

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Prevention, Treatment, and Care of Diabetes and Chronic Kidney Diseases: A Healthy People 2020
Progress Review

Monday, September 29, 2014

WEBEX PRODUCER: Good afternoon, and thank you for registering for the Healthy People 2020 Progress Review Webinar. You are now in listen-only mode. Please use the Q&A feature on the right-hand side of your screen to submit any questions. Your questions will be answered at the end of the webinar. As an attendee, you are part of the larger audience. However, due to privacy rights, we have chosen not to display the number or list of attendees to everyone on the call today.

As a reminder, today's call is being recorded. To submit a question, just type your question into the Q&A panel located on the right-hand side of your screen. Just type your question into the text field and click "Send." Please keep the "Send To" defaulted to "All Panelists."

I would now like to introduce the Acting Assistant Secretary for Health in the U.S. Department of Health and Human Services, Dr. Wanda Jones.

Opening Remarks

DR. JONES: Hello, and thank you for joining us for another Healthy People 2020 Progress Review. During these progress reviews, we focus on issues of public health importance that are supported by Healthy People 2020 topic areas, and we generally do two topic areas at a time. So over the next 60 minutes, we'll explore the prevention, treatment, and care of diabetes and chronic kidney diseases. We'll review where we are as a nation on meeting the Healthy People 2020 goals, and more importantly, discuss how we're working to achieve them.

The theme of today's progress review is Prevention, Treatment, and Care of Diabetes and Chronic Kidney Diseases. This is a topic that has much depth and breadth. As a result, we have a number of colleagues joining us today. Leading off will be Rebecca Hines, Chief of the Health Promotion Statistics Branch of the National Center for Health Statistics. She'll provide an update on critical Healthy People 2020 objectives.

Following that, we'll have a number of subject matter experts who will tell us what's being done on the federal level to meet the targets. First is Dr. Andrew Narva, Director of the National Kidney Disease Education Program at the National Institute of Diabetes, Digestive, and Kidney Disease, NIH or NIDDK. He will be followed by Dr. Ann Albright, Director of the Division of Diabetes Translation of the Centers for Disease Control and Prevention.

I'm also delighted to welcome Dr. Adriana Hung, who is a nephrologist and medical director of Dialysis at the National Veterans Administration Hospital. She'll be on hand to answer your questions about how they are addressing these issues among their patients.

Finally, and my favorite part of the progress review, is the community highlight, when a non-federal organization tells us about how they have achieved outcomes in their community. So today, we'll hear from Karen Wauchope, Manager of Clinical and Community Programs at EmblemHealth.

Healthy People 2020 is produced by the Office of Disease Prevention and Health Promotion in the U.S. Department of Health and Human Services. Now in its fourth decade, the Healthy People

Program has grown tremendously and now includes more than 1200 objectives. It remains one of the most endearing health promotion and disease-prevention initiatives in the nation, and it continues to track national data for federal, state, local, non-government, non-profit, and academic stakeholders.

So turning to today's topic, diabetes, we hear so much about diabetes on the news and on TV. It's a group of diseases associated with high blood glucose levels, resulting from how insulin is produced or how that insulin works. We all know someone with diabetes, and some of us may be living with it ourselves.

Type 1 diabetes is insulin dependent. Diagnosis usually occurs during the mid-teens, but it can occur at any age. Type 2 diabetes begins with insulin resistance. Its onset is usually later than with Type 1. Glucose intolerance during the second or third trimester of pregnancy is known as gestational diabetes. Other forms of diabetes can be associated with genetic conditions, surgery, medications, infections, diseases, or illnesses. It's important to note that Type 2 diabetes accounts for 90 to 95 percent of all diagnosed diabetes in adults.

This slide shows the startling increase in the prevalence of obesity on the top and the diagnosed diabetes on the bottom among U.S. adults age 18 or older. Now we just said that some 90 percent of all adults diagnosed with diabetes have Type 2 diabetes for which obesity is a major risk factor. Other risk factors include older age, family history of diabetes or gestational diabetes, impaired glucose metabolism, and physical inactivity. Persons with certain racial and ethnic backgrounds are also at greater risk for diabetes.

Chronic kidney disease or, as it's known, CKD, is the gradual and permanent loss of kidney function. It can be caused by a number of conditions, including diabetes but also hypertension, various kidney diseases, as well as other diseases and illnesses. More than 20 million U.S. adults may have CKD of varying levels of seriousness.

We see on the next slide that there is no cure for CKD, but there are key treatment goals that include slowing the progression of disease, treating the underlying causes, treating complications, and replacing loss of kidney function. End-stage renal disease, or ESRD, is the total and permanent kidney failure. Renal replacement therapies for ESRD patients include dialysis and kidney transplant.

So there is a connection, we see on the next slide, between diabetes and chronic kidney disease. Adults with diabetes are two to three times as likely to have CKD, and they make up 44 percent of all ESRD patients. Both diseases have the same management priorities, including good blood pressure control, glycemic control, and healthy lifestyle.

In 2011, Medicare expenditures for patients with diabetes exceeded \$85 billion. Expenditures for patients with CKD exceeded \$45 billion. These are two very costly conditions. Changes in lifestyles

are needed to reverse the diabetes epidemic and to reduce complications that are common among those with diabetes.

So now, let me turn to Dr. Rebecca Hines, Branch Chief at the National Center for Health Statistics, who will share more information on the progress towards Healthy People 2020 objectives in these key areas.

Dr. Hines?

Presentation - Rebecca Hines

DR. HINES: Thank you, Dr. Jones.

So first we'll begin with a brief overview of today's data presentation. We'll start off with an overview of the progress of the Healthy People 2020 objectives in the diabetes and chronic kidney disease topic areas, then we'll focus on specific data regarding the burden of diabetes, and diabetes treatment and prevention, followed by data for the Healthy People objectives that track chronic kidney disease and end-stage renal disease.

On this next slide, we see there are 18 measurable objectives in the diabetes topic area. For our meeting our targets, based on the most current data available, 1 is moving toward its target, while 11 are showing little or no detectable change. For the chronic kidney disease topic area, there are 24 measurable objectives, 9 of which are meeting their targets as of now; 5 are moving toward the target, with 4 objectives showing little or no detectable change. Two objectives are moving away from their targets.

On the next slide, looking at the burden of diabetes in the U.S., in 2012, it was estimated that 21 million people had ever been diagnosed with diabetes and an additional 8 million people had diabetes and didn't know it or were undiagnosed. Diabetes also was the seventh leading underlying cause of death in 2011. The total cost of diabetes, as you discussed, was estimated to be \$245 billion in 2012. And note for today, the data being presented on diabetes do not differentiate by type. In addition, gestational diabetes is excluded from our data.

So moving now to the first data slide, looking at recent trends in the prevalence of diagnosed diabetes for adults, we see prevalence has increased over the past decade from 6.6 percent to 8.6 percent between 2002 and 2012. Note that the prevalence rates have leveled off in the most recent years for which data are available.

On this next graph, we also see an increase in the rates of new cases of diabetes diagnosed in the past year from 1997 to 2008, followed by a recent leveling off and then a decrease. And then continuing on the next slide, continuing to look at the new cases of diagnosed diabetes in adults, here we see the data broken down by age-specific rates.

The most recent data point, 2011 to '13 for the three oldest age groups at the top of the chart are not significantly different from the 2006 to 2008 estimates, which serve as the Healthy People 2020 baseline year. However, the most recent estimate from 18 to 44 age group, shown in the orange line, 3.2 per 1,000 shows a significant decrease from the Healthy People baseline year rate, which was 4.2 per 1,000 in 2006 through '08. Note that this measure uses a three-year moving average to improve the reliability of the data reported.

This next chart reports data on disparities in the rates of new cases of diagnosed diabetes, the same objective we just reviewed, but shown now by race, ethnicity, and family income. Adults who are Hispanic or non-Hispanic black had nearly two times the rates of newly diagnosed diabetes of the Asian population in 2011 to '13. Additionally, adults and families living below the poverty threshold have three times the rate of newly diagnosed diabetes compared to those at the highest family income levels.

On this next graph, we're looking at the data for the Healthy People objective that aims to increase the proportion of persons with diabetes who report that their condition has been diagnosed. As of 2009 to '12, only about two-thirds of adults who had diabetes also reported that their diabetes had been diagnosed by a physician. As seen in the green bars at the bottom, persons without health insurance were less likely to have their diabetes diagnosed than those with health insurance.

On this next slide, we see a range of the co-existing conditions and complications that are due to diabetes as reported in CDC's 2014 National Diabetes Statistics Report. Of note for today's progress review is that kidney disease is a significant complication, which will be discussed in further detail later, along with risk factors for developing complications from diabetes, as we'll see here in this next slide.

So here on this chart, we're looking at data on three Healthy People objectives that track control of blood glucose, lipids, and blood pressure, all of which can help reduce the risk of developing diabetes-related complications. On the left, we show the objective that tracks adults with poor glycemic control that we want to see a reduction in, defined as hemoglobin A1c levels of greater than 9 percent. About 20 percent of adults with diagnosed diabetes had poor glycemic control in 2009 to '12.

The data in the middle and on the right show that just about half of adults with diagnosed diabetes met the criteria for having LDL cholesterol or blood pressure under control. The dotted lines show the Healthy People targets that as a nation we're aiming to achieve by the end of this decade.

This next chart shows that the rate of lower extremity amputations among persons with diabetes decreased about 50 percent between 1997 to '99 and 2008 to '10. However, there haven't been statistically detectable changes in the rates when comparing the two most recent data points in the sets of bars with the darker green. The data also show the disparities in the rates of lower extremity amputations by race and by sex, blacks with diabetes having one and a half times the rate of whites and males with diabetes having about 2.3 times the rate for females with diabetes.

Next, we will focus on prediabetes, which is an area of particular importance for diabetes prevention, which also will be addressed in the presentations coming up. Prediabetes, which affects over one-third of the U.S. adult population, 86 million Americans, is a condition in which people have high blood glucose or a hemoglobin A1c value above normal, considered high risk but not high enough to be classified as having diabetes. Our definition of prediabetes is based on the 2010 American Diabetes Association Guidelines.

On this next slide, we have the three objectives that provide data on the prevention behaviors among the adult population at high risk for diabetes, people who are prediabetic as outlined on the last slide. In 2011 to '12, more than half of adults with prediabetes reported currently increasing physical activity or trying to lose weight, meeting the Healthy People target, shown as the dotted lines on the chart. Just under half reported reducing the amount of fat or calories in their diet.

We've reviewed the key Healthy People data on diabetes and prediabetes, so now we'll move on to the second half of the data presentation focused on chronic kidney diabetes, CKD, including prevalence and rate of medical evaluation for patients with CKD, followed by data that track new cases of end-stage renal disease, ESRD, and ESRD deaths.

We're looking at the impact and the burden. In 2011, more than 615,000 patients received treatment for ESRD, and nearly 160,000 new cases were reported. More than 17,600 patients received a kidney transplant, and the median time on the transplant wait list for adults was 2.6 years. CKD greatly affects quality of life and places a burden on the healthcare system, accounting for over \$45 billion, nearly 20 percent of total Medicare expenditures in 2011, and total ESRD exceeded \$49 billion, including \$34 billion of the Medicare expenditures also in 2011.

Moving on to the data slide, in 2005 to '10, it was estimated that 15 percent of U.S. adults 18 years and older met the laboratory criteria for CKD stages 1 through 4. There was essentially no change compared with the Healthy People baseline, shown in the gray bar at the top of the graph. Females were more likely to have CKD than males. Non-Hispanic African Americans were more likely to have CKD than non-Hispanic white adults. And prevalence of CKD increased with age. The rate among adults 65 and older was more than seven times the rate observed in adults under 44 years of age.

On this next slide, data for the objective that tracks hypertension in adults with CKD are shown. Over 50 percent of adults with CKD had high blood pressure in 2005 to '10. Men were more likely to have hypertension than women. Non-Hispanic black adults with CKD had significantly higher rates of hypertension than non-Hispanic white and Mexican-American adults. Adults 45 years and older also were at higher risk of having elevated blood pressure. CKD is associated with increased cardiovascular morbidity and mortality, and thus tracking hypertension is relevant given that blood pressure control is one of the most important factors in helping to prevent progression of CKD and reducing the risk of cardiovascular disease.

On this next chart, we see that in 2011, 30.3 percent of adults 65 and older with CKD received the recommended medical evaluation, a considerable increase from 7.3 percent in 2001 and surpassing the Healthy People target of 28.3 percent. The rate of receiving the recommended evaluation by race and ethnicity ranged from 21.2 percent among American Indians and Alaskan Natives to close to 40 percent among the Asian population in 2011. Men had a higher rate of receiving medical evaluation than women. In addition, adults age 65 to 74 were more likely to receive the recommended evaluation than adults in the older groups.

On this next slide, we see the percent of patients with both CKD and diabetes who received A1c testing and eye examinations -- along with serum creatinine, lipid, and urine albumin testing increased significantly from 9 to 27 percent between 2001 and 2011. This objective has met the Healthy People 2020 target based on the most current data. The reported percentage of patients receiving comprehensive diabetic testing was highest among non-Hispanic white and Asian patients. Rates varied little by sex and significantly decreased with age.

In this next set of slides, we'll review data for objectives that focused on end-stage renal disease, ESRD. The rate of new ESRD cases increased considerably from 1980 to 2006, from 91 to 386 cases per million population. Between 2007 and 2010, ESRD rates were relatively stable and then declined, falling to 357 per million population in 2011.

Looking on the next slide at the more recent period, from 2001 to 2011, the rate of new ESRD cases declined from 375 to 357 per million population. However, disparities still persist in the rate of new cases by sex and by race. Men had a higher rate of ESRD than women. The rate of new cases among non-Hispanic black patients was almost four times the rate observed in non-Hispanic white patients. And on the right, we can see that the rate of new ESRD cases increased significantly with age.

In 2011, the rate of ESRD due to diabetes among diabetic patients was 2,296 per million population, down from 2,645 per million in 2007, a significant decrease. This objective is important, as patients with diabetes are at an increased risk of developing ESRD. The highest rate of ESRD due to diabetes occurred among non-Hispanic black patients, almost 4,100 per 1 million in 2011. Between 2007 and 2011, the rate of new ESRD cases increased per persons under 18 years of age and decreased significantly for adults 45 years and older.

Since 2001, the overall death rate among patients on dialysis has fallen from 235 to 188 per 1,000 patient-years, meeting the Healthy People target as of the most current data available. By race, the 2011 rates varied from 138 among Asians to 257 per 1,000 patient-years among non-Hispanic white patients. Most notably, significant decreases in death rates between 2001 and 2011 were observed for all sex, race, and age groups, except patients under 18 years of age.

Now looking at ESRD patients who received a kidney transplant, these patients experienced lower mortality than those on dialysis shown on the previous slide. For patients with a functioning transplant, the overall rate of mortality in 2011 was 32 deaths per 1,000 patient-years compared with 35 in 2001, moving in the direction of the Healthy People target of 29.3 for 1,000 patient-years.

The target was met by three groups as of 2011, women and the Asian and Hispanic populations. Over on the right, we see that mortality rates declined for each of the four age groups, between 2001 and 2011, although the pattern of increased mortality with age did not change.

Moving to the next slide, wrapping up on the summary of the data, both the prevalence and the rate of new cases of diagnosed diabetes for adults increased over the last decade. However, more recent data show that the rate of new cases of diagnosed diabetes has decreased since the 2006 to '08 rate, the 2020 baseline, and has met the 2020 target as of now.

That said, only about two-thirds of adults with diabetes have had their condition diagnosed, and about 20 percent of adults with diagnosed diabetes have a hemoglobin A1c greater than 9 percent, which is defined as poor control of their diabetes. As of this point in the decade, five diabetes objectives have either met or moved toward their target, and on the flip side, over half of the objectives have seen little or no change thus far in the decade.

For the last slide, since 2000, the number of adults with CKD has shown little or no change. During the same period, there has been a significant reduction in new cases of end-stage renal disease and ESRD deaths. About 50 percent of patients with CKD had hypertension in 2005 to 2010, a risk factor for developing end-stage renal disease. The rate of receiving the recommended medical evaluations has improved significantly for patients with CKD and for patients with both CKD and diabetes in those age 65 and older. Although there have been improvements overall -- increases in receipt of the medical evaluation, reduction in new ESRD cases and in mortality -- the data show that disparities still persist.

So to close, the most recent data show that just over half of objectives have met or moved toward their Healthy People target thus far in the decade for the population as a whole, and this concludes the data presentation. So on behalf of NCHS, thank you for this opportunity to give an update on the data for the Healthy People Diabetes and Chronic Kidney Disease Objectives.

DR. JONES: Thank you, Rebecca. These data are really, really critical, and I think give us much to think about moving forward.

Now, Dr. Andrew Narva, who, remind you, is the Director of the National Kidney Disease Education Program at NIDDK, NIH.

Dr. Narva?

Presentation - Andrew Narva

DR. NARVA: Thank you, Dr. Jones, and good afternoon. Type 2 diabetes is often a consequence of being overweight or obese. People with this type of diabetes have high levels of blood glucose because their bodies do not make or use insulin well. Obesity, Type 2 diabetes and kidney disease disproportionately affect racial and ethnic minorities. In fact, about half of all African Americans, compared to about a third of all whites, are obese, making African Americans more likely to develop Type 2 diabetes, and later chronic kidney disease.

Obesity is a strong risk factor for Type 2 diabetes, which in turn increases risk for kidney disease. In light of the associated risk of obesity and Type 2 diabetes, NIDDK has an integrated research program addressing obesity, Type 2 diabetes, and complications of diabetes, including kidney disease.

People with diabetes represent just the tip of the iceberg of this public health problem since almost three times as many people have prediabetes and are at risk for the disease. In the past, there was no proven way to prevent diabetes. In response, the NIDDK initiated the Diabetes Prevention Program, or DPP, a randomized clinical study.

The DPP included an ethnically diverse cohort of over 3,000 participants who were overweight or obese and at great risk for Type 2 diabetes. The trial tested three approaches to prevention: standard of care plus placebo, standard of care plus metformin, and an intensive lifestyle intervention aimed at losing 7 percent of body weight through diet and 150 minutes or more of moderate exercise every week.

The DPP lifestyle intervention proved to be an extremely effective way to prevent diabetes, reducing diabetes incidence by 58 percent during the initial three-year period. Metformin was also found to be quite effective, reducing diabetes incidence by 31 percent. This general pattern, lifestyle better than metformin, but both better than placebo with standard lifestyle recommendations, was consistent among all tested racial and ethnic groups. The results were also durable, lasting to a considerable extent for at least 10 years.

The DPP has had significant public health impact, some examples of which are represented on this slide. The National Diabetes Education Program, a collaboration between NIDDK and CDC, has helped teach the public about the health benefits of the DPP lifestyle intervention. The DPP has also served as the basis for the Special Diabetes Program for Indians, a program which is delivering an adaptation of the lifestyle intervention to American Indians, a group that is at particularly high risk for the disease. The DPP provided the evidence supporting the CDC's NDPP program, which Dr. Albright will describe in detail later.

The NIH has funded evaluation of other scalable, cost-reducing approaches to reducing the burden of diabetes, such as HELP PD. This program trains community health workers to deliver the DPP intervention to groups of people at risk in their communities, an especially promising approach.

Recently, the U.S. Preventive Services Task Force cited the DPP lifestyle intervention as a model for its recent recommendation on behavioral counseling to promote a helpful diet and physical activity for cardiovascular disease prevention in adults with cardiovascular risk factors.

NIH funded studies have produced important data on the value of glycemic control for the prevention of diabetes complications. This data is from the Diabetes Control and Complications Trial, or DCCT, a study of patients with Type 1 diabetes. Another trial, the UK Perspective Diabetes Trial, found broadly similar findings in people with Type 2 diabetes.

In the DCCT, 1441 patients with Type 1 diabetes, age 13 to 40 at the time, were randomly assigned to intensive or conventional therapy, beginning soon after diagnosis for a mean of six and a half years, from 1983 to 1993. Ninety-five percent of the DCCT participants joined a follow-on study, the Epidemiology of Diabetes Interventions and Complications, or EDIC, study to determine long-term effects of the therapies beyond the initial treatment period.

These studies demonstrated significant reductions in diabetic complications with better glucose control. Intensive treatment reduced the risk of non-fatal myocardial infarction, stroke, or death from cardiovascular disease by 57 percent. There were also significant reductions in diabetic eye disease and neuropathy.

After an average 22-year follow-up, EDIC researchers reported that controlling blood glucose, as close as normal as safely possible, can prevent loss of kidney function and is likely to reduce kidney failure. Intensive diabetes therapy reduces the risk of impaired kidney function by 50 percent. However, long-term follow-up was required to see the benefit of treatment on complications, which can take decades to develop. Thus, improvements in glycemic control may lead to a long-term fall in CKD, but the major benefits will likely occur 20 to 25 years later.

Despite this progress, chronic kidney disease is common among people with diabetes. This estimate is based on NHANES data on adults age 20 years or older with diabetes. The figure shows the prevalence of diabetic kidney disease defined by the presence of the two laboratory markers, which identify patients with kidney disease: elevated protein in the urine called albuminuria or reduced kidney function, reflected in the rate at which blood is filtered, known as the GFR. More than a third of people with diabetes have evidence of kidney disease.

As mentioned earlier, diabetes is the leading cause of end-stage renal disease, which is kidney failure requiring dialysis or transplant for survival. And diabetes has driven much of the increase that we've seen over the past two decades. Although the rates of ESRD due to diabetes, shown in the lower figure, have stabilized or begun to decrease, the upper figure demonstrates only a slight change in the actual numbers or counts of people initiating treatment. This reflects the increasing prevalence of diabetes and the expansion of the population at risk for diabetic kidney disease, and it demonstrates the importance of primary prevention of diabetes to the goal of reducing the burden of kidney failure due to diabetic nephropathy.

The burden of ESRD is greatest among ethnic and racial minorities. African Americans, as noted earlier, have four times the rate of ESRD compared to whites. American Indians and Asians also have increased incidence of ESRD. Among all racial and ethnic groups, diabetes is the most common cause of kidney failure. However, recently there has been improvement in rates of ESRD due to diabetes, particularly among American Indians and Alaskan Natives, shown by the purple line in the lower figure. The upper figure shows the actual number or counts of patients starting dialysis.

Responding to the growing burden and disparities in kidney disease is a challenge for the kidney community, including addressing such basic barriers as awareness of kidney disease among those people who have CKD. Although awareness is slowly improving, a significant majority of people with CKD are not even aware that they have kidney disease. Regardless of age, gender, or race, less than 10 percent of people with CKD are aware of their status. Similar challenges were addressed by the diabetes and hypertension communities 20 or 30 years ago, and now the majority of people with hypertension and diabetes are aware of their health problems.

In 2000, NIH established the National Kidney Disease Education Program to reduce the burden of chronic kidney disease, especially among communities most impacted by the disease. NKDEP aims to improve early detection of CKD, facilitate identification of patients at greatest risk for progression to kidney failure, promote evidence-based interventions to slow progression of CKD, and to support the coordination of the federal response to CKD.

One program, Kidney Sundays, works with health ministries of African American churches in collaboration with Chi Eta Phi, the black nurses sorority, and the American Diabetes Association. Kidney Sundays reached 108 faith communities with an estimated membership of nearly 100,000 people in March 2014.

NIH has also responded by funding a range of Type 2 translational research applications. These are scientific investigations, which identify strategies that lead to the adoption, maintenance, and sustainability of scientific advances in clinical practice. One such grant shown here evaluated a website for patients with kidney disease and their families.

These research efforts are diverse, ranging from effectiveness studies to pragmatic implementation approaches and provide evidence-based interventions for subsequent use in population health. Most address high-risk populations with the goal of identifying system-level interventions that can engage both providers and patients in improving CKD detection and management.

Most exciting are large pragmatic or practical trials addressing patients with multiple chronic conditions such as this University of Texas grant, which aims to improve outcomes for people with diabetes, hypertension, and CKD in a high-risk, predominantly Hispanic community. It uses a collaborative, interdisciplinary model and creative application of health information technology to develop an approach to population management, which could be widely implemented. The

challenges include limits of electronic health records to identify and help educate patients, as well as the resistance that many providers express to managing kidney disease.

Looking ahead, improved outcomes for patients with CKD may be greatest if research efforts focus on early stage CKD where intervention is most likely to slow disease progression. Engagement of primary care providers and interdisciplinary collaboration with a wide range of health professionals and community-based health workers is needed, along with closer partnerships with individuals affected by CKD. Thank you.

DR. JONES: Thank you, Dr. Narva. I loved that Last Mile slide. That really says it all for the challenges that face us in a complex system and diverse population.

So now let's hear from Dr. Ann Albright, who's the Director of CDC's Division of Diabetes Translation, to share some of what they're doing to contribute toward the Healthy People objectives.

Dr. Albright?

Presentation - Ann Albright

DR. ALBRIGHT: Thank you, Dr. Jones. I'm really pleased to be here to discuss some of the work CDC is doing with our partners to address the HP 2020 objective. Diabetes is not only a complex health condition, it is a full-fledged public health problem. As we've seen from the data presented so far in this progress review, there are goals that need to be met across the diverse spectrum, from prevention of diabetes and its complications and premature death to preventing certainly Type 2 diabetes.

On your screen, you will see the progression in the prevalence or the total number of people with diagnosed diabetes from 2004 to 2011 at the county level. The light yellow shows places where the prevalence is 6.5 percent or less. And as the colors get darker, they demonstrate increasing prevalence, with the dark red color showing prevalence greater than or equal to 11.2 percent.

This data shows that diabetes is a significant health concern across the country and especially prevalent in certain parts, particularly the southeast. The data presented so far has been for adults. The search for diabetes in youth study, led by CDC in collaboration with NIH, is examining and monitoring in youth. This slide from that study shows trends in Type 2 diabetes prevalence in youth age 10 to 19 years from 2001 to 2009. These data show significant increase in prevalence of Type 2 diabetes over this time frame in males and females in 10 to 14 and 15 to 19 year olds, and in African Americans, Hispanic, and non-Hispanic white youth. While American Indian youth prevalence did not significantly change during this time period, it continues to be the highest.

In addition to growth in the prevalence of diabetes over the past decades, mortality has declined. This continued increase in prevalence and the reduction in mortality means that the average person's chances of developing diabetes during their life has increased dramatically from 1 in 3 to now 2 in 5.

These increases in prevalence and lifetime risks have been accomplished by very encouraging reduction in the rates of serious complications for the average American with diabetes. The largest relative reductions have been seen in myocardial infarction, or heart attacks, and in hyperglycemic death or death due to high blood sugar. Smallest improvements have been seen for end-stage renal disease.

So taken as a whole, we have seen improvements in complication rates for the average person with diabetes. We do still, however, have a long way to go in addressing disparity. On the left side, you can also see that we have seen a decline in mortality due to diabetes, so that left side shows you improvements in mortality and complications. But when you look at the right side of the screen, we have seen some encouraging news about that reduction in rates of incidence and prevalence in diabetes, but is still more than twice as high as it was 20 years ago. And there are high-risk groups with no change. We must continue to make progress in reducing the complications of diabetes and make a great deal more progress in reducing new cases of diabetes and addressing disparities.

Given this complex set of challenges, the diabetes division at CDC has three major priorities. Our national diabetes surveillance system, the research we do, evaluation and program implementation focus on these three areas: the first, preventing diabetes through increasing preventive behaviors, and also increasing access to effective lifestyle interventions, especially for those at high risk. We'll talk more about that in a moment. And you'll also hear from one of our health plan partners in this work next. And also, we work together on promoting healthy environments for the whole population.

The second area we work in is preventing diabetes complications and disability. We do this through increasing access and delivery of preventive health care, including diabetes self-management education, and also enhancing community and environmental strategies to support people with diabetes. I'd like to draw specific attention to work in preventing chronic kidney disease. This includes increasing awareness of CKD and early diagnosis. We have built a national CKD surveillance system and promote use of evidence-based cost effective care.

The third area we work in is we strive to eliminate diabetes-related health disparities through all of our work, which often has a special emphasis on those populations hardest hit.

This stair-step diagram I hope will provide a useful way to visualize and summarize the approach that we take at CDC along with the partners and many stakeholders that we have. The first step is basic science. Also, you can look at the next step, which is really efficacy. These are studies and trials -- that actually Dr. Narva shared some of that work with you that really NIH does a lot of work in this area with their partners and funded grantees.

When you move to that third step, effectiveness, this is where you get into what we call those translational or real-world studies. And this is an area where a number of us share that workload. These are studies done to really take those previous two steps and determine what's going to practically work in the real world.

As you move up those three stairs in the stairway, CDC also works very much in these areas with our partners and others from around HHS, and other stakeholders and partners join forces here as well. These other stairs are, again, efficiency availability and distribution. And the goal here is really to have the biggest effect on the most people to really be sure that these interventions are available and that the distribution of such that we are actually addressing and eliminating disparities. You can think of at the top of that stairway as when we will be reaching these HP 2020 objectives.

I'd like to share some information with you about the National Diabetes Prevention Program because it gives you a great example of how we approach that stairway. The National Diabetes Prevention Program builds on the DPP research study Dr. Narva presented. It also builds on other real-world studies in diabetes prevention that really fall into that effectiveness part of the stairway.

CDC was authorized by Congress to establish this program, which provides a critical opportunity for stakeholders to join forces and implement the proven lifestyle interventions in communities all over the country and achieve widespread reach, which is critical if we're really going to turn the tide on new cases of diabetes.

There are four components of the National Diabetes Prevention Program. We work with a number of stakeholders around the country in all of these areas. The first is increasing and working on training the workforce. We need to have both health professionals and trained lay people who can deliver this intervention.

The next is the Recognition Program, which assures quality and allows the collection of data so that we can all see how well we're doing. CDC runs and manages the Recognition Program and works with partners to set the national standards for these programs. That Recognition Program is free of charge, and it provides technical assistance to groups all over the country for implementing this program.

The third is the actual intervention sites themselves, and in a moment, I'll show you a map of that work. But this is exciting, there these programs are going on all over the country in all kinds of places. You can think of a place; a program may be going on there. If it's not, it should be. This is a chance for us to be getting to where people live and work and play and worship. And we are working with a variety of partners, everyone from community organizations; faith-based groups; health insurance; health plans; employers; state, federal, local government; and academia. This is really our chance to organize and put a full-court press on getting the science that we know works into people's hands and change the trajectory and course of this disease.

Finally, the third one is really health marketing. You can have a program, but if people don't know about it and don't use it, it doesn't matter how effective the program is. So we're working with a variety of partners, including those like AMA and others to help get more physicians referring to the program and more of people at high risk who have prediabetes participating in the program.

This map shows sites for the in-person programs around the country. We need many more sites that deliver effective programs and become part of the National Diabetes Prevention Program by achieving CDC recognition. I'm happy to say that we will soon be adding the virtual delivery of programs, as the standards for this are just under revision now and should become live in 2014, so we'll now be able to have programs delivered on the Web, via television, and other forms of virtual delivery.

So let me spend just a moment summing up. The number of and health impact from diabetes-related complications, including kidney complications, have declined substantially. New cases of diagnosed diabetes have increased over two decades, but there are signs that the rate of increase is slowing. Preventing Type 2 diabetes is critical to achieving this and is an important step to preventing kidney disease.

We must make continued improvements in preventing diabetes and its complications. Strong community lifestyle programs are needed for high-risk individuals and healthy community environments to reduce risk in the population as a whole. We're really happy that the work we're being able to do with many around the country is making a difference. We all have a lot more to do, and we look forward to those continued partnerships with all of you.

DR. JONES: Thank you, Dr. Albright, and thank you for highlighting the importance of collaboration. And particularly, the presentations thus far have really highlighted the complimentary collaborative work done by two major federal agencies. So this is a very, very powerful material today.

But what difference does it make at the community level? And that's always the most exciting part of these Healthy People 2020 reviews, is to hear how some of the work we're doing at the federal level is actually translating, being carried out and the difference that it's making at the community level. So let me turn then to Karen Wauchope, who is the manager of Clinical Community Programs for EmblemHealth.

Ms. Wauchope?

Presentation - Karen Wauchope

MS. WAUCHOPE: Thank you very much for inviting EmblemHealth to share our story about implementing the National Diabetes Prevention Program. So you have heard from the experts about the prevalence and prediabetes. Now I'm going to give you a description of one model of implementing the national DPP in a real-world translation. I will be sharing with you some of our successes and also some of our challenges.

So let me introduce you to EmblemHealth, New York State's largest health plan. Located in New York City, we cover approximately 3.4 million New Yorkers. Being close to where our members live and work gives us a better understanding of their healthcare needs. Our member population includes all lines of business.

EmblemHealth is also affiliated with a 450-plus multi-specialty physician practice. There are 39 New York City locations called AdvantageCare Physicians. This partnership gives us many levels of integration, collaboration, and innovation. Once such innovation, our Neighborhood Care, was borne out of the desire of our organization to find ways to reach our members in the communities they live in because we believe that each community has its own individual characteristics and challenges.

EmblemHealth Neighborhood Care is a unique approach to solving the challenges of health care. We are bringing our resources, our care teams, comprising nurses, social workers, pharmacists, navigators, a customer service team, and a community liaison to the communities we serve. Providing patient education, navigation, and care coordination, we augment the care management of our providers and lessen their administrative burden. Our goal is to help people navigate the complex healthcare system and improve access to health care. This community-based model is open to both members and non-members. As you can see from the slide, Neighborhood Care is an inviting place for people to feel comfortable.

In researching where to locate our Neighborhood Care, we conducted an analysis to determine areas of high need. What you are seeing in this slide is an analysis of a composite of quality metrics. The metrics included a series of diabetes outcomes and preventive care process metrics. The dark areas on the map represent regions with the lowest quality scores. The dark regions include Upper Manhattan and parts of Queens and Brooklyn. In Harlem, where we have one Neighborhood Care location, about 31 percent of adults in East Harlem and 27 percent in Central Harlem are obese. In contrast, the citywide obesity rate is 22 percent. About 13 percent of adults in East Harlem and 12 percent in Central Harlem have diabetes compared with 9 percent citywide.

As we now know, there are 86 million American adults with prediabetes. The socioeconomic impact is staggering. Our population health management strategies are moving towards prevention and improved access to care. We have many members residing in communities that are not accessing care, and EmblemHealth's Neighborhood Care is located in these communities that have the highest prevalence of obesity and diabetes in New York City.

In collaboration with American health insurance plans, EmblemHealth was awarded a CDC grant to offer this yearlong, evidence-based program. Our Neighborhood Care in Harlem and Cambria Heights, located adjacent to our AdvantageCare Physicians' offices were perfect locations to offer the National DPP. First, we guaranteed a large enough space to offer the program for an entire year, and as mentioned, the population of these communities is at high risk of developing diabetes. We could also leverage our providers as our champions. We are of the belief and the hypothesis that patients respond to their physician recommendation.

So let me explain our model. We know that engagement is not a one-size-fits-all and is very complicated. We decided to test out a high-touch model that allowed us to own the patient-customer experience. We decided to deliver the program ourselves with one full-time coordinator and one

full-time lifestyle coach solely dedicated to each Neighborhood Care. We leveraged a physician champion at our AdvantageCare group and engaged EmblemHealth's marketing and communications department. Reports were generated from the physician's EMR in identifying eligible participants based on a hemoglobin A1c and BMI.

The physicians received information sessions regarding the National DPP from the team, and they reviewed their specific patient list. Outreach to members through a mailing and a follow-up phone call from the lifestyle coach allowed us to use our high-touch approach. In addition, because of our co-location to the physician practices, we have direct physician referral to the program and direct referrals from our Neighborhood Care teams. Our strategy was to leverage existing infrastructure and obtain support from across the EmblemHealth organization, where we present a consistent message and have the support of our leaders. We feel it is imperative to be culturally competent and that the right people would make this work.

As you can see from this table, we collect many different metrics. In addition to the required metric collection by the CDC, we also collect the hemoglobin A1c and blood pressure at week 1, 16, and last post-core class, in addition to the weekly weight. These are the data I will be reviewing. To date, we have 18 cohorts that have been implemented in the past 14 months. There have been six completed cohorts completing the year-long program. We enrolled 270 managers and engaged 203 members. That's a 75 percent engagement rate.

This slide shows the demographic makeup of the 18 cohorts. The far-left slide shows that 84 percent of the classes were overwhelmingly made up of females with only 16 percent male representation. The middle pie graph shows that 9 percent of the class participants identified as Hispanic, 80 percent non-Hispanic, and 15 percent no response. The far-right slide shows that participant race was overwhelmingly African American at 84 percent.

The following slides will report on the results of hemoglobin A1c, weight, and blood pressure from the participants who completed the program. From the 48 participants who have completed the program to date, 75 percent have decreased or maintained their hemoglobin A1c level, 36 participants. Twenty-five percent or 12 participants increased their A1c levels.

This slide shows a closer look at the hemoglobin A1c results and how they changed over time. The bar on the right represents 79 percent, or 38 of the 48 participants, who started off as prediabetic. Of those starting with a prediabetic hemoglobin A1c, 66 percent, or 25 of the 38, stayed prediabetic, while 32 percent, 12 of the 38, became normal. One person, or 3 percent, became diabetic. This person started with a hemoglobin A1c of 6.3 and ended with a hemoglobin A1c of 6.5. The bar on the left represents the 21 percent, or 10 of the 48 participants, who started the program overweight but with a normal hemoglobin A1c. Of this group, 50 percent maintained their normal hemoglobin A1c, and 50 percent became prediabetic.

As you see in this slide, we have a few individuals who gained some weight, but the majority, 75 percent, had an average weight loss of 4.1 percent of body weight. Here we see 42 percent

reached the 5 percent goal, and some of those did very well with 4 participants, or 12 percent, losing between 13 to 16 percent of baseline weight.

This slide shows that at the first class, 10 of the 48 participants had a blood pressure of greater than or equal to 140/90. Of those 10, 40 percent decreased both their systolic and diastolic blood pressure to less than 140/90.

So here is a summary of our preliminary results of the first six completed cohorts: 75 percent engagement rate; 75 percent of participants decreased their hemoglobin A1c levels; 32 percent of prediabetics changed to normal, below 5.7; 75 percent of the participants lost or maintained weight; 42 percent lost 5 percent or more of their baseline weight; and 40 percent of the 10 participants with abnormal blood pressure improved both their systolic and diastolic blood pressure.

We have identified some challenges also. There seems to be a lack of some urgency among some healthcare providers. We encountered physicians who stated that they did not diagnose prediabetes until their patient's hemoglobin A1c was 6 or greater or they did not want to worry their patients. Our physicians need to be educated about the value of risk reduction of the disease impact, but they also need to know that there is support and that there are programs available to help their patients before they develop diabetes and where these programs are located.

Heighten awareness in both the medical community as well as the public sector is needed. And we need to address the many differences among all people and how they learn. At EmblemHealth, we noted in our statistics our engagement of males is poor. We are addressing this by having a Spanish-speaking male trained as a lifestyle coach to give the classes. We are hoping for an increase in male participation by having a male lifestyle coach. And other platforms need to be tested to see what works for young families and the homebound, who may not have the time and ability to attend a class in person. Identifying and addressing participant barriers is essential for success.

We have learned some things that may not have been evident initially. As an organization, EmblemHealth has traditionally focused on disease. We are pushing the pendulum the other way to prevent disease development. We are being proactive instead of reactive. But in order for a program like this to be successful, resources have to be dedicated. Involvement from many different departments is necessary. Based on participant feedback, physician support is critical. Patients listen to their physicians. Our participants reported they came to the program and completed the program based on their physician recommendation. And we need to market these programs to heighten awareness among all clinical providers and potential participants.

This slide documents some of our testimonials of our DPP participants. And I think the last testimonial speaks to the high-touch approach of our lifestyle coaches.

This gentleman in this photo lost 38 pounds and reduced his BMI from 30 to 24.6, which is truly a success. And our first graduating class in May 2014, there were some very powerful comments

made at that graduating class from the participants, demonstrating the importance of this type of program.

If you'd like to learn more about EmblemHealth or EmblemHealth Neighborhood Care, please visit our website. That completes my presentation. Thank you so very much for giving me the opportunity to explain our model of this wonderful program.

DR. JONES: Thank you, Ms. Wauchope, and thank you for presenting very exciting results, and continued best wishes to you and your program participants.

So now let me turn -- first of all, thank all the presenters for joining us today. And let me turn the review now over to Dr. Don Wright, who's the Deputy Assistant Secretary for Disease Prevention and Health Promotion so he can facilitate the roundtable discussion and the questions and answers.

Questions and Answers - Roundtable Discussion

DR. WRIGHT: Thank you, Dr. Jones, and a big thank you to all our presenters for joining us today. I'd like to remind the audience that we also have Dr. Adriana Hung, who is the nephrologist and medical director of Dialysis at the National VA.

At this time, I'd like to remind the viewing audience to submit your questions through the Q&A feature on the right-hand side of the screen. While you do that, I'll also mention to anyone seeking CEUs or CMEs that you will receive a survey by e-mail. You must complete the survey for credit. For all of our viewers today, a survey will appear on the right-hand panel of the screen. Your feedback is important to us, and it allows us to improve our webinars in the future. Please take some time to fill out that questionnaire.

We already have a number of questions that have been submitted. The first question is for Shari Ling actually with CMS. On behalf of CMS, what can patients do to achieve greater health outcomes?

(No response.)

DR. WRIGHT: We'll come back to Shari. We have a question for Dr. Albright. Can you please talk more about the relationship between diabetes and income?

DR. ALBRIGHT: Sure. There is certainly a relationship in a few ways. It's demonstrated in a few ways. We often see -- we do see higher prevalence of diabetes in areas of the country that have lower income or communities that have more challenges. So it could be due to a number of reasons. There can be the fact that people with lower income are not getting the healthcare services that they need. They may not be able to access them as easily because of transportation issues. Once they have the disease, they may have challenges getting access to the necessary tools and supplies because diabetes is a self-managed disease, and you need to learn to live with it, and you need to be able to access the tools to care for yourself.

It can also be that the environments in which people are living that contribute to diabetes, where there are unsafe places, where they can't be very physically active. They may have difficulty accessing healthy food choices. The harder it is to do those things, the more barriers and challenges you have to adopting a healthy lifestyle.

DR. JONES: Thank you, Dr. Albright.

Ms. Wauchope, there's a question from one of our listeners. How did EmblemHealth maintain engagement? Did participants receive an incentive for participation?

MS. WAUCHOPE: Good question. You know, engagement is such a difficult problem for most programs. I think that for some of the participants that had difficulty, our coaches would sit down with them on a one-by-one basis. So if they identified a barrier or they weren't coming back to class, they actually gave them phone calls to show their interest, to find out what was going on, invite them in to make up the class, as I said, on a one-on-one. But they made it convenient for them, so they would see them right before class. But they used motivational interviewing techniques also to actually get to where that person was in terms of readiness to change, and then they made a more tailored approach for helping that person be able to be successful.

DR. WRIGHT: Thank you, Ms. Wauchope.

I'm going to send the next question to Paul Eggers, who's another subject matter expert from NIDDK. Many of the kidney disease slides refer to USRDS. What exactly is that?

DR. EGGERS: USRDS stands for the United States Renal Data System. It is a project run by the National Institutes of Health in conjunction with the Centers for Medicare and Medicaid Services, and it tracks all persons in the United States with end-stage renal disease and a sample of people with chronic kidney disease for the purposes of determining trends and treatment and outcomes in that population.

DR. WRIGHT: Thanks, Dr. Eggers.

Dr. Hung, we have a question for you. What is the VA doing to help meet the goals of the Healthy People 2020 in their particular centers? How do they Healthy People 2020 objectives match up with your center's long-term strategies and outcomes?

DR. HUNG: Well, the VA long-term strategies are really aligned with those of the Healthy People 2020 objectives. There are several important initiatives. One of them, for example, the VA had developed clinical practice guidelines for the primary care provider, which is kept updated. And we have been able to verify the impact that that has. For example, we know that more than 75 percent of the people since 2007 are in ACE and ARBs.

DR. LING: Hello? Can you hear me?

DR. HUNG: Yes? Hello? Hello? Can you hear me?

DR. WRIGHT: Dr. Ling, this is Dr. Wright. Dr. Ling is actually the deputy chief medical officer at CMS.

Shari, there was a question for you earlier. On behalf of CMS, what can patients do to achieve greater health outcomes?

DR. LING: Thank you. Thank you for the question. As you know, CMS is really committed to achieving the three-part aim that includes better care, lower costs for improvement, and also healthier populations. And that's what really well aligns with all that you've heard about today. As far as what people can do to achieve healthier outcomes, it is something that has been referred to in Dr. Albright's talk and in the conversations thus far, and that is being an active participant in your care.

Now, that comes in two parts. One is to be an active part in the health care that you receive through your healthcare providers, knowing what services are available to you and utilizing those services to the maximum ability that you can. That requires engagement with your healthcare provider in a conversation about what are your goals of care and how do you achieve them.

In addition, though, some of what's been spoken about today, including adopting and living through health behaviors, matters tremendously. So I think it's a two-part solution, both of which require that you be an active participant in your own care and in your own health care.

DR. WRIGHT: Thank you, Dr. Ling. And thanks for sharing the CMS perspective on this particular issue.

At this time, I'm going to turn to one of our colleagues at the CDC, Ed Gregg. There's a question here. Is the flattening of the diabetes incidence trends real? And if so, what explains it?

DR. GREGG: Well, we hope that that is real. Excuse me. I don't know if you heard me. We certainly hope that that flattening is real. And it is true that over three years, we have not seen an increase. However, with chronic disease epidemics like diabetes, it's really important that we take a longer term view. We have to look over more years. And we also have to look from different aspects and different parts of the population, as well as different data sources. And when we've taken a closer look at this data, we have seen that there are large subgroups of the population where the rates are continuing to increase, such as non-Hispanic blacks, as well as this flattening seems to be driven by the people of the highest education.

So we feel that we still have a long way to go here before we can say that this flattening -- before we can say we've won this, essentially.

DR. JONES: Thank you very much.

Dr. Albright, here's a question for you from one of our participants. Could increases in diabetes incidence also mean we're doing a better job in getting people screened than we have in the past?

DR. ALBRIGHT: Yes, it certainly can mean that we are doing a better job of screening. But I think the thing we have to remember, you may have heard in the data that still the percentage of people who remain undiagnosed is about the same. So that would indicate that it isn't just that we're identifying more people. We certainly hope to see that number go down in the future. We want to certainly see more people getting diagnosed, but the increase is too great to be explained by only greater diagnosis.

DR. WRIGHT: Thank you, Dr. Albright.

Ms. Wauchope, another implementation question from someone. Is EmblemHealth going to sustain this program after the grant period has expired? Great question.

MS. WAUCHOPE: Yes, a great question. We're actively building a dossier to evaluate at this time a return on investment for the program. That's one of the reasons why we're collecting these other biometrics such as blood pressure, A1c, and all the quality of life indicators that you saw on that one chart, that we are collecting. And we're also looking to see how we can evaluate and follow our cohort longitudinally to see if weight loss and the diabetes status change over time. And we're looking at this status to really contribute to our economic model assessment that we present.

In addition, we're also looking at rolling this program out to our employers very soon. And our assumption is that if the employers are seeing the benefit, then they, too, will pay for this program as a benefit.

DR. WRIGHT: Thank you, Ms. Wauchope.

Now a question for Dr. Narva of NIH. I noticed on the ESRD incidence slide that rates have gone down significantly for American Indians. How did that happen?

DR. NARVA: Well, the American Indian population could be thought of as a sentinel population for this epidemic of diabetes and its complications. There was virtually no diabetes among American Indians prior to World War II. Following lifestyle changes, there were growing rates of obesity, followed by diabetes, followed after a lag time by diabetic complications. And in fact, the rates of ESRD among American Indians, especially in the southwest, were dramatically higher than any other racial or ethnic group in the U.S.

The response by the Indian Health Service really reflected a systematic comprehensive approach. And although the Indian Health Service is not an over-resourced agency, the coherence of their approach, the public health approach and the systematic way they address the problem, has really resulted in significant improvement. The rates of Indian people with diabetes developing ESRD has decreased by about 30 percent over the last couple of decades. And in fact, the rates have gone from four times the white population to just twice.

DR. WRIGHT: Very interesting. Thank you, Dr. Narva.

Dr. Ling, we have another question for you. Where can consumers get more information on treatment and care?

DR. LING: Hi. Thank you, Dr. Wright. Thanks for the question. Probably the best comprehensive source that one can refer to on the internet would be the www.medicare.gov website. That is where all services and the extent to which these services and also treatments for diabetic screening and management are posted. And it is a good source to be able to also check for details that you would need to assess in reaching out to your insurance companies and programs because there are some differences in coverage policies, depending on which type of insurance and which type of program. We've tried our best to summarize what the coverage is from the Medicare perspective on the www.medicare.gov website.

DR. WRIGHT: Thank you, Dr. Ling.

I'm going to send this question to CDC. Is screening for chronic kidney disease in the general population a useful strategy?

DR. WILLIAMS: Hello. My name is Desmond Williams. I'm from the CDC. I'll take that question. We've done a number of studies examining that issue about whether or not screening of the general population is a cost-effective method. And what we've found, using two different methods, is that screening for chronic kidney disease of the general population is not cost effective. However, screening in high-risk groups, such as those with diabetes, those with hypertension, and in those over 60 years is recommended and cost effective.

DR. WRIGHT: Thank you very much for contributing to the discussion. Now, just a general question for Dr. Narva. Certainly, there are economic considerations as it relates to end-stage renal disease. What is the cost of dialysis?

UNIDENTIFIED MALE SPEAKER: The average cost of all services -- not just dialysis, but all of the Medicare covered services for a dialysis patient is roughly \$85,000 a year.

DR. WRIGHT: Thank you for that perspective.

Dr. Albright, a question for you. What has caused or perhaps contributed to the improvements seen in diabetic complications?

DR. ALBRIGHT: We would point to a number of things. Certainly the fact that the treatment has improved over time. We have more medication, more devices, more tools, greater emphasis on diabetes self-management. We have to be aware, though, that along with those advances, diabetes is often like walking a tightrope. You're trying to prevent yourself from having low blood sugars if you're on medications that can drop your blood sugar, and of course you're trying to prevent those

high blood sugars, which we know contribute to the blindness, amputation, kidney failure, and the other complications.

So it is really a combination of better medications, more medications, a tightening up of the treatments, and also attention to self-management. But we have, again, more room to grow, more opportunities to improve that treatment for sure.

DR. WRIGHT: Thank you, Dr. Albright.

Dr. Hung, another question for you. Data drives progress. Are there data challenges within your topic area? Are data on health disparities also available?

DR. HUNG: Well, we have created a comprehensive kidney registry, which is helping us to measure all the different performance measures. And what we have identified that is a challenge is having people measure albuminuria. So that's one of the areas that we need to continue to improve and promote. Health disparities within the VA systems are probably less noticeable than outside the VA system because it's a system where everybody is eligible for care.

DR. WRIGHT: Thank you, Dr. Hung.

Ms. Wauchope, another implementation question. There's a great deal of interest to participants. What is the cost for a community organization to run the DPP? Is there any push to have this covered by insurance?

MS. WAUCHOPE: Great question. I can say at this time, I have not done the analysis in terms of how we have implemented the program and the cost that it would be to a member outside of EmblemHealth, so I can't really answer that question honestly. The push is to have insurance companies provide this as a benefit. It certainly -- as I mentioned in the presentation, we've always been disease focused, and now we're really trying to go the other direction to prevention of disease that has such economic and quality of life impact on individuals.

So we're really pushing for that. We're really trying to scale the program and show that this program really does what it says it does, which is prevent diabetes.

DR. JONES: Thank you. Dr. Albright, would you like to add to that answer?

DR. ALBRIGHT: Sure. We can add to that. That is a major focus of the work that CDC is doing with stakeholders through the National Diabetes Prevention Program, and that's why that kind of structure of bringing us all together is so critical. There are now about 10 health plans who cover this intervention in various parts of the country. No one is covering it in every part of their market area, but there are locations. And we are continuing to work diligently to increase that coverage. It's critical for sustainability and long-term implementation of the program.

DR. WRIGHT: Thank you, Dr. Albright.

Another question for Dr. Narva from NIH, similar to an earlier question. Could you please address population-specific causes of chronic kidney disease experienced by the Native American and American Indian communities, and how to overcome those barriers?

DR. NARVA: Sure. The vast majority of Indian people with ESRD have kidney disease due to diabetes. And even people who have kidney disease from other causes, such as glomerulonephritis, are very likely to have diabetes as a comorbid condition. I think what's been shown effective and is an important lesson to the kidney community outside -- throughout the country rather is to incorporate population-based efforts in kidney disease through existing diabetes care delivery systems. And kidney-specific programs tend not to be as effective.

Since most healthcare systems, as you've heard, have diabetes treatment programs, the best approach and most cost effective is to incorporate enhanced attention to kidney complications within the existing diabetes care delivery system. And that's what Indian Health Service has done, and I think that's a reason why they've been successful.

DR. WRIGHT: Thank you, Dr. Narva.

Ms. Wauchope, another implementation question. What type of metrics feedback do you provide to participants as they walk through these lifestyle changes?

MS. WAUCHOPE: They are provided with their results of their blood pressure, their hemoglobin A1c results, and their weight. When they have an abnormality in one of these metrics, we are in contact -- and the participant knows this also -- we're in contact with their primary care physician to allow them to have the option of being seen and providing further treatment. So anyone who had an abnormal blood pressure, we will be, as I mentioned, in touch with their physician to discuss what treatment action the physician would like to take, scheduling appointments, rechecking the blood pressure in another week, those kind of treatment options provided by the physician.

When they have a hemoglobin A1c that is 6.5 or above, we actually schedule an appointment to be seen by their physician immediately. So they are provided with the feedback of how they are doing on a weekly basis.

One of the things these participants do, they do tracking in a small little book. And our lifestyle coaches on a weekly basis review those trackers and provide comments to the individual, positive suggestions, looking at how they might have looked differently at a meal. So they're receiving feedback also in a written matter weekly.

DR. WRIGHT: Thank you, Ms. Wauchope.

Dr. Albright, another question for you. How is the National Diabetes Prevention Program being delivered, and by whom?

DR. ALBRIGHT: Happily to say the National DPP is being delivered by a variety of people and a variety of places. The evidence is really quite clear that this intervention can be delivered by health professionals and trained lay people. And that's critical because we need an adequate workforce to deliver it, and all are necessary. This really is an all hands on deck.

As I mentioned earlier, it can be delivered in a variety of places. It is being delivered in some healthcare locations. It's being delivered in YMCAs. It's being delivered in community organizations like Center for African American Health. It's being delivered in churches. It's actually being delivered in the board room of a Ford dealership, so anywhere people can congregate, where they're able to go.

As I indicated, virtual delivery is already happening. It will soon become part of the national standards for the program so that we can assure quality of those because just as it can be delivered on the internet doesn't mean it's effective. We needed to test it and make sure it could be effective. And the evidence is compelling enough to have it join the recognition program. So go to our website, cdc.gov/diabetes/prevention, and you'll find all of the recognized sites listed on that website.

DR. WRIGHT: Thank you, Dr. Albright.

Dr. Hung, another question for you. What can be done to encourage collaboration on the community level to achieve the Healthy People 2020 objective?

DR. HUNG: I think it will be very important to engage community-based organizations, which you've made some comments during the presentations, to promote preventive self-management strategies. Also, it will be great to establish healthy navigator networks, hotlines to improve the health literacy of our patients. I think those will be two great approaches.

DR. WRIGHT: Thank you, Dr. Hung.

Dr. Albright, another question from one of our listeners. Where can we find a list of those insurance companies that are covering DPP?

DR. ALBRIGHT: That's a great question. I hope at some point we will be able to list them on a website so they're more easy to find. At this point, the recommendation is for you to contact your insurance company and find out if they do provide it because, as I indicated -- for example, it is covered by some parts of United Health Care around the country. It's covered by Florida Blue Cross/Blue Shield. Some of the regional plans like Regence, Medica. So there are places all around the country. It's just that they are rolling this out -- Kaiser is testing it in some places, as is the VA and others.

So it's in this growth and rollout phase, and so that's changing on a very regular basis. It would be most effective probably for you to certainly contact your insurance provider, or you can certainly reach out to us at CDC, and we will do what we can to help you identify those places.

DR. WRIGHT: Great. Thanks, Dr. Albright.

Another question for Ms. Wauchope. The original DPP was not done in a group setting. Why do you think the group setting is better?

MS. WAUCHOPE: Great question. I think the group setting has several advantages. First, it allows one to scale the DPP and actually be able to offer the program to the 86 million individuals with prediabetes. Individual sessions would not be feasible on this scale. Second, I think the group classes provide a support system to our participants. It allows them to learn from others many more strategy techniques in changing their lifestyle. And I think this really has aided in terms of retention of participants. The support they receive from each other, it's just indescribable. It's like a support system every week happening to them.

As we all know, trying to change a behavior can be very difficult long-term. If you go to any class, they're always going back and forth, keeping each other on target. So it may be support, discussing a strategy of how to solve a problem, but it's also, well, what are you doing? Have you been tracking? So they really give feedback to each other.

DR. WRIGHT: Thank you, Ms. Wauchope.

I'm going to send the next question to Rebecca Hines for NCHS. We talked a lot about disparities, and this listener asks: are income disparities accounted for in the ethnic disparity data?

DR. HINES: So the way the Healthy People objective data are reported is they're separate. So we show the population by income and their rates and incidence, and then we show by ethnicity and race.

So I'm going to punt this to CDC Atlanta. They've drilled down a little bit more beyond the Healthy People national objectives.

DR. GREGG: Sure. As Rebecca just described, we do see differences by race ethnicity, but we also see differences by income. And we think that a large part of that race ethnic disparity is explained. Probably not all, but a large part is probably explained by income. And again, to repeat an earlier point, our biggest factor that explains our differences in counties across the country really is the degree to which a county is in poverty and the degree to which it's been in persistent poverty. So that really is a big factor and a place where we need to target our effort.

DR. WRIGHT: Thank you, Mr. Gregg.

I think we have time for one more question. We have another implementation question, Ms. Wauchope, for you. How can your lifestyle coaches work with class members who are not as committed or engaged to help them become more successful in tracking their weight, their food, their physical activity, et cetera?

MS. WAUCHOPE: There are all kinds of barriers that can hinder a participant's success with the program. I think I had mentioned prior that our lifestyle coaches, actually, if someone is not engaging in the program -- if they are not losing weight, if they're not actually exercising at the point where they should be, we will bring them back in and sit with them individually, and using the motivational interviewing techniques that they've learned, try to understand where the participant is at in terms of their ability to change, and they will tailor their approach to that person.

So there may be different barriers that Neighborhood Care is able to assist with also. As mentioned our Neighborhood Care -- our program is being delivered in our Neighborhood Care room. And so this provides us easy access to the social worker, to our nurses, to our pharmacists. And we have actually had to do this on several occasions, where we had an individual who was not losing weight, and our lifestyle coach sat the individual down to find out that she had absolutely no money to buy food, and all she was doing was eating beans.

So she approached the site manager with the problem, with the participant's permission, and we were able to have benefits for -- meals put in place, pantries located. So she started hooking up with our social worker and other disciplines in Neighborhood Care to try to solve some of those issues that were getting in the way of her being successful.

That's just one incident. We also had an individual who had high blood pressure and was able to have a brown bag by the Neighborhood Care pharmacist and be able to walk her through how she could use her benefit to afford her medication. So there are several instances that that's taken place, where we've been able to be useful.

Closing Remarks

DR. JONES: Dr. Wright, that sounds like that's all the questions we have time for today. And again, presenters, those of you who've joined us on the roundtable, thank you so much for sharing your expertise to our viewers. At one point we had almost 700. I hope that you'll join us for our next progress review on December 5th, and we'll be featuring the Environmental Health and Tobacco Use topic areas.

Finally, none of these Healthy People progress reviews happened in isolation. It's not a one person show. And you can see here the many, many people across CDC, NIH, the Office of the Secretary, ODPHP, where folks have collaborated and made this happen, made this come together today. So I can't thank the team enough for updating the data, pulling the information together, and really making this a very lively and productive discussion today.

Just remember that together we can make Healthy People come alive for all Americans, and I can't thank you enough for all you do every day. Thank you all very much. This concludes our webinar.

(Whereupon, the webinar was concluded.)