



Indian Health Service

# Division of Diabetes Treatment and Prevention

## Advancements in Diabetes Seminar Food Insecurity and Diabetes

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Brenda Broussard:

Hi everyone. I am Brenda Broussard. I'm a Registered Dietitian, Certified Diabetes Educator and a Hill Group consultant working with the Indian Health Service Division of Diabetes. As Jan said, I've been working in Indian health and diabetes at the Tribal, Area and National levels for over 35 years. I'm the daughter of a mother who died of complications of type 2 diabetes too young, and a sister of siblings with diabetes.

I'd like to thank Dr. Ann Bullock, the Director of the Indian Health Service National Diabetes Program for suggesting today's topic, food insecurity and diabetes. It's a complex issue and I'm going to show you some of the research that makes the connection and suggest some actions you can take, maybe you're already taking in your practice. Indeed, food matters.

Now, I was fortunate growing up in South Louisiana on a dairy farm. We had plenty of milk, chickens, eggs, fruits and vegetables. We had pecan and fruit orchards and two to three vegetable gardens going year round. We hunted and fished, so we had some wild game and seafood.

Have you ever experienced hunger and food insecurity? Well, ironically it wasn't until I was in graduate school studying public health nutrition that I experienced it. I came face to face with poverty, living mostly on red beans and rice, French bread, beignets and instant coffee in downtown New Orleans. Still, I'm kind of embarrassed to say as a nutritionist and a diabetes educator, I can't say I ever asked clients about food insecurity. Recently, I've been working here in Albuquerque at Presbyterian Family Practice and I know I'd mostly asked patients about their medication insecurity, if you will, because they have to pay out of pocket for many of their meds. So you'd think because I experienced poverty, food insecurity would be on my radar and I would ask about it because these are realities our clients do face.

Well, here's a family enjoying a meal in Tumwater, Washington. Now, this is what we hope for all our families. This table is set with abundant, healthy appetizing food and the family is seated together in conversation around the table.



This is an image -- it's kind of blurry, from the cover of the book 'Always Getting Ready; Yup'ik Eskimo Subsistence in Southwest Alaska'. Recently, my friend and diabetes consultant, Dr. Susan Gilliland travelled to Nome and St. Paul Island, Alaska. She saw a poster at the grocery store in Nome, and on the poster was a prayer by Agnes Kelly Bostrom about subsistence living and here is what it said, "All during the year, we're getting ready -- getting ready for fishing, for berry picking, for potlatches, getting ready for winter. We're always getting ready to go somewhere to get food, and because we are spiritual, ya know, we are always getting ready for the next life."

Just last month, I heard this story on NPR. Sandra Gologergen and Wilfred Miklahook stand with the community of Savoonga, Alaska in the background. Despite what it looks like, lots of snow, residents have been struggling with warmer than usual temperatures, which has led to challenging conditions for subsistence hunting. Savoonga is a small community of about 650 residents that sits on the northern edge of St. Lawrence Island, 164 miles west of Nome in the Bering Sea. And you can see it here named on the Alaska map. It's among the first US communities to experience the effects of climate change firsthand.

Now, there was a time when Ms. Gologergen's freezer never ran out. It was packed with traditional Inuit foods like whale, walrus, seal and fish and her freezer has been an essential lifeline, ensuring her husband, three kids and grandson make it through the long harsh winters and she said, "Then that changed, warmer winters and changing conditions meant that the hunters were unable to bag the Pacific walrus that the residents traditionally relied on as a key food source." I quote her again, "The animals are there, but the ice in the winter conditions that the hunters need to harvest the animals, that's changed and I'm not the only one whose freezer has run out."

Warmer winters, early springs, a shift in typical storm patterns have hampered the ability of Alaska Native families to harvest the subsistence food that they've relied on for more than a millennium.

Now, in places like Savoonga, suddenly you've got an 80% reduction in the amount of food you're used to having. There aren't a lot of jobs on these islands and to say to people, "Well, now you have to go to the grocery store." Well, it's just out of reach for a lot of these people. I asked Dr. Gilliland to check out the foods available on another island that was available at the Aleut community store in the Pribilof Islands in the Bering Sea, Alaska, during her recent visit.

Now, just a couple of examples. Yes, there's a whole lot more fruits and vegetables that you can see here on the left hand side. You've got green, Granny Smith apples, but they're at \$5.99 a pound, and I compared that to the prices in the lower 48 states and it's at a \$1.17 a pound. Now, in the middle section of the slide, you'll see price for a case of Rockstar energy drinks at \$84. It's not something we recommend that people buy, but it takes up a lot of shelf space. Well, none of the important traditional protein sources like seal and walrus are available at the community store. In fact, they have to send ships from Nome over with lots of fish to that small community of Savoonga because of the dwindling ability to go get those important subsistence foods.

Well, as diabetes clinicians and educators, we work hard to provide the best care for our patients. Now, here's a diabetes treatment algorithm published in the American Diabetes Association Standards of Care with the ever growing number of medications to treat diabetes. In tiny, tiny print in the turquoise section way up here at the top is the therapeutic lifestyle section, healthy eating, weight control, increased physical activity and diabetes education.

Well, everything you eat has an effect on your blood sugar. We share these messages with patients, like eat regular meals, select healthy foods in portion sizes that will help to manage your blood sugar. Well, that's a tall order for anyone with diabetes, but it's even harder for those who don't have access to enough food.

Now, many of us are working with the Indian Health Service Division of Diabetes to develop tip sheets for diabetes educators to use with people with diabetes. Here's one you should already have, "My Native Plate." It provides a visual guide to help your clients and patients eat balanced meals of reasonable portion sizes. There's also a tip sheet for educators using this tool and it addresses food insecurity in diabetes, which I'll share more about later on in the presentation.

Food security as defined by USDA means access by all people at all times to enough food for an active healthy life. Ten years ago, USDA introduced a new language to describe the ranges of severity of food insecurity, and you see those there. Low food security is defined as reports of reduced quality, variety, or desirability of diet, and very low food security means reports of multiple indications of disruptive eating patterns and reduced food intake.

Here is 2014 data from USDA Economic Research Service. Most US households with children, shown in red, are food secure. That means they have consistent, dependable access to adequate food. However, 19.2% with children were food insecure at times during the year, and in some of the households children as well as adults were food insecure.

Now, hunger hurts everyone, but it's especially devastating in childhood because hunger deprives kids of more than just food. On empty stomachs, kids don't have the energy to focus, engage, learn and grow. American-Indian and Alaska Native children have about twice the levels of food insecurity, obesity and type 2 diabetes relative to the averages of US children of similar ages, and this statement is from the 2012 Report to Congress addressing child hunger in Indian Country prepared by Mathematica Policy Research for USDA, and it's available online. As Jan said at the beginning of the presentation, you have access to all these slides, you can make handouts and then you can copy these links and get the reports for yourself. I encourage you to do so.

In Indian Country, access to food can be a challenge. Many reservations have significant food deserts, which are defined as low income communities without ready access to healthy and affordable food. Tribal area individuals and households are more likely to experience much lower levels of access to healthful affordable foods than most Americans, 76.8% of low income individuals in Tribal areas were more than a mile from a supermarket compared to 36.4% of all Americans, and the greatest disparity between national and Tribal Areas was among households without a vehicle. So as a result, many rely more on small grocery stores, convenience stores and even fast food outlets as their primary food sources.

Now, here's a visual image, if you will. It shows the locations of food deserts and Indian reservations in the contiguous US. Many reservations have significant food deserts shown in orange, which are defined as low income communities without ready access to healthy and affordable food. The reservation borders are shown in teal and the overlap of the food deserts and the reservation borders are shown in brown, and as you can see these are like Navajo Country, four corners area of Utah, Colorado, Arizona and New Mexico just kind of pops out. You can see from this image that food access is a major problem in American Indian communities, limiting people's ability to access affordable, nutritious food because they live far away from a large grocery store and don't have easy access to transportation.

Now, here's one study of food insecurity among American Indian families with children. Dr. Katherine Bauer and colleagues found the prevalence of almost 40%, that's four out of every ten families with kindergarten-aged children in Pine Ridge Indian Reservation shown here in green on the South Dakota map. The families were participating in the Bright Future Study reported experiencing food insecurity.

When I think about food insecurity, my first thought is well getting enough food. Well, what's vital for health, especially diabetes management is not just food quantity, but food quality, nutritional quality. In a recent viewpoint article in JAMA, Doctors David Ludwig, Susan Blumenthal, and Walter Willett wrote,

“The challenge for low-income families in today’s modern food environment is not obtaining enough food, but rather having dependable access to high-quality food.”

Think about your own community. Is this true for your patients? Efforts to encourage our patients to improve their diets and to eat more nutritious food presume that a wide variety of these foods are accessible to everyone. But for some, access to affordable and nutritious foods may be limited. So, this has implications for the guidance we give to our patients, encouraging them to eat a healthful diet for diabetes. Even some simple messages like eat more vegetables, more lean meats and whole grains, and especially less pasta, less potatoes and bread.

Nutrition across the life course is now recognized as an important influence on adult health and chronic disease risks. For diabetes risk, it matters what happens. What happens to us as adults, as children, in the womb, to our parents and to our grandparents. This slide is a thumbnail sketch from Dr. Ann Bullock’s web-based training, ‘The Effects of Early Life Experience on Diabetes Risk’, and here is what she said, “It matters for diabetes risk, what happens to us as adults, not only our diet and exercise choices, but also stress and trauma as well as to us as children, to us in the womb, to our parents,” and I have to say it’s like frightening to hear even to our grandparents; and indeed yes, our diet and exercise choices matter, but we have to remember that many people have access only to food with poor nutritional quality even if there’s plenty of calories.

We talk about obesity as being over nutrition, but in fact it’s really over-caloried. Not only is food insecurity associated with type 2 diabetes, but it’s also associated, and I’m not going to show you all those studies, but with cardiovascular disease, impaired bone and dental health, obesity and depression.

Now, paralleling Dr. Bullock’s slide, Dr. Barbara Laraia presented this conceptual framework at the 2012 Experimental Biology Meeting. There’s evidence that supports the importance of studying the impact of household food insecurity on health outcomes using a framework of, some of these moderators, life course stage and stress along with genetic factors and the food environment, it’s shown in this model. This model proposes five conditions under which household food insecurity may lead to the development of metabolic syndrome, type 2 diabetes and other chronic disease outcomes. First of all, household food insecurity is experienced as a chronic stressor such as several months over a year. This is going to promote a stress response, and the stress response results in a preference for and consumption of highly palatable foods. That stress response brought on by experiencing household food insecurity during a critical developmental state such as in utero, infancy, puberty and pregnancy is more damaging, and that leads to visceral adiposity, fat accumulation, insulin resistance, or diet induced obesity that can result in increased risk for chronic disease.

Again, the same researcher, Dr. Laraia and colleagues studied whether there was an independent association between household food insecurity and pregnancy-related complications. The data is from the Pregnancy, Infection and Nutrition Prospective Cohort study was used to assess household food insecurity retrospectively using the USDA 18-item Core Food Security module among 810 low-income pregnant women who were recruited between 2001 and 2005, and they were followed through their pregnancy. Fourteen percent were marginally food secure and 10% were from food insecure households.

In adjusted models, living in a food insecure household was significantly associated with severe obesity. Women with a body mass index greater than 35 or equal to 35 were at three time’s greater risk of reporting household food insecurity. It was also associated with greater gestational weight gain.

Women gained on average 1.87 kilos or four pounds more than women from food secure households. On average, they had a 25% higher actual to recommended weight gain ratio, and almost 2.8 time’s greater odds of developing gestational diabetes.

Now, if I had to pick one target group for intervention, it would be this group, girls and women of childbearing age and pregnancy. And I go even a little bit further, maybe through the newborns up until age two, what I call the first thousand days. Because the diet of a pregnant mother may affect the development and disease risk of her children and her grandchildren. So for many reasons, it's important that we provide intensive intervention to pregnant women and that we refer them for medical nutrition therapy and assess for household food security and refer them to the Special Supplemental Food Program for Women, Infants and Children or the WIC Program.

Now, another researcher Dr. Stephanie Grilo and colleagues reported on food insecurity among pregnant adolescents in New York City between 2008 and 2011. Pregnant adolescents experienced alarming rates of food insecurity, more than half, and about a quarter of them were chronically food insecure. Those who were food insecure experienced more depressive symptoms, which in turn predicted adverse birth outcomes such as low birth weight and earlier gestational age. So, again just reinforcing what we first saw in the slide from Dr. Bullock, implications for intergenerational effects of food insecurity on pregnant adolescents and their children.

So you might say, "Well, why are food insecure people vulnerable to overweight, diabetes and other chronic conditions?" Well, first of all, they are subject to the same influences as we all face; more sedentary lifestyles, increased portion sizes, but they also face unique challenges in adopting healthful behaviors. First of all, high levels of stress due to financial and emotional pressures of food insecurity, low-wage work, inadequate and long distance transportation, poor housing and many other factors. We know that mothers often restrict their own food intake to protect their children from hunger.

Dr. Hilary Seligman, she's probably the one who's done the most work in this area, wrote in the New England Journal of Medicine, "Cycles of food restrictions are associated with preferences for energy dense foods, increased body fat and restriction and decreased lean muscle mass. Adults who anticipate future food scarcity also over consume during periods when access to food is reliable, and these behavioral adaptations appear to be hardwired."

Low-income communities have greater availability of fast food restaurants, greater exposure to food marketing and advertising for obesity-promoting products and fewer accesses to parks and green spaces, bike paths and recreational facilities. Low-income neighborhoods frequently lack a full service grocery store, food farmers markets where residents can buy a variety of fruits, vegetables, whole grains and low-fat dairy products. And often the healthy food is more expensive; whereas, refined grains, added sugars and fats are generally inexpensive and readily available. Even when fresh produce is available, it's often of poorer quality and more expensive.

Dr. Seligman and colleagues found that almost half of the adults with diabetes were food insecure in a cross-sectional survey of safety net clinics in San Francisco and Chicago that were serving low-income patients. After adjusting for age, sex, race, ethnicity, income, education, tobacco use, BMI, insulin use, and medication adherence, they found a difference in mean hemoglobin A1Cs. It was 8.55% among food insecure participants, higher than among food secure participants at 8.10%. Food insecure participants were more likely to report difficulty affording a diabetes appropriate diet because they shift their dietary intake towards inexpensive, calorically dense foods, which generally include a high proportion of refined carbohydrates, added sugars and fat. The researchers also found that the patients experienced higher emotional distress.

Now, here's a study published in Diabetes Care in 2013 that looked at NHANES data, the National Health and Nutrition Examination Survey of adults with diabetes for the period 1999 through 2008. They found this is the first time that it looked at food insecurity and they were looking at what was the association with worse glycemic control, cholesterol and blood pressure. And the outcomes they were looking at was an A1C that was over 9%, an LDL over 100, and blood pressure over 140 over 90. And what they found was food insecurity was significantly associated with poor glycemic control and LDL, though it wasn't associated with blood pressure control.

Well, again food matters and intuitively and practically you know this, and I've shown you a lot of evidence. So now, what do we do about it? Well, the IHS Division of Diabetes has developed a two-page food insecurity assessment tool because we know you need a quick and valid way to identify clients at risk for food insecurity. So, here are the two items screening tool to identify patients and families that risk for food insecurity. Later on, I'm going to talk to you about page two where you can help patients identify resources.

So just let me show you on the screen here, what I've done is just kind of pull the two questions you need to ask. You need to read each statement and ask your clients if the statement is often true, sometimes true, rarely true or never true. The first question is, "Within the past 12 months, we worried whether our food would run out before we got money to buy more." And two, "Within the past 12 months, the food we bought just didn't last and we didn't have money to get more." Now, if your client responds "often true" or "sometimes true" to either statement, they likely have food insecurity. So you can help them to get more food by filling out the list of resources and giving it to them.

Dr. Aaron Hager and colleagues in Baltimore found that this two-item screen was sensitive, specific and valid among the 30,000 low-income families with young children when it was compared to the gold standard and that is the 18-item USDA Household Food Security Survey that you see in a lot of the research published.

Well, it's a whole a lot easier asking two questions than 18 questions. And you might say, well, Brenda, it's hard to ask the patients about hunger and food insecurity," and you're right it is hard, but you know what, we screen for difficult issues now. We screen for depression, we screen for domestic violence and tobacco and alcohol use. So one consideration is well let's use these two food insecurity screening items, maybe them as part of the EHR. We might have clinic check in staff screen patients for household food insecurity when they arrive for an appointment. That could be part of questions that are on the tablet. It doesn't have to be complicated.

Now, I will tell you, it's a two sided form. On the back side here on the right -- the second side of the resource has a place for you to list the food assistance programs in your community, and you likely know about the governmental food assistance programs that are listed here. For example, starts off with SNAP. And I realize this is small, I'll give you a bigger version in a little bit; Commodity Foods, the WIC Programs, but what about some other resources like food banks. Where are they in your community? Are they in community centers, are they in churches?

Well, together as a team at your clinic and community health program, you can customize this resource list with the names of the programs, some contact information, and any other information that can be helpful for you to share with your clients.

Again, in the 2012 Report to Congress addressing child hunger and obesity, it provided some data on the average monthly participation for each of the four major federal food assistance programs that serve children and families in Indian Country. And the first one is in most Indian communities, though not all, is the Food Distribution Program on Indian Reservations (FDPIR) or as many call it "Commodity Foods Program." It provides USDA food packages to low-income American Indian and Alaska Native families living in Indian Country who do not participate in SNAP.

In 2011, the FDPIR program served over 77,000 participants, and up here on the top right is a picture from Old Harbor, Alaska Tribal Food Distribution Program showing the foods a household of three would receive. USDA has improved the nutritional quality of foods delivered through that program in the last decade. In fact, over the last three decades that I've worked in Indian Country, the food package now offers more fresh fruits and vegetables, whole grain foods, and lower fat meats.

Now, the second one, SNAP, is the Supplemental Nutrition Assistance Program, and it used to be called “food stamps,” and it’s the largest food assistance program in the U.S. and the largest one for American Indians and Alaska Natives. It offers food assistance in the form of debit cards or EDT cards that can be used to buy items from authorized retailers. Now, based on data, again, from March of 2009, over 800,000 individuals were SNAP participants.

WIC, again, is the Supplemental Food Program for Women, Infants and Children, and it provides food packages to pregnant and postpartum women, infants and children up to age five to meet their special nutritional needs as well as provide nutrition education, breastfeeding promotion and support and referrals to healthcare and social service providers.

The National School Lunch Program reached almost 900,000 people.

So let’s look at these federal food assistance programs. So just briefly, here’s an image -- sorry, it’s blurred, but this is a photo of a WIC package incorporating some of these new foods in 2009, foods such as fresh fruits and vegetables, whole grains, beans, eggs and peanut butter.

Let’s look at SNAP. The current USDA Secretary of Agriculture, Tom Vilsack said, -- this is to me a shocking statement -- “One of every two children in this country will be on food assistance at some point during their childhood.” Again, I think that’s just so shocking. Research has repeatedly demonstrated that two of the most detrimental economic conditions affecting a child’s health are poverty and food insecurity.

Now, National Geographic did a story called “The New Face of Hunger,” and you can see the link here. In 2013, the average monthly SNAP benefit was a \$133, less than a \$1.50 a meal. Now, SNAP recipients typically run through their monthly allotment in three weeks, then they turn to food banks. Nevertheless, only about 75% of those who are eligible for the programs actually participate in and receive SNAP benefits. A lot of it has to do with just the hurdles people have to go through to complete the application and either apply or reapply.

Earlier, I showed you a slide of food deserts in Indian Country. Well, one solution has been for mobile groceries to travel to remote rural communities. Here’s a photo of a San Felipe Pueblo family here in New Mexico shopping at MoGro, the mobile grocery. And the photo on the right shows a temperature controlled truck that travels to the pueblos to provide access to healthy, affordable food.

As part of the *Let’s Move!* in Indian Country Program, many families participated in community gardens, and that’s one of the goals of *Let’s Move!* is to ensure families have access to healthy, affordable foods. This slide shows a family in Tulalip Tribe of Washington Community Garden.

The Special Diabetes Program for Indians funded the Traditional Foods Project through CDC in 2008 to 2014, and this slide shows, on the bottom left, some huckleberries from the Muckleshoot Traditional Foods and Medicines Program in Western Washington. The results of the Traditional Foods Project in 17 Tribal communities was reported in this year’s February 12 supplement to MNWR, and I’ve got the link here.

Now, I’d like to share a novel approach to reaching food insecure individuals with diabetes.

Food banks could be an ideal site for diabetes self-management support because they provide free diabetes appropriate food to people in low-income communities.

Between February 2012 and March of 2014, Dr. Hilary Seligman and colleagues at the University of California San Francisco, conducted a pilot intervention with Feeding America. Feeding America is the nation’s largest hunger relief organization. They enrolled 687 food bank clients with diabetes in three states in a six month intervention that provided them with blood glucose monitoring, diabetes

appropriate food, either once or twice a month, amounting to enough food to last one or two weeks and referring clients who lack the usual source of medical care to primary care providers. Of course, they followed HIPPA regulations. And they provided diabetes self-management education and support.

What they found were improvements in glycemic control, A1C, from an average of 9.52% to 9.04%. A little more about this study, the participants in the pilot intervention received these foods, prepackaged boxes including wholegrain, beans, low-sodium vegetables, and shelf-stable dairy products. They also had it supplemented with perishable foods such as fresh produce, non-fat or low-fat milk, yogurt and cheese, wholegrain bread, and frozen lean meat. Each box contains recipes and cooking tips. And there was a dietitian and/or a certified diabetes educator onsite for diabetes self-management education and support for individuals and group sessions. The satisfaction with the food group was high and 60% reported eating more fruits and vegetables.

Now, I called Morgan Smith, he's the clinical nurse specialist and certified diabetes educator who worked in the Redwood Empire Food Banks site in Santa Rosa, California, and this site served many people including American Indians. And he said, "Brenda, remember, people are reluctant to try new foods, so we prepared tasting demonstrations with some of these new foods like kale that we were distributing, simple and easy to prepare recipes that tasted good." Although food banks aren't traditional sources for diabetes support, this pilot study suggests a promising health promotion model. And of interest is, they've gone on to apply for some more NIH funding and they're doing a longer term funding, again, piloting it in low-income communities and working cooperatively or in collaboration with Feeding America.

So, food insecurity can impact health in at least two ways. It can cause disease, and it can impair the ability to manage disease.

Here's a model, again, adapted from Dr. Seligman that shows community intervention, that is food banks to help break the cycle of food insecurity early on before you've got problems of poor diabetes self-management, all kind of competing demands, where we intervene in a traditional clinic intervention. People start getting higher and higher A1C's, getting all kind of other complications, complications even like hypoglycemia which sends them to the ER, having increased healthcare utilization and so forth, which gets that vicious cycle going.

Now, I'd like to share some resources that can help you take a broader perspective in making a difference in food access in your community. We need to look, not only at food policy, but also food sovereignty, and this image is from the cover of a new food policy toolkit that's called, "Good Foods, Good Laws: Putting Food Policy to Work in Navajo Nation 2015." It was created by Navajo Nation with the Harvard Food Law and Policy Clinic to bolster efforts to increase food sovereignty in the Navajo Nation.

Here's another one, "Feeding Ourselves: Food Access, Health Disparities, and the Pathways to Healthy Native American Communities." It explores the complex historical and contemporary challenges to Native American food access, childhood obesity and health disparities. And this 2015 report was commissioned by the American Heart Association, the Robert Wood Johnson Foundation and Voices for Healthy Kids. It encourages readers to take a first step to look at a solution, becoming aware of the problems of Native health disparities and its deep interconnections to U.S. Indian policy, poverty, historical trauma, and food systems.

There are just a couple of examples here of some community driven solutions. One in Cheyenne River with a pesticide-free garden policy change and one which has been implemented in Navajo Nation, a junk food tax and zero tax on fruits and vegetables.

Another one here; food policy councils. They can bring together stakeholders from diverse food-related sectors to examine how is the food system operating and develop recommendations on how to improve

it. This is one from Alaska. It works to strengthen Alaska's food systems to spur local economic development, increase food security and improve nutrition and health. They just had their conference in February and it did address food insecurity. Another community, kind of gets us across the U.S. not only the Lower 48 but also in Alaska.

This one's from Tohono O'odham community in Sells, Arizona, working to create a healthy sustainable and culturally vital community for their Nation's 28,000 members. In 2011, they received the Farmer's Market Promotion Program to help foster food that's traditionally farmed by the Nation and it helped them to reinstate the practice of gathering as well as cultivating some traditional O'odham foods. There have been several scientific studies that confirm that there are some foods, traditional foods like tepary beans, mesquite beans, chia seeds and prickly pear that help regulate blood sugars.

Here's another tool to help Native communities reclaim local food systems. This one's called "Food Sovereignty Assessment Tool." I encourage you to access it online. It has eight sets of exercises to help describe nutrition and health in the community. And in 2014, the Diné Policy Institute published the "Diné Food Sovereignty Report", a report on the Navajo Nation food system and a case to rebuild a self-sufficient food system for the Diné people; Diné being the Navajo Nation.

They used some summer interns who conducted the surveys and community interviews at grocery stores and other local high traffic shopping areas like the local flea market in five communities or chapters that surrounded Diné College. Their findings found that 65% of individuals received food assistance, 65% had food insecurity. Over half had to travel off the Reservation for food purchases and a large percentage of respondents had the desire to learn more about traditional foods and wanted increased access to traditional foods.

So here are two resources, one at the top here, and I'll be showing those a little bit more. This one here as well as here is the second one, "My Native Plate" and "An Educator's Tip Sheet to Use My Native Plate", which addresses food insecurity. It's an opportunity for you to refer them to community food resources in the program if it's needed.

Nutrition education provided to patients with prediabetes and diabetes should emphasize cost neutral strategies for dietary change. For example, reducing food portion sizes could be more feasible than many of our dietary substitutions that we recommend. For example, encouraging intake of frozen rather than canned fruits and vegetables is inexpensive and significantly reduces the intake of salt and sugar that's commonly added to fruits and vegetables once they're canned.

And then, providing specific confirmation about local farmer's markets which allows access to cheaper source of fresh fruits and vegetables that may be available at a grocery store or a convenience store. Here in New Mexico at the farmer's markets, if you have EBT cards, SNAP cards or if you're a WIC participant, you can get twice, if you will, the value of your EBT card and can exchange those at farmer's markets and get twice as much as you could in a grocery store.

So, actions that you can take now. First of all, screening for food insecurity using the two-question screen for every participant -- screening for food insecurity and then also customizing the form, customizing the form on the right here. You might have to start by asking social workers for local resources for emergency food assistance than searching further. Then this is the handout you can provide to your patients, clinic staff and community members.

So how do you find these resources? Here's the link up here on the top or either the "My Native Plate" and then also down here, "My Native Plate", two sides, then "The Educator's Guide" and then "Food Insecurity Assessment Tool and Resource List."

A few more action steps, be an advocate or continue to be an advocate. You can do needs assessment. I provided quite a few resources for you. You can also work with Tribes to expand and

improve participation in federal nutrition programs. You can find out what's the rate of participation in your community. I was surprised to learn that some Tribe's participation ranged anywhere from 50% to 90% of SNAP eligible people, and that only one in three eligible children receive school breakfast. You can also work with community champions to create or strengthen food policy groups. You can step out of the clinic like they did in California. Provide diabetes self-management education and support in the community at food banks. Many of you are already partnering and working in community centers, in the schools, senior sites doing food demonstrations at food distribution programs.

I just want you to think as well about food pantries and food banks. And many of you already volunteer your time, sometimes your money, your expertise and voice to reduce food insecurity in your community.

Well, food matters and you are part of the solution with a vision of a food secure community moving from emergency food to local food security and Tribal food sovereignty, from empty calories to nutritious foods, from charity for the needy to empowered communities, from malnutrition and poor health to health and food literacy. So I invite you to stay involved. If you're not involved yet, get involved. As clinicians and diabetes educators, we can and do make a difference in food security. Thank you very much.

Jan Frederick:

Thank you so much, Brenda. You just gave us a wonderful presentation, so inspiring and we have a lot of information on those research and resources, so thank you so much.

I want to be sure to remind all of you that if you would like a copy of Brenda's slides, they are available to you in that box on the left side of your screen called "Handouts." And if you have questions or comments for Brenda, we have a couple of minutes left for that, so quickly enter those. I also want to let you know that we have the good fortune of having a couple of special people on our call. We have Dr. Ann Bullock, the Director of the Division of Diabetes participating, and then we also have Kelli Begay who is now the National Nutrition Consultant for the Division of Diabetes on our call to participate in this discussion of food insecurity.

Dr. Bullock, do you have any closing comments for us?

Dr. Ann Bullock:

Thanks, Jan, and very much thank you, Brenda, for a great talk. Something that we've overlooked for years in diabetes work we've been telling people for years about the kinds of foods that they "should eat," when in fact many of those people had very little access realistically to what I'm seeing.

I'm seeing one of the comments from Ms. Dollor talking about how produce on the Fort Peck Reservation is either not available or in very poor condition and probably pretty unaffordable even if it's in good shape. For all the reasons Brenda talked about for many of our patient, our community members, nourishing food is just not a realistic thing on a regular basis. And the impact that has particularly on pregnant women and young children is devastating. We need to do as Brenda's suggesting to do all we can to get truly nourishing foods. I used the word "nourishing" because healthy and all that implies some of the judgmental words we sometimes have used, but the nourishing foods that the people on our community need very much not only help control diabetes but to build strong bodies that are healthy for a lifetime.

So, thank you all for the work that you do, for the compassion you have, the understanding you have for what's going on in our communities and also the understanding that high-fat, high-calorie foods, they aren't only cheap and accessible, but they're a familiar taste for people and they actually help reduce

the feeling of stress for at least a few minutes, and so for all those reasons it's hard to have folks sometimes use some more of the healthier foods.

So, enough for me. Please, if you have questions or comments for Brenda, please do so again. Thank you everyone for joining and thank you, Brenda.

Brenda Broussard:

You're welcome. Thank you.

Jan Frederick:

Thanks, Dr. Bullock. Kelli, do you have anything you want to add?

Kelli Begay:

Thanks, Jan. Sure. I think one thing that I'd like to share is that while RDs are really the food advocate, but I think this is an issue that not only dietitians should be bringing up but I think that any provider that works with a patient should try to help screen for food insecurity. So I encourage all of you that are on the call today to share this information and the assessment tools and the things that Brenda shared with others in your clinic or program. And thank you, Brenda, for providing such great information. I think that's it. Thanks, Jan.