Rural Insights on Adult and Youth Obesity, a National and Community-based Perspective – 10/11/18

Kristine Sande: Good afternoon everyone, I'm Kristine Sande and I'm the program director of the Rural Health Information Hub and I'd like to welcome you to today's Webinar, Rural Insights on Adults and Youth Obesity, a National and Community- based Perspective. Before we get started, I'll just run through a few housekeeping items. We do hope to have time for your questions at the end of the webinar. If you have questions for our presenters, please submit those at the end of the webinar using the Q&A section that will appear on the lower right hand corner of the screen following the presentation. We have provided a PDF copy of the presentation on the RHIhub website and that's accessible through the URL on your screen and we've also sent that link via chat so that you can just click on it there. For technical issues during the webinar, please call WebEx support at (866) 229-3239.

At this time, I will turn it over to Jen Burges from the Federal Office of Rural Health Policy who will introduce today's speaker. Jen.

Jennifer Burges: Thanks Kristine and thank you to all who have made room in their busy schedules to participate on this webinar today. My name is Jennifer Burges and I am the research coordinator for the Federal Office of Rural Health Policy and I want to extend a tremendous thank you to our colleagues at the National Center for Health Statistics for lending us their expertise today. We're extremely grateful for the developing partnership between, FORHP and NCHS. It's my extreme privilege to introduce our three esteemed speakers for today. Kendra McDow is a general pediatrician and epidemic intelligence service fellow at the Center for Disease Control and Prevention. Dr. McDow is assigned to the National Health and Nutrition Examination Survey, NHANES, at the National Center for Health Statistics, NCHS. Her research interests include early child development, adolescent health and pediatric environmental health, all of which intersect with obesity.

Secondly, we have Craig Hales, is a preventative medicine physician and has been a medical epidemiologist at the CDC since 2005. Dr. Hales is currently with NCH or is currently with NHANES at CDCs NCHS where his focus is on obesity and nutritional epidemiology. Last but not least, we have Shelby Polk, who is an associate professor and chair of the Nursing Department at Delta State University, Robert E. Smith, school of nursing. She has held various positions throughout her nursing career in hospitals clinic and academic settings. She enjoys her work as both an educator and practitioner and is a strong advocate for health promotion and disease prevention strategies. She's improved health outcomes in rural Mississippi communities where people live, work, learn, and additionally they play. After that brief introduction, I will kick it off to our panelists.

Kendra McDow: Good afternoon everyone. My name is Dr. McDow and today I'm presenting an overview of the National Health and Nutrition Examination Survey, also known as NHANES. NHANES assess the health and nutritional status of children and adults in the U.S., and provides population based estimates of health condition, awareness, treatment, and control of selected diseases, environmental exposure, nutrition status, and diet behavior. Additionally, NHANES maintains a bio-specimen program. Authorized by the National Health Survey act of 1956, to quote secure accurate and current statistical information on the amount distributional effects of illness and disability in the United States, NHANES has taken on many forms evolving since it was first conducted in 1959 from a periodic survey to the continuous annual survey that we have today. As you can see, when the survey was first conducted, the population of interest was adults, 18 to 79 years of age.

Additionally, the focus of the survey was on selected chronic diseases such as diabetes and cardiovascular disease. NHANES has collected the weight and height of the American population since survey inception. In 1971, the nutrition component was added and the name changed from the National Health Examination Survey, NHES, to the National Health and Nutrition Examination Survey. Since 1999, the survey occurs annually with all age groups included.

NHANES is designed to be a nationally representative survey of the health and nutritional status of the civilian non institutionalized U.S. population. Approximately 5,000 individuals are examined annually with 13 groups being over sampled dependent upon public health trends. The survey uses a multistage probability sampling design, which I'm going to explain a little bit further.

In stage one, all counties in the U.S. are divided into 15 groups based on county characteristics. One county is selected randomly from each group and these counties form the 15 counties that are selected each year for the survey. Within a county smaller groups called segments are formed. This is where we transition to stage two. 18 to 26 segments are selected. In stage three, all households within the segment are identified and a random sample of about 30 houses are selected within each segment. At the last stage, a field interviewer goes to each household and asks demographic information about all persons in the home. A computer algorithm then randomly selects demographic characteristics. If a person in the house matches these demographic characteristics, they are informed of the survey and their right as a participant and then are given the opportunity to enroll. Each person selected within the county can represent up to 65,000 other people, with matched demographic characteristics across the U.S.

NHANES combines interview with physical examinations and laboratory studies. This design makes NHANES unique among surveys and maximize the quality and accuracy of data collected.

After a person is selected, they are informed and consent to participate in the in person home interview. During the interview by the field interviewer, data is collected on demographics, health condition, insurance, healthcare use, prescription drugs and dietary supplement use. The individual then undergoes informed consent to participate in the physical assessments component of the survey. Physical assessments take place and the mobile advanced centers, also known as the MEC which I'm going to explain further.

Here is a picture of the outside of the MEC and a schematic of the inside of the MEC. The MEC allows the survey, the flexibility to travel across the United State and provide a standardized examination and environment to all participants. As you can see, it consists of four attached trailers. There is a room for physical exam measurements by the doctor, body measurements by highly trained staff, dental exam by a dentist. There's also a room to test hearing, a laboratory and private interview rooms. Individuals are registered and then go on to complete components of the examination. I'll note images that are provided here or not of the actual participants and serve only provide an illustrated example of survey operations. Here we have the MEC doctor taking an individual's blood pressure, the physician also provides pretest counseling or STI testing. I'll note the picture on the right of the screen shows an individual getting a treadmill test done. This treadmill test is no longer a component of the survey.

Components of the survey cycle in and out, allowing NHANES to remain flexible with current public health need and trends. Here we have the MEC dentist performing an oral health exam. In another room there is DXA, which it allows us to measure body composition as well and bone density and mineral content. In private interview rooms, detailed dietary intake information is obtained from sample participants by a trained nutritionist. This allows us to collect data on what Americans are eating and drinking. Participants also answer sensitive health related question in a private interview using computer assisted personal interviewing.

The MEC contains a laboratory for collection and processing of bio-specimens. Laboratory tests include a complete blood count and pregnancy test which are completed in house and additional lab examination for nutritional biomarkers, diabetes and lipid profile. These are lab tests that are critical in allowing researchers to study the interaction of nutrition, obesity, and chronic disease. Here is the room where body measurements are taken, also known as anthropometry. 13 body measurements are collected on sample participants, including vaginal abdominal diameter. These measures allow us to provide estimates for obesity prevalence, monitor growth and development of children and study associations between chronic disease and body measurements. Height and weight measures collected are used to develop the CDC pediatric growth chart used in doctor's offices. To the right, this is a great picture of Dr. Porter, the director of NHANES and NBA Legend, Dikembe Mutombo. Mr. Mutombo was touring the MEC and we NHANES welcome special guests such as government officials and community stakeholders to tour NHANES and get a hands on experience with the survey.

After completion of the MEC examination, individuals can then go on and participate in a post exam assessment. This is a second, 24 hour dietary recall. I'm going to go into a little bit about the data release process. After the data, the questionnaire data, the examination, and the laboratory tests data are collected, it is processed for release. Data are edited for consistency, accuracy, and further confidentiality. Public data is released in two years cycles. All public use data is available on the NHANES website for data users and researchers. This is a snapshot of the website which I will provide at the end of the presentation. NHANES data is central to public health policy development and practice changes among many other landmark findings from NHANES showing rising levels of obesity results in national public health action. Shortly we will hear from Dr. Hales discussing differences in obesity prevalence among rural and urban populations.

NHANES continues to serve its mission of assessing the health and nutritional status of children and adults in the U.S. Just last week, NHANES researchers published that one out of three Americans are eating fast food on a given day. You might have seen this covered in the news. It was covered extensively by major news outlets including CNN. This is not only an interesting headline, but adds to the growing literature on the nutritional value of the food we eat and then nutritional status of Americans. Thank you so much for your time. To learn more about NHANES and for access to public use files, I encourage you to visit our website which is available on the slide. Now I would like to turn the presentation over to my colleague Dr. Craig Hales.

Craig Hales: Okay. Good afternoon. I'm Craig Hales and I'm a medical epidemiologist with the NHANES program at the National Center for Health Statistics. In this presentation, I'm going to present the results from a couple of studies that were published earlier this year on the prevalence of obesity and severe obesity among rural versus urban youth and adult in the U.S., using data from NHANES from 2001 to 2016.

Like Dr. McDow explained in her introduction, an important component of the National Health and Nutrition Examination Survey or NHANES is the standardized measurement of height and weight at the mobile examination center. NHANES is the only nationally representative survey that estimates obesity prevalence based on measured height and weight instead of self-reported height and weight. Using measured height and weight to calculate obesity prevalence is important because not surprisingly adults tend to under report their weight and they tend to over report their height, especially in men. As a result, the prevalence is lower based on self-reported height and weight compared to measured height and weight. You can see on the left side of the figure that in 2015, 2016 adult obesity prevalence in the U.S. was 39.6% using measured height and weight in NHANES. However, U.S. adult obesity prevalence was only 29.6% when participants reported their own height and weight and the behavioral risk factor surveillance system or BRFSS, which is the state based telephone interview survey. Similar

patterns are also seen in adolescents and in children whose parents report the child's height and weight.

Obesity is defined using the body mass index or BMI and BMI is calculated as a person's weight in kilograms divided by their height in meters squared. BMI is the convenient measure for development for defining obesity for surveillance purposes because it is easy to measure and calculate, but it's not a direct measure of body fat. Obesity in adults 20 years of age and older is defined as having a BMI of 30 or higher.

For example, a 5 foot 9 inch adult, with obesity weighs 203 pounds or more. Severe obesity is defined as having a BMI of 40 or higher, meaning that a 5 foot 9 inch adult with severe obesity weighs 271 pounds or more. In youth, 2-19 years of age in the U.S., the definition of obesity is based on the CDC growth charts. On the right side of the screen, you can see a BMI for age growth chart for girls with age across the bottom and BMI along the sides. The lines indicate the BMI percentiles for each age and the top line is the 95th percentile. Obesity is defined as having a BMI at or above the 95th percentile for the child's age, which for an average height 10-year old boy is 98 pounds.

Severe obesity is defined as having a BMI at or above 120% over the 95th percentile for the child's age, which for an average height 10-year old boy is 118 pounds. Obesity and severe obesity prevalence among us adults continues to increase. This figure shows NHANES data from 1960 to 2016 and illustrates the rise in obesity and severe obesity prevalence among men and women since around 1980. This figure shows NHANES data back to 1970 and illustrates how obesity and severe obesity prevalence has risen among youth since around 1980. Even though obesity and severe obesity appears to have leveled off over the past decade, the prevalence still continues to be high.

We know that there are disparities in obesity prevalence by factors that are important to consider in rural populations such as socioeconomic status, race and ethnicity, and by geographic location, which is by U.S. states. In the next couple of slides, I'm going to illustrate this with some examples. Obesity prevalence is higher and increasing among girls and households where the head of household has a lower education level. This figure uses data from NHANES from 1999 to 2014 and shows that obesity prevalence has increased over this time period among girls in households where the head of household has a high school education or less, which is shown with a top solid line. Whereas among girls in households where the head of household is a college graduate, shown in the bottom, dotted line, obesity prevalence is lower and has not increased over this period. You can see that the disparities in childhood obesity prevalence between households with lower and higher education level has widened over time. This figure just shows girls, but the pattern is similar in boys. There are also disparities in obesity prevalence by race and ethnicity, and this disparity vary by sex. This figure shows obesity prevalence from NHANES among men on the left and among women on the right.

Each bar represents from left to right, non-Hispanic, White, non-Hispanic Black, non-Hispanic Asian and Hispanic adults. Non-Hispanic Asian adults have the lowest prevalence of obesity among both men and women. Among women on the right you can see that obesity prevalence varies by race and ethnicity, whereas you see less variation in obesity prevalence by race and ethnicity among men on the left.

Many of you may have been maps similar to this one showing the prevalence of self-reported obesity among adults that show states with higher prevalence of obesity in dark red and states with lower obesity prevalence in green. These maps show important differences in obesity prevalence by geographic location in the U.S. One thing to keep in mind when using these maps is that obesity prevalence is calculated using self-reported height and weight and versus and like

I showed in the beginning of the presentation, the prevalence of obesity is underestimated when they are based on self-reported height and weight. For the rest of the presentation, I'm going to talk about a pair of studies that colleagues and I at CDC published earlier this year that used measured height and weight data from NHANES to evaluate differences in obesity prevalence between urban and rural areas in 2013 to 2016 and trends from 2001 to 2016.

We used the National Center for Health Statistics, Urban Rural Classification Scheme for Counties. The scheme is based on the U.S. census definitions of metropolitan statistical areas or MSAs and micropolitan statistical areas. For this study, we divided counties into three categories of urbanization, large MSAs or MSAs with a million or more population were the most urban areas and are shown on this map as red and orange. The middle category with medium or small MSA's, which were MSAs, with less than a million population. Rural areas were counties not designated by the U.S. census as belonging to an MSA. These counties were micropolitan statistical areas and noncore counties and are shown on the map in light and dark green. The results from our study showed that in 2013 to 2016 adult obesity prevalence increased from urban to rural areas. Results are shown separately for men and women because the patterns of obesity and severe obesity prevalence are often different between men and women.

Among men on the left, the prevalence of obesity was 31.8% in large MSAs or urban areas, 42.4% in medium or small MSAs and 38.9% in rural areas. Although the increase was not stepwise from urban to rural, there was an increasing trend across the three categories. Among women on the right, the prevalence of obesity increased from 38.1% in large MSAs and 42.5% in medium or small MSAs to 47.2% in rural areas. There was an increasing trend in obesity prevalence for both men and women.

We also saw increasing severe obesity prevalence from urban to rural areas among adults. The prevalence of severe obesity among men on the left more than doubled from 4.1% in large MSAs to 9.9% in rural areas. Among women on the right, the prevalence of severe obesity almost doubled from 8.1% in large MSAs to 13.5% in rural areas. For adults we saw increasing obesity and severe obesity prevalence from urban to rural areas. This figure shows trends in obesity and severe obesity prevalence from 2001 to 2016 among men. The red lines indicates the prevalence in rural areas and the blue line indicates the prevalence in large MSAs or urban areas. I removed the lines for the middle category of medium or small MSAs for clarity. Obesity prevalence at the top increased in both rural and urban areas. The dotted lines on the bottom shows that the prevalence of severe obesity among men also increased in urban and rural areas, but there was a greater increase in severe obesity prevalence among men in rural areas compared to urban areas as shown by the red dotted line.

In fact, severe obesity prevalence among men in rural areas more than tripled from 2.8% in 2001 to 2004 to 9.9% in 2013 to 2016. Among women, there was a similar increase in obesity prevalence from 2001 to 2016 shown at the top of the slide in urban areas in blue and rural areas in red. Severe obesity prevalence among women shown at the bottom also increased in both urban and rural areas. Among women in rural areas, the prevalence of severe obesity doubled from 6.4% in 2001 to 2004 to 13.5% in 2013 to 2016.

Now I'm going to present the results for youth 2 to 19 years of age. The results for boys and girls are combined because the patterns of obesity and severe obesity are similar in boys and girls. Combining boys and girls also increases the sample size. The prevalence of obesity among youth was 17.1% in large MSAs, 17.2% in medium or small MSAs and 21.7% in rural areas. The apparent increase in obesity prevalence in rural areas was not statistically significant. However, when we looked at severe obesity, we found a higher severe obesity prevalence among youth in rural areas compared to urban areas in 2013 to 2016. Severe obesity prevalence among the youth was 5.1% in large MSAs, 5.3% in medium or small MSAs and 9.4% in rural areas. The

obesity prevalence among youth or the severe obesity prevalence among youth in rural areas was almost double that among youth in large MSAs. When we looked at trends in obesity prevalence among youth from 2001 to 2016, we found no increasing trends in obesity in urban areas in blue or rural areas in red. There were also no increases in severe obesity prevalence in urban or rural areas. The trend lines illustrate the pattern of increased prevalence of obesity and severe obesity in rural areas compared to urban areas among youth.

To summarize the disparities in obesity and severe obesity prevalence in rural versus urban areas, obesity prevalence is higher among adults in rural areas compared to urban areas with increasing trends in both, rural, urban and rural areas from 2001 to 2016. When it comes to severe obesity, prevalence in rural areas is approximately double the prevalence in urban areas and this pattern of increased severe obesity in rural areas is seen in both adults and youth. When you look at trends in rural areas from 2001 to 2016, severe obesity prevalence has tripled in men over this period, and severe obesity prevalence has doubled in women. Results that I printed and presented today are published in a pair of studies, a pair of articles in the Journal of the American Medical Association in June of this year, and they are freely available online. Please refer to them if you're interested in reading more. Finally, I'd like to acknowledge the co-authors of these studies. Thank you.

Kristine Sande: Next we'll hear from Shelby Polk. Shelby.

Shelby Polk: At first I'd like before I began my presentation from the role of grantee perspective, I'd like to thank the HRSA Delta State Rural Development Network Grant Program for the opportunities that we had during this grant period to really work in this rural community that I have lived in all my life, and really make some changes, but a lot of lessons were learned along the way. I work at Delta State University in the school of nursing and how we teach and what we do has changed over the time that we've been working on this grant. I also had the time to, and opportunity to attend the Duke Johnson and Johnson Nurse Leadership Program where we had to do a community project out in rural areas, each one of us who were involved in that. My focus during that time, which related back to this grant and we focused really out in the rural health communities specifically looking at nutrition and physical activity.

Throughout this process of having the Delta Healthy Families Project run in and opening the healthy lifestyle center, our big focus has always been on nutrition and physical activity and trying to use those lifestyle modification changes that people are in control of and can make those changes. I'd just like to give the shout out to those who gave us this opportunity to do that.

When we started this grant, we had four major goals. One was to establish a model healthy lifestyle center that could be replicated out in other communities. I will say that during this time, some who came to the center have actually gone out into, that I know of, smaller rural areas and actually not totally replicated but took some of this and started that in their own small communities. Our four major goals was to open that healthy lifestyle center to have empowered patients. When we say we hear that word a lot, but we wanted to know what that meant, what we wanted it to be is that we wanted patients to be held accountable for being self-managers of their own health. When they're in charge, they can make change. The third goal was to have invested providers. By that we meant I'm a healthcare provider, so I'm talking about myself. We want providers that are responsible for providing patients with the knowledge and the resources to know how to be self-managers. Oftentimes in a busy practice, we tell patients what they need to do. We don't teach them how to do that because it's so time consuming. At the center we were not taking patients away from their primary care.

In fact, we encourage them to keep their visits with their primary care providers at all times, but what we did for them is things that they wanted to change. We taught them how to do that and assisted with that. That was what we meant by invested providers, is to teach the providers how to train people and teach people healthcare provider training along with patient training. Then our fourth goal was engaged communities. By that we wanted to do something different for people in the communities to begin to think different in a different manner to do something different. We tried to find ways throughout the program to do that.

The other thing that the grant leadership team decided early on in the grant period is that every program we offered would have evidence behind it to support. I hope that some of you are familiar with these programs, but the National Diabetes Prevention Program probably by far was the largest number of programs that we conducted over this grant period. We all became lifestyle coaches. I became a master trainer so that I could train other lifestyle coaches within these communities to go out and deliver this program. It has been a phenomenal program in this area and it does, the grant has ended we are still continuing to offer this. We've got a new program starting in October 16th of this year. Our focus was obesity, diabetes, and heart disease, but looking at it more from, as I said, nutrition, physical activity standpoint.

There were a few programs that we did offer that really don't have the evidence based research behind them yet. We did pilot programs. The shakedown program is a program for children and their parents. It was 10 weeks, two hour sessions each week, one hour of education and one hour of physical activity. We had a grand and wonderful time. We had probably eight families that attended that and even though the number was small, what we learned from that is that parents and children working together doing physical activity, learning about health really can change the outcomes of our children who Dr. Hale says that number is going up. We know that obesity rates are rising in children and parents have to become involved, so that was a great program that somewhere we tend to plan to continue on to.

The last program we did during the grant period was to take what CMS has given us through intensive behavioral therapy for obesity, the guidelines about when to bring patients in for the weight loss program every week for the first four weeks, every other week or week two through too much through six months and then after six months do another evaluation. We actually did that. We accepted 25 participants in that. They came every week. They knew upfront I had to attend if they became part of our program because we had a lot of people that wanted to be there and we didn't want to take more than the 25. We had some really good outcomes.

I'm still working on the data to report out at the end of the grant period on that, but for the most part I want to think that about probably 85% of our participants, I believe I'm right when I say that, actually lost weight and maintained that weight for that period of time when we were doing that. We plan to deliver this in our community after the grant period has ended too because the structured weight loss ended up being a really good program that we had out in the center.

What did we learn from this? A lot was learned and I think the biggest thing that I know is this, we took the most highly educated people that walk through our center and they were still health illiterate and they need to know what they need to know to be healthy and to make changes in how to change. I think that was one of the biggest things we learned.

The one thing that we've focused on when every patient walked in that center is, the first question was what matters to you about your health? It's at that point that you have to figure out what is going to motivate a person to change to become healthier. Whether it's the physical activity or weight loss or diet or whatever. They have to know what matters to them and then we as the providers must meet them at that point and begin working with them. That's the

biggest thing that we got out of this I think. There were no referrals that the healthy lifestyle center at the beginning, patients walked in because they wanted to come to see what we were about and they stayed with us.

Later though as patients went back to their healthcare providers, the providers started referring to us because of the outcomes that they were seeing in those patients. It ended up being a referral process at the center. A lot of things learned about this. What I will say about my picture that I have here on the screen though is this, the black line in the middle, on the left hand side, you see communities that I drove through when I was doing the Duke University project and working with this grant throughout all the counties in our area that we were working with.

I took pictures and what I found is this, all communities are very close knit. Rural communities are very close knit. They know their people, they are very supportive, they won't change, and some communities, as you can see on the right have made changes in the small towns. Others on the left, you look at that community and you think those communities are dried up and nobody lives there and nothing goes on, but what I found is yes, it does. Things go on and they're very supportive in those towns versus the bigger picture on the right. The difference is this. The ones on the right had a leader in their community that took charge and said and got a group together and made plans and they started working on their community to put the wellness center in, to make the landscaping beautiful, to improve their school systems. The difference on the left is those communities that you see there that don't look so inviting, don't yet have their leader.

When I look at gaps, I think gaps are with the patients in that they need the knowledge and the motivation, with the providers that we need more training on teaching how to prevent health promotion strategies and in communities we need leaders. The biggest thing I know though is this, the research has been done as Dr. Hales and Dr. McDow has shown. Dr. Hales gave a great example of how we need to take research that is known and it needs to be translated into how we practice and the example is, we know that patients don't self-report height and weight. We need to measure height and weight and calculate BMIs. That's a simple step in all clinical practices and health healthcare facilities that the translation of what we know works. How it needs to be being done, I think that's the biggest problem. Program development may from an academic standpoint, teaching in a nurse practitioner program, I believe that we have to include in medical schools and nursing schools, much more health promotion, disease prevention and how to teach patients what they need, how to help them set goals and how to get outcomes based data rather than, I go back to we do school and church helped prayers and that's all we do.

What I think we need to do is go back a month later or two months later or three months later, or every month and get outcomes, find, show that we are improving health outcomes by doing those health fairs, teaching those people what they need to know. That's my thought on that. I don't know if that's right or wrong, but over the five years that I've worked with this, that's what I know. I will say from my standpoint, everyone is not as excited and motivated about promoting health as I am. Through the Duke and this grant, I will tell you that I have totally changed how I think and how I practice and how I teach through these strategies.

My last thing is, how do we deepen rural engagement? I believe we have to start at the communities, the communities that we live in. We have train the people that lived there rather than bringing people into the community through grant funding or opportunities, we bring people to the communities to fix the people in the communities. In the small, rural communities, you're not going to fix them, but they're going to listen to people that live in their community. If we can train those people who live in the community to deliver the programs that are evidence based and that we know they work, we began to change the norm to healthy

living. Where we live in the Mississippi Delta, I can tell you the norm in most rural communities is not based on healthy living. It's really based on survival. And it's because what Dr. Hale says, the health disparities are there. I believe that we have to address those disparities, the poverty, the educational levels, the knowledge base before you can get somebody to a focus on their health. There are so many people in the rural communities that cannot focus on health is not a priority because they're trying to keep their lights on or find food to feed their children. I think those disparities in our areas have to be addressed along with teaching patients and people in our communities how to improve their health outcomes. It has been a wonderful experience for me.

I am totally a rural health person. I live in the rural areas, like I said, have are my life and I believe that we have to change what we do. Dr. Hales showed a map of the United States and I always say Mississippi changes the color of the map every time. I think if we look back on that from years and years and years, we're doing the same thing. We have to stop what we're doing and rethink and reinvent what we're going to do to change health outcomes. I think through this grant we have the opportunity to really get some good data to show that when you work with people and teach them what they need to know, they really do get the outcomes that they need and their lives are changed. Thank you for the opportunity for me to talk about our grant.

Kristine Sande: Oh, thank you so much Dr. Polk. That was great. To all our speakers, thank you so much for participating today. At this time we will open the webinar up for questions. You'll see a Q&A box on the lower right hand corner of the screen where you can enter your questions. As you enter those, please do select the option to send the question to all panelists so that your question doesn't get missed. We do have one question here to start, and that question is I believe for Dr. Polk. How did you drum up so much interest for your programs? Retention is typically a struggle with NDPP.

Shelby Polk: We have been asked that question a lot. We actually are ... I think we conducted a bout 15 DPP projects over a period of time. We had nurses and nurse practitioners trained. Our patients knew upfront what they were coming into and if they could not commit to that one year long program, then we offered them other options as hunger within or other educational opportunities that were not so structured and requirements there. For the most part, if they accepted to come into the DPP, our retention rates were really high. We actually kept patients that came back for their at the end of the one year they were still with us and so I cannot wait to get all of that data compiled and be able to report out what we actually did with that program and that's one reason we're not going to quit that program in this town because it's become known as a great and wonderful program. When we offer that again people sign up and continue to come.

I think the interest came in that the first two or three we were all trained as lifestyle coaches and we ran the program exactly like it's supposed to be done. We didn't try to shorten it and we didn't try to change anything about it and we did exactly what it was supposed to be. I think you also have to have people who are teaching that DPP program who are good educators and can make it interesting and they don't just stand up there and read from what's in the book. I think that's what we did. We covered the content, but we were excited about that and we actually, the lifestyle coaches actually participated. We weighed, we did our fiscal activity. We were in there with them, so we were not so much the teacher, we were the participant with them just leading the conversation.

Kristine Sande: Great. Another question for you. Were the participants incentivized in any way to participate and were there costs for participation?

Shelby Polk: For the grant period there was no cost however, and no incentives. We did not give an incentive at the beginning because we did not want people to come just for the goodies. We did not want to do that. Did we give things out during, once they joined and they stayed for those first four, or five weeks and we knew we had our group? Yes, but everything that they got, it may have been a water bottle because we we're talking about water or it may have been my plate because we were talking about how to prepare the plates so they never got anything that was not going to be related to nutrition, physical activity and about change. The cost was not there, however they did sign because we were I'll be approved and they signed an informed consent and our role was that if there was no cost, but if you did not complete the program and you wanted to come back into the program at a later time, it was possible that there would be a cost associated with that.

Now, if that was an incentive or ... I don't know what that was, but that did trigger them to say, "I'm getting an opportunity to do something with no cost, but if I don't complete it, then I may have to pay for it if I want to come back into the program." I hope that answers your question.

Kristine Sande: All right. Thank you. Now, some questions for Dr. Hales. First part of the question is, what is the obesity prevalence for the American Indian and Alaska native population? Then the second part is, does NHANES include this group and if not, why is that the case?

Craig Hales: Okay, thanks for the question. The sample design for NHANES is designed to produce nationally representative estimates for obesity and for many other outcomes. As Dr. McDow explained, when we do our sampling around the country, those samples will include people from all races and ethnic groups, including American Indian and Alaskan Native population. However, because we do want to be able to provide estimates for specific race and ethnic groups, we do over sample certain groups such as non-Hispanic Blacks, non- Hispanic Asian and Hispanic adults and youths. The NHANES does not over sample for American Indian or Alaskan Native population. Even though those people are included in the survey and included in our estimate for the nation, we cannot produce estimates specifically for that group. However, I do know that there are data from the Indian Health Service, National Data Warehouse that has shown that American Indian and Alaskan native youth was 30%, which is higher than the 14% that is reported from NHANES for non-Hispanic whites. Right. Thank you.

Kristine Sande: All right, well thank you. Another question. I believe for Dr. Polk. Transportation is often a major problem in rural areas. Did you have various partners who could assist with that or how did the transportation component work?

Shelby Polk: Transportation is always a problem in the rural area and we did not have transportation available for participants to come. However, we did have some who came from a pretty good distance 30, 45 miles away, but that is one of the biggest problem and that's why I say we need to be out in the communities. In my county, I have 15 small communities and I would be willing to bet that it is some are just eight miles away and you think eight miles is nothing, but those people who live in that small community cannot oftentimes come to Cleveland to attend an educational program.

That's why I believe that we should be training lifestyle coaches in each of my 15 small towns so that then they can deliver that within their town. I think that is the solution and I wrote a grant for that but just did not get awarded that grant but I'm going to work on that again. I think that's the answer, is that we have to train people and leaders within the small rural communities, because we know transportation is a problem. The other reason you need to train leaders within that community, is because people who live in that community listen to the people in their community much more than outsiders coming in to teach you. I think that's the next direction

that I have to go is in my surrounding towns, is to go out and really train those people to deliver those programs. We did not solve the transportation problem. I wish we could, but we did not.

Kristine Sande: If you solve it, let us know.

Shelby Polk: Yeah.

Kristine Sande: All right. A follow up question for Dr. Hale. Back to the American Indian and Alaskan Native question, is there a particular reason why that group isn't over sampled?

Craig Hales: Well, currently the design is to over sample for Hispanic Black and non-Hispanic Asian and Hispanic. We currently don't have any plans to over sample other groups. The groups that we do over sample are some of the larger racial and ethnic minority groups in the U.S. As much as we would like to expand the survey to include other groups, it's just not in our plans at this time.

Kristine Sande: All right. Thank you. I'm not seeing any other questions at this time. I would just mention that for folks looking for obesity prevention resources, the Rural Health Information Hub website does have quite a few resources related to that, including an obesity prevention toolkit and a topic guide on that as well. I would encourage you to check out those resources that are available on the website. At this time we'll bring the webinar to a close.

Thank you so much again to our speakers for the great information and also thank you to our participants for joining us. A survey will automatically open at the end of today's webinar. We encourage you to complete the survey to provide us with your feedback and then we can use that feedback when we host future webinars. Please do fill out that survey. The slides used in today's webinar are currently available at www.ruralhealthinfo.org/webinars. In addition, a recording and a transcript of today's webinar will be made available on the RHIhub website and we'll also send that to you by email in the near future. Thank you again and have a great day.