tests that are used to screen for diabetes?

**D:** Yeah. There are several ways to screen – we kind of went over them. The three that we can use is fasting glucose, which is perhaps the easiest in the office at the time of the initial exam. The two-hour glucose tolerance is really the gold standard. If there's any question, we want to do that test. But it's tough for the patient, they have to be fasting, they have to drink a glucose load and they have to stay in the lab or office for two hours. It's difficult. The other is a hemoglobin A1C. The benefit of that is that it doesn't have to be done after fasting; it can be done at any time.

**M:** Are there -- is there more information about the various types of tests and what they reveal?

**D:** Okay. We reviewed it before. This is a quick cheat sheet in terms of how you diagnose normal, prediabetes and diabetes in terms of a fasting glucose, the post challenge glucose, which is only the two-hour post number, and the A1C. You can see them there.

**M:** Great. Now, a question that I think would come to mind for a lot of people --

**D:** I know what you are going to ask.

**M:** Is the cost. Are these tests covered by insurance? Do people get reimbursed because healthcare costs are a barrier for a lot of people? If we're trying to really impact and get people aware of this, talk to us about the insurance factor.

**D:** Think this has been an issue for clinicians. They have been hesitant to do these tests because they don't know how to get paid for them. They are afraid the patient will have a heavy bill associated with them. We do have codes. They have ICD-9 codes. The one used is 790.21. You can use that. I have happy news. As the new ICD-10 comes out later this year, there's actually going to be a code labeled prediabetes. Even the coding people are understanding necessity of doing this.

**M:** Excellent. That sounds like a great step in the right direction.

**D:** Absolutely.

**M:** So we can talk about all of the costs and the staggering burden. But I think what we want to get to is identifying the best treatments for prediabetes, correct?

**D:** Well, clearly, there are two. One is lifestyle intervention, recommended to lose five to seven percent of the body weight, which would be about 10-14lbs in a 200 lbs person, and at least 150 minutes a week of physical activity. The second thing we can do is use medications and we'll talk about that as we move forward.

**M:** Has there been research on the different strategies whether we talk about losing weight and increasing activity versus doing a medical intervention? Is there research that tells us the results of those two different types of approaches?

**D:** Absolutely. There have been multiple studies. They are prevention trials. Can we prevent diabetes? There are prevention programs in this country and they found that they reduced the progression to type 2 diabetes by 58%, and 71% in those over age 60. Keep in mind that if you look at those over 65, then that's 26% or 27% of the population. That's an important group. I think the important information is that this reduction was consistent across all ethnic groups. It didn't matter if you were an African-American or what your ethnic background was, you had the same benefit. Blood pressure, lipids, the co-morbidity improved. And I think the really important factor is when they looked further on, ten years down the line after this research was done, the benefit continued.

**M:** It wasn't the sort of thing that we see an improvement and then the gains are lost over time.

**D:** That's so important, I think. Absolutely.

**M:** Is all of the research that's been done focused on clinical providers?

**D:** No. Because we find that in some of our populations, those perhaps who are economically challenged, they either don't want to go see their physician, they don't have access to a clinic, they're afraid of a hospital setting or a physician. [Or perhaps someone doesn't] feel comfortable or can't get transportation. So they have a lot of barriers. In fact, lay workers, community workers and community centers can be just as effectively trained to deliver this information and program as clinicians.

**M:** That's really excellent to hear. Can you tell me more about the Diabetes Prevention Programs?

**D:** The Diabetes Prevention Programs are these group programs, as we mentioned, that teach patients, actually, how to make lifestyle changes. They offer teaching, support. They are group classes. They occur over a 16-week period. For example classes might include how to measure a portion, how to read a label, how to break down barriers. What's stopping you from eating correctly? Do you not have access to healthy food, only access to processed food? Do you find it difficult to exercise? Do you have trouble with childcare? If you slip off, how do you get back on track? You can see how that would be really valuable for the person attending.

**M:** Absolutely. I think, even in conversations with people in my network who aren't at risk, people tend to be unaware of what is a serving size and what does that look like. We go to restaurants and the portions we are given -- that's enough for three meals.

**D:** You are right.



**M:** People aren't aware of that, so providing that education is critical.

**D:** Right. I think it's really important.

**M:** It looks like the CDC has recognized many programs throughout the country, but New York State is sort of in the front of things in terms of the programming that we're offering. Can you talk about other ways that New York State continues to build this infrastructure that makes our state so strong in diabetes prevention?

**D:** Absolutely. We should be very, very proud of New York State and what it has accomplished. In addition the state's public health partners provide information for medical providers – so, linking the healthcare system, with the community program delivery. So what that means is they're going to provide information to clinics, providers and hospitals and show them where their patients can go to access these programs.

**M:** Excellent. Thank you. Now that we have heard about all the opportunities to prevent diabetes and diagnose prediabetes, let's take this opportunity to hear from Lisa Ferretti, the executive director of QTAC, an organization that works to support health promotion and disease prevention programs.

---Inserted Clip---

**Lisa Ferretti:** *The national Diabetes Prevention Program is an evidence-based approach to helping people reduce their risk of developing type 2 diabetes. It was developed through a National Institute of Health Study and the data from the study – this is held over many, many years since its longitudinal data – has shown that people who reduce their weight by a modest amount by taking this program, and increase physical activity to 150 minutes per week on average, were able to get a risk reduction of somewhere between 58% and 71%. It's a program that's promoted by the Centers for Disease Control and Prevention and has national support network around the country to help people to deliver the program and to target people who could benefit from it. In New York State we have multiple delivery sites for the program.*

*The Diabetes Prevention Program right now, geographically, is spread across about 50% of the state. That means that 50% of the population of the state can access the program. It's actually – there are coaches in more sites geographically, but there's less population in some places. We're covering about 50% of the state right now. We can always build and are continuing to build that infrastructure. The program is delivered in multiple types of sites. It can be delivered in healthcare settings, in community-based settings. If you are a healthcare provider or a health office or a healthcare clinic and you are interested in finding ways for your patients to participate in a national Diabetes Prevention Program, the best thing to do if you are looking for programs is to contact the Y and find out if they are participating in the intervention. If you want alternate places to take the class, come to our website at QTAC New York and find a workshop, and type in the zip code of the participant – the patient you are looking to be a participant – and find out if there's a class happening near you. If there's not, you can type in information*

*into that system that will push information to us here at QTAC. We can be in touch with you and with coaches in your community and try to help you to generate a workshop in your local community. We are interested in how the programs are being disseminated across the state. So, one of the things that we do here is to collect data about the program – Where they are happening, who the coaches are, what type of organization they are being delivered in, if people are charging a fee or not, if the program is reimbursed or not and other information about the participants, like their eligibility -- what made them eligible for the program, why they came, basic information about them demographically. And then also, we collect weekly session data which helps us to understand if the participants are on track for losing weight and increasing their physical activity. All the data that we collect, or that our coaches collect on site, is entered into a secure online portal that we call Compass. It keeps track of all of our participants and all of our classes happening around the state for organizations that are linked with us. We have about 50 organizations around the state. They probably represent about 200-300 different delivery sites, potentially, for people to take the class. All that data is held securely in the HIPAA-compliant server. We are also working to build into that a feature that will allow physicians to make direct referrals into the program and to get feedback about their patients from the program either into the electronic health record or even just through an e-fax. The doctors know when they refer people to the program that they are taking the class and they can see without having to wait until the next appointment whether or not folks are making progress in the class.*

*When we look across the board at participants the most likely to complete the program, to stick it out for the whole year and achieve those goals, there is one really striking thing that we see. That is that for participants who have a physician blood-based diagnosis of prediabetes, we see higher rates of completion of the program than we do for people who screen in based on risk factors. That doesn't mean people who screen in because they are at high risk because of obesity or family history or other things, that they don't do well simply because they are at high risk and don't have a diagnosis. But I think it does tell us something about the impact healthcare providers can have on helping people to either prevent or delay type 2 diabetes by making those diagnoses and referring participants. QTAC New York is standing ready to help healthcare providers who have patients who are diagnosed with prediabetes. We want to help those folks to find a class. We know that in past many people who get diagnosed and apart from counseling about what they maybe should do, there wasn't some place to send people to help them to make the changes they needed to reduce their risk. We have tried to develop this in a way that would help healthcare providers to access the program for their participants but that could kind of close the link between the clinical community-linkage. We know what happens in healthcare providers' offices are critical. But we also know that patients make most of their decisions outside of the healthcare office. That's why this community piece and these community-based programs are so critical to really changing the trajectory for many people who are at high risk of developing type 2 diabetes.*

**---Inserted Clip---**

**M:** What an excellent program. I'm glad we got to share that.

**D:** Exciting. Very exciting.

**M:** With all of that support, you can talk about some of the challenges that providers face in pharmacologic treatments in diabetes?

**D:** I think there are quite a few challenges. Number one, I have to make this point, none are FDA approved for use of treatment on prediabetes. All the drugs are used in treatment of diabetes but not approved by the FDA for use in prediabetes. Many physicians and caregivers are appropriately wary of using them. They're expensive. They may not be covered by insurance companies because they don't carry a diabetes diagnosis. And every medication has side effects. So we have to make sure that the benefits outweigh the risks.

**M:** Can you talk about the specific pharmacologic treatments?

**D:** Sure. There have been four or five studies that have been done. I think the biggest is the Da Qing study done in China where they actually screened, only in China, 110,000 people, and they looked at those people who had prediabetes and then they used lifestyle intervention, exercise or diet and they followed them along. In fact, they found they could significantly reduce their risk of developing diabetes in this population. The other thing that I think is interesting about this study is it also showed a decrease in eye disease from diabetes. The patients, who did well, were at less risk of developing diabetic retinopathy even while they had prediabetes or if they developed diabetes – clearly an outcome benefit. That also – they used a drug called *Metformin*, which is probably the most common drug used to treat diabetes. It has GI (gastro-intestinal) side effects, causes nausea, sometimes diarrhea, but otherwise, easy to use. *Acarbose* has been used in stopping non-insulin dependent diabetes. *Acarbose* is tough to take because it causes a lot of gastric side effects – gas, and patients are hesitant about that. But it was also effective. *Avandia* is a drug that patients take once a day, not used as commonly now, but that drug was very effective in decreasing progression to diabetes. And then look at weight loss drugs, so *Xenical*, *Alli* – people can buy some over-the-counter—and with weight loss they found there was a decrease in progression to diabetes.

**M:** Excellent. Now, can you talk about the research that has shown the treatments to be effective?

**D:** Right. All the drugs have been found to be effective. I would like to make the point of one. See the *Pioglitazone* drug there, in the study done called *Act Now*, they actually found that in patients who had prediabetes, to slow the rate of progression to diabetes, it [pioglitazone] slowed it by over 80%. That sounds like, “Wow everybody should be on that drug.” Maybe that's true. But in fact, there are multiple side effects associated with that drug. A lot of clinicians are fearful about using it. It's always risk versus benefit.

**M:** That is, it's a tough --

**D:** It's a tough road.

**M:** I would imagine varies by the individual patient and how great the risk is and what are the potential ...

**D:** In all honesty, many primary care physicians may not have the time or the ability to research it and feel comfortable with using these drugs when it's not FDA approved. I can understand that.

**M:** Sure, sure. Now, certainly there are promising results, though. That's a good start for us.

**D:** Right.

**M:** What can healthcare providers do given the information that you have shared?

**D:** Absolutely screen. If we don't screen, we won't make the diagnosis. We have to name this. We have to name it as prediabetes. It's not a little bit of diabetes. That's like being a little bit pregnant. It's a real disease. We have to name it. Once we name it, we have to be aggressive about treating. One of the things they found is – we talked about the A1C between 5.7 and 6.4. Guess what? It makes a difference if you get it to 6.2 or 5.7 or less than 5.7. That difference is the higher the A1C, the harder to treat and the more likely they will progress on to diabetes. So you want to be aggressive and aim for 5.7, which is different than the American Diabetes Association guidelines which many clinicians are aware of. I think you really have to sit down with your patient and be a messenger. Patients are asymptomatic. They don't feel anything; they don't want to treat something they don't feel. So we really have to be a messenger about the power of prevention. I think it's a very important to tell your patients that you are referring them to a National Diabetes Prevention Program. You have to tell them, "This is important to you. You must do this. This will impact your life."

**M:** I think one other thing, just kind of piggybacking off what you said is, people don't want to treat something if they are asymptomatic. People don't want to treat something that they don't recognize they are suffering from. I think you have talked about how the diet change and the exercise can be effective in treating. I think that would be an important message because you are not necessarily saying, you have to take this drug. I think some people are really hesitant to take a medication. I don't want to take another pill. There are other options as well.

**D:** There are other options but I think the value of the programs is, it's difficult for people without support to change their lifestyle. Everyone has been barriers that must be broken down. These programs really provide help in breaking down the barriers, no matter their ethnic background, whether economically challenged or not, where community centers are where they go. That's important to note.

Clinicians, providers don't have the infrastructure in their office to provide information to patients. So it kind of takes the heat off us that we can send our patients to these programs.

**M:** Sure. Certain actions can really take off when there is an established process in the office to diagnose patients who might have prediabetes. Can you talk about the 'SAFE process' and what that stands for and what it looks like?

**D:** SAFE, I think, is a valuable acronym in medical school. We have so many things to remember. We remember them based on things such as SAFE. SAFE means we have to screen. S is Screen, we must screen and we talked about the risk factors and who we screen. Then once we screen, we have to sit down with the patient. We have to talk to them. We have to assess them. What are their other co-morbidities – do hypertension? Hyperlipidemia? Do they have underlying cardiovascular disease? And I like to make that point because if you think your patient has silent ischemia or underlying cardiovascular disease, it would not be a good idea to send them to exercise 150 minutes a week. You might consider having to assess them, sending them to a cardiologist for a screen. And then you have to advise them. Advise them to go to a program. You may consider medication. Then you have to follow-up. That's F. And 'E' is to evaluate the progress. Evaluating the progress might be getting reports back from the Diabetes Prevention Program – seeing what they have accomplished, checking another blood work, seeing are they doing self-monitoring of glucose? Have they done a hemoglobin A1C? How are they doing? Are they accomplishing it? I think when you follow on this, what you are really communicating to the patient is, "hey, this is important. This is important to you. And I am tied in to the benefit to you."

**M:** For providers – this is a new area for them and maybe they have not addressed it before – how should providers communicate with patients about prediabetes?

**D:** First, they have to name it as we talked about. They have to say, there is a condition called prediabetes. It's a condition. We have to be aware of it. We have to talk to patients about the risk. We know that patients with prediabetes, 9% of them may be developing eye disease. Others are developing cardiovascular disease or are at risk for heart attack and stroke. Patients have to understand this is not benign. There are risks associated with it. We have to tell them what they can do. How can they prevent this? I always do the good news bad news. The bad news is you have this condition, prediabetes. The good news is we have a lot of opportunity for us to stop you from going on to developing diabetes. That's important for clinicians. If we don't have a diagnosis, we don't intervene and we don't follow up. So, we have a procedure.

**M:** Let's look at what a patient interaction in your practice might look like in having this conversation.

---Inserted Clip---

*D: Kim, it's good to see you. Thanks for coming in today. I wanted to talk to you about some of the blood tests that we got back. Do you remember I did fasting blood work on you and a hemoglobin A1C because*

*you had that family history of diabetes and that gestational diabetes during your pregnancies? Well I got the results back, and the results show you have prediabetes.*

**Kim:** *What is prediabetes?*

**D:** *Prediabetes is actually the step before diabetes. What that means is your blood sugars are not completely normal but they're not high enough to reach the criteria for diabetes. They are right in between. What that means is it gives us an opportunity to intervene and stop them from going into the diabetes range.*

**K:** *How can I stop getting diabetes?*

**D:** *What we call lifestyle intervention and we're really lucky. We have a program in New York State called the Diabetes Prevention Program. Actually, there's one locally at your community center that you can go to. This program teaches you how to eat. They try to teach you and help you lose 5% to 7% of your body weight. They help you exercise and your goal is to exercise 150 minutes a week. And what we found is if you do these two things, it actually lowers your blood sugar and over years your risk of developing going on to type 2 diabetes is much less. I have a brochure for you to look at, it describes the program. I strongly encourage you to go. I think it will make a huge difference in your life. In fact, I have taken the liberty of signing you up, and I have some information for you that you can bring to them. It starts in another couple of weeks. What do you think? Any questions?*

**K:** *That sounds great. It sounds like just what I need.*

**D:** *I think so, too. I think it will make a difference in your life. In fact, I'm going to have you follow up in a month. I want to see how you are doing.*

**K:** *Okay. I will be back.*

**D:** *Thank you.*

**---Inserted Clip---**

**M:** *I think that really is an excellent example for other providers to see how you have these conversations and certainly the part at the end where you follow up with the person. You are not just sending them out and whatever happens will happen. [It is important for them] to really take it seriously. I think that's a great message to send. Let's re-visit the patient - that theoretical patient, "AR," you talked about earlier in the program. If you had screened and identified the prediabetes 20 years earlier, what would the outcome look like and how would that be different than what you are seeing?*

**D:** *I think about that all the time. I think about if I had seen her at a younger woman 20 years ago, what action could we have been taken? We would keep her hemoglobin A1C much lower – A1C at 6.2, perhaps less than 5.7. If we were actually lucky enough to diagnose her during the prediabetes time period, she wouldn't have any of the complications. She wouldn't have retinopathy requiring laser therapy, painful nerve disease, underlying cardiac disease, kidney disease. She would be 30 pounds*

lighter which is healthier in every aspect of her life. She would enjoy life more. And so I think she would have a greatly improved quality of life. We have to think from an economic perspective. From an economic perspective, her care and treatment would be much, much less.

**M:** Sure. Sure. That's a very drastically different picture than what we're actually seeing.

**D:** We have to be real. That's reality.

**M:** New York State has taken great steps to address prediabetes, including developing a website and a campaign entitled *2 Million Aware by 2017*. Can you tell us more about those initiatives?

**D:** Actually, this broadcast is the beginning of an exciting New York State campaign called *2 Million Aware by 2017*. This is an effort to increase the number of New York State adults who are aware of prediabetes diagnosis and to increase participation in Diabetes Prevention Programs. An actual prediabetes tool kit containing treatment, guidelines, and diabetes prevention tools will be made available in April of this year. Healthcare providers can be leaders in the effort to meet *2 Million Aware by 2017*. The tool kits will be distributed to healthcare providers throughout the state through academic detailing visits, so explaining it, by public health partners and local health departments and community-based organizations. This is a wonderful program that is progressing.

**M:** Excellent. As you said, we want to make people aware, because if we're not aware, we're not screening. If we're not screening, we don't identify and things progress.

**D:** Knowing it is the first step.

**M:** Absolutely. As we prepare to take questions, we have a number of questions from the audience. I want to share with our viewers some information on how to ask questions with the New York State Department of Health and the QTAC program. The information is on your screen and available in the handout. Let's take a look here. We have a number of questions that have come in from our audience. The first one says, "we do serum-level glucose testing. Can you elaborate on the plasma fasting glucose?" And this is from Rhianna, who is an RN in Morton County Health Department.

**D:** Easy. A fasting plasma glucose is probably obtained at the time of a physical. If the fasting glucose is less than 100, the patient has no risks. If they are between 100 and 126, they have prediabetes. You can diagnose that way. If it's 126 or above, then they have diabetes. I want to make a point about that. That is, remember we looked at the continuum. You can't look at a glucose of 99 fasting and say that this patient is off the hook. A glucose level at 99 would make me think, this patient is at risk. Do I need to intervene now? Do I need to talk to them about it? Maybe make lifestyle changes, see if they are appropriate for a Diabetes Prevention Program. Don't use hard and fast cutoffs. Look at your patient.

**M:** That makes sense. Now we have another one. What can you say about the drug *Invokana*? The patient has been diagnosed with diabetes and high blood pressure.

**D:** So, *Invokana* is what we call a *sgl t-2* inhibitor. It works on the kidney to cause you to excrete more glucose in the urine. It's effective, many studies done in diabetes but no data in the prediabetes population.

**M:** Okay. We have very good question here, "do you know of an electronic medical record template example that helps screen or flag for prediabetes to assist providers?"

**D:** A great question. Clearly we have to figure out a way to make it routine in our offices, particularly primary care doctors who may have ten minutes to see a patient and evaluate them. Right now, you can screen looking at blood work. An electronic medical record, the blood work hemoglobin A1C, fasting glucose, is usually there and can be captured and give you a list of people who are within that prediabetes area. I think one of the things that we have to develop are screening questionnaires. Make a questionnaire. Perhaps have it in the electronic medical record. It doesn't have to be done by the physician; it can be done by your medical assistant, nurse. It should be intake. What's your ethnicity? Do you have a family history? What's your BMI? If you know it, if not that can be measured in the office. That's another thing you can screen. BMI goes into electronic medical record. You can pull all those patients who have a BMI greater than 25 and look at risk factors. I think as we progress forward and prediabetes becomes more recognized, we will develop templates. I think an important point is Diabetes Prevention Program is trying to find ways and working on ways so they can send us as clinicians information back on our patients that we send to them through the electronic medical record. So it gives us a way to follow-up with the patient.

**M:** Great. Is the national Diabetes Prevention Program also available in other languages?

**D:** Yes there are – it's available in Spanish. Many of the local community organizations have people who speak Spanish. It's available right now in both English and in Spanish. That's important. I think that the other point to make is that there are not only language barriers, but educational barriers. A lot of the material has been made up so people, who perhaps have not had as much education, maybe haven't even had a high school education, can understand the material and not feel fearful of looking stupid.

**M:** That's great. That's really important. We have another question, "If someone is not overweight, and already eats healthy, and exercises 150 minutes per week, but has a fasting blood glucose of around 106 for a couple of years, age 57, what do you recommend? Anything [to recommend], other than weight loss?" And that's from Broome County.

**D:** Okay. Clearly, I would have an assessment by a CDE (Certified Diabetes Educator) who specializes in nutrition. Because even though they eat in a healthy way, by their perception, it would be important to have an assessment and see if that was really true. Once that was done, if they did clarify that



everything was as it should, then that actually – that patient might be a candidate to be started on medication to stop progression, because they have already done the lifestyle things. If their primary care doctor or provider felt uncomfortable, that would be a reason for referral to an endocrinologist.

**M:** One provider recommends our DPP program to her patients, but she says the 16 weekly sessions is a barrier. How do you recommend that providers address, that and insist the patients attend? We tell people committing to the Diabetes Prevention Program is the equivalent to one day in their lives, just 24 hours. [Do you have] any suggestions on how to communicate with at-risk people to convince them to attend?

**D:** I think you have to be direct. You have to say, you are at risk. If you don't do this, this is what will happen. Then you break down their barriers. Why is it too hard to do 16 weeks? What's getting in your way? Is it a problem with work? Or is if they are unemployed, a problem with transportation? We find so much in prediabetes that we actually have to sit and actually talk to the patient, and figure out what's holding them back from achieving their goals. Sometimes it's fear if they don't talk about it, then they don't have to face it.

**M:** All right. We have got a few more here, “Can you have a Diabetes Prevention Program as part of a health system?”

**D:** I'm employed by St. Peter's Health Partners. We have a program at Memorial Hospital that's associated with my endocrinology practice. I think that's a very important thing for a health program to have. We have one locally, here.

**M:** Great. They are flying in. I can't keep up.

**D:** That's okay. I'm glad!

**M:** “How can county health departments be helpful in moving the dial in diabetes prevention?”

**D:** That's an excellent question. I think as a clinician, I'm looking at it with a clinician hat on; we need to be made aware. We need to be made aware of the information, the tool kits delivered. And then we need to know where the programs are, how we access them for our patients, what are the forms that we have to fill out? For any doctor, it's about time. How can this be done effectively, quickly, make us aware, show us what we have to do? Perhaps in an office or a clinic, find what we call a ‘champion’, someone who will be responsible for that. It's off the doctor's shoulders in terms of the scheduling and follow-up.

**M:** Excellent. Let's see. Make sure I'm getting through. We have got that one. This one is a little bit different. “In public schools across the United States, there have been policies and laws implemented to ensure that students have more balanced and healthy diets.” That's something we have talked about on

prior shows. "Have you done research or seen statistics that show federal meal plans in schools have a positive or negative affect on diabetes or obesity in adolescents?" I know you are not an epidemiologist but maybe you can speak generally.

**D:** I think speaking about kids is important. I don't have that data. I suspect it's there but not being an epidemiologist, I haven't read it. The important thing to note is there are guidelines for children. Part of what's important for kids are these federally mandated meal programs as well as activity. You need to increase activity that kids undergo during the day while at school. When they come home, most of them just don't do that. There are criteria set up by the American Diabetes Association, the American Association of Pediatrics to screen for prediabetes. That's kids who are age 10 who are overweight who have a family history of diabetes. The screening recommendation is to do a hemoglobin a1c. If it's between 5.7 and 6.4, they are considering to have prediabetes and they need to move forward with further education.

**M:** I think that is a very important point to make. Children starting young and identifying early, I think probably we can't overstate the importance of that.

**D:** Absolutely true.

**M:** We have covered a tremendous amount of information today. And I think you have done a great job of answering questions and starting to really begin this conversation. I think one of the things that you said that to me really stands out is you can't have a touch of diabetes. Prediabetes is an actual condition. I think the conversation today really started to paint that picture and make that a more concrete and tangible diagnosis for people.

**D:** I thank you for having me. I think it's an important topic. Perhaps the most important topic we have right now.

**M:** Excellent.

**D:** Thank you.

**M:** Thank you. And thank you very much for joining us today. Please remember to fill out your evaluations online. Your feedback is always helpful to the development of our programs and continuing education credits are available. To obtain nursing continuing education hours, CME and CHES credits, learners must visit [www.phlive.org](http://www.phlive.org) and complete an evaluation and the post-test for today's offering. Additional information on upcoming webcasts can also be found on our Facebook page. Don't forget do like us on Facebook, to stay up to date. This webcast will be available on demand on our website within two weeks of today's show. Join us for our next webcast on February 19, Confronting Health Disparities: Obesity and Prevention in African-American Communities. I am Rachel Breidster, and thank you for joining us on Public Health Live.