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novo nordisk bluesheet
QUARTERLY PERSPECTIVES ON DIABETES AND CHRONIC DISEASES

DISPARITY IN CARE

Disparities in health care are often a result of environmental conditions, social and economic factors, insufficient health resources and poor disease management. Today, Type 2 diabetes disproportionately affects people of certain racial and ethnic groups particularly in Native American, African American and Hispanic communities. This fourth issue of the Novo Nordisk BlueSheet will explore disparities in care among these populations.

Expert Q&A: An Interview with Dr. Donald Warne

Director, Office of Native American Health at Sanford Health

Below is a one-on-one discussion with Donald Warne, MD, MPH, Director of the Office of Native American Health at Sanford Health, the largest hospital in the Dakotas.

Dr. Warne is a Certified Diabetes Educator (CDE) and he is a Diplomate of both the American Board of Family Practice and the American Board of Medical Acupuncture. He has completed fellowships in Alternative Medicine from the Arizona Center for Health and Medicine and in Minority Health Policy from Harvard Medical School.

Dr. Warne's work experience includes several years as a primary care and integrative medicine physician with the Gila River Health Care Corporation in Sacaton, AZ and three years as a staff clinician with the National Institutes of Health in Phoenix where he conducted diabetes research and developed diabetes education and prevention programs in partnership with tribes.

Q How was the new Office of Native American Health at the Sanford Health Network created? Who will it serve?

A In my previous role as the director of the Aberdeen Area Tribal Chairmen's Health Board, I worked with Sanford Health Network and other health systems to improve the coordination of services and programs among Native Americans and the private sector. Indian Health Services (IHS), a division of the U.S. Department of Health and Human Services, runs hospitals and clinics on most reservations, but lack of funding for the IHS created the need for additional health care services and support for Native Americans across the Northern Plains. Of all of the health systems, Sanford had already been doing the most in terms of outreach to tribes for clinical services, research and educational opportunities. Last year, we decided

to create an office to help serve Native Americans living on reservations and in August we opened the Office of Native American Health at Sanford.

The office serves nearly 300,000 Native Americans in 28 tribes within Sanford's coverage region, which spans South Dakota, North Dakota, Minnesota, Iowa, and Nebraska.

Q What is the mission of the new Office of Native American Health?

A Pre-diabetes and diabetes occur at a much higher rate in Native American communities, particularly in the Northern Plains. At The Office of Native American Health, we delve deeper into health issues and develop new initiatives that help address health disparities between Native Americans and other residents. The new office will help address health issues like diabetes and kidney disease, which occur at high rates among Native Americans.

Q Can you share how the Office of Native American Health plans to serve Native Americans in the region who are living with diabetes?

A The Office of Native American Health will work with Native American tribes individually to assess their specific needs and improve their system of care. We will do so by coordinating clinical services and conducting more reservation clinical outreach. For example, some reservations have thriving diabetes education programs while others have had difficulty hiring and retaining certified diabetes educators. In these communities, we need to increase the number of certified diabetes educators available to those living with diabetes. And overall, we must help tribal diabetes programs gain recognition with the American Diabetes Association and the state to improve third-party billing opportunities ultimately making the diabetes programs sustainable.

The office is also committed to developing tertiary prevention efforts in Native American reservations. Currently, we are working with Sanford Health on dialysis programs and cardiology services for Native American patients who are experiencing diabetes complications. In the future, we plan to develop and implement more primary preventative initiatives and health promotion initiatives that address the importance of healthy lifestyles.

Finally, we want to create more educational opportunities for Native Americans. Our partnership with the Sanford University South Dakota School of Medicine will enable more opportunities for Native Americans to enter the health sciences industry, and ultimately, obtain leadership positions in health care that will pave the way for better access to quality care within Native American communities.

Q How will the Office of Native American Health at the Sanford Health Network raise awareness for diabetes funding and support?

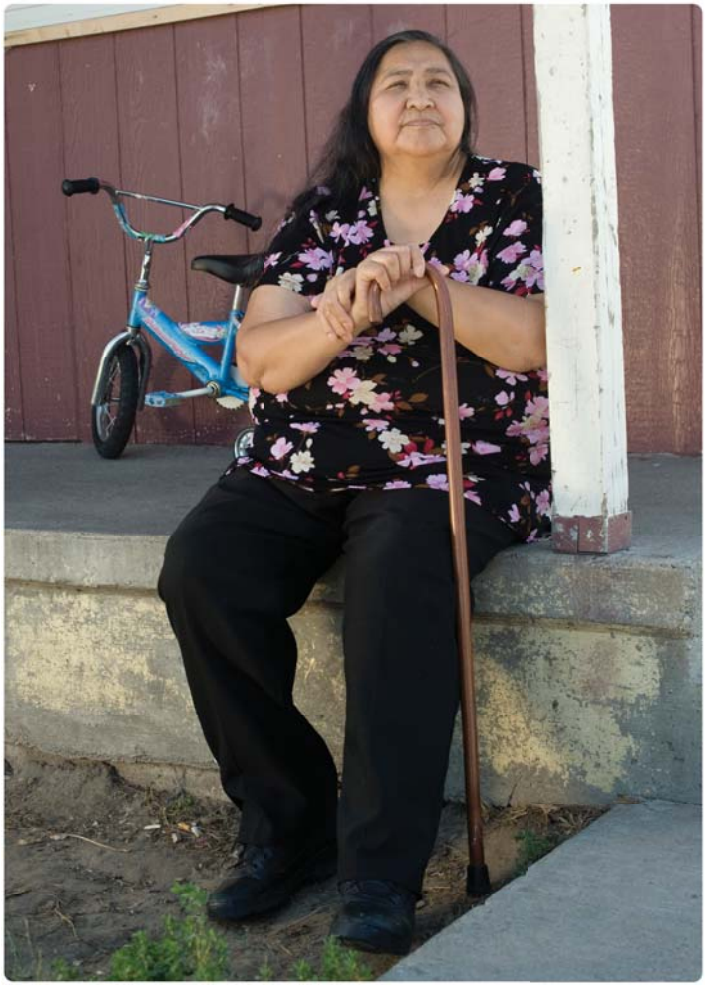
A Today, there is a significant lack of health policy and health services research addressing the impact of IHS funding on health disparity. Chronic underfunding of IHS adds to this disparity, and in fact, that is a health crisis in and of itself. The Office of Native American Health will utilize Sanford's extensive resources and areas of technical expertise to improve health status and reduce disparities among these tribal regions.

We must also take a closer look at access to diabetes medication. Since the most effective medications are often the most expensive, many Native American patients do not have access to such treatments, which would ultimately improve quality of care, prevent complications and maximize secondary prevention. The office is committed to creating the case for the necessary funding to support this effort with IHS and Congress by conducting modified clinical trials to show the cost effectiveness of investing in medications upfront.

Psychological and emotional support is crucial to this process. Education can help patients control their diabetes, but building a strong support system is what will help patients overcome the daily obstacles of living with diabetes. Patients need to do what works for them from finding the right physician, engaging a diabetes educator or counselor and relying on family and friends.

Q What can the industry do as a whole to reduce disparities in care among Native Americans?

A The number one thing we can do in the industry right now is to improve access to newer medications in underserved populations. Today, the most effective treatments and medications are not easily available to the populations that need them the most. By working in partnership with IHS and the tribes, we must ensure access to the highest quality medications. Furthermore, we need customized education materials for the Native American community. Remember, each tribe is different and



faces its own challenges and in the U.S., there are more than 500 Native American tribes. Concepts that are appropriate in one region might not work in another; there, customized, tribal specific materials would be an invaluable resource to this population.

DISPARITY IN DIABETES PREVENTION AND CARE

As one of the fastest growing diseases today, diabetes currently affects approximately 24 million Americans of every race, gender and ethnicity. But some racial and ethnic groups – particularly the Native American, African American, and Hispanic populations - are at a higher risk for developing diabetes due to a variety of genetic and environmental factors that cannot be isolated. Compounding this issue are the unique challenges faced in some communities to obtain proper prevention education and adequate medical care needed for effective diabetes management.

Of all ethnic groups in the United States, Native Americans have the highest per capita incidence of diabetes and perhaps the fewest resources for combating it. The risk of developing diabetes is more than twice as high in Native Americans than in non-Hispanic whites.[1] In fact, prevalence reaches 50 percent in some Native American communities, according to Donald Warne, MD, MPH, Director of the Office of Native American Health at Sanford Health, a major health care provider in the Dakotas.[2] This figure is more than six times the national average.[3]

Dr. Warne also points out that it is not uncommon for grandparents, parents, aunts, uncles and children – all within the same family – to be diagnosed. And the consequences of inadequate diabetes management, such as kidney disease, blindness, and limb amputations – are astronomical among Native Americans. For example, the rate of diabetes-related kidney failure is 3.5 times higher among Native Americans than in the general U.S. population.[4]

Why such a disparity? Primarily, it's an issue of resources and economics. Many Native American communities lack access to diabetes specialists like endocrinologists, cardiologists and dieticians. Furthermore, when primary care doctors provide referrals to outside physicians, coverage is often denied because funding is not available for private sector care. Some Native American communities are so remote there are no general practitioners available, which creates a roadblock for diabetes patients who must rely on weather-dependent

public transportation to travel great distances for simple medical appointments. As a result, appointments are missed and disciplined care – a crucial part of successful diabetes management – deteriorates.

Another cause for this alarming disparity is the lack of access to individualized patient therapies and supplies. Underfunding inhibits caregivers from providing cutting-edge diabetes therapies. As a result, Native Americans are often treated with products that may not be suited to their individual needs. Even basic medical supplies, such as gauze and antibiotic ointments for diabetic wound care, are in short supply. These limited resources mean fewer materials, programs, and professionals trained in effective communication about diabetes treatments and prevention.

But, by in far, the biggest contributor to the diabetes challenges facing Native Americans stem from simple economics. A high percentage of Native Americans live in poverty. Poorer communities are more likely to have unhealthy diets, reduced physical activity, higher rates of obesity, alcoholism, and emotional problems, and lack of access to adequate health education and services – factors that escalate the risks for chronic conditions like diabetes.[5]

Impoverished Native American communities must often rely on extensive governmental aid for even the most rudimentary medical needs and health care is significantly underfunded. The Federal government finances Medicaid at nearly $4000 per person per year and Medicare at more than $7000 per person per year.[6] Yet, Indian Health Services (IHS), the division of U.S. Health and Human Services that focuses specifically on the concerns of Native Americans, is funded at approximately $2000 per person per year.[7] Overall, less than one-half of one percent of government health monies are earmarked for programs to help the beleaguered Native American population.[8]

"We need to change diabetes for everyone, including the underserved patient groups on the health-care periphery," said Per Falk, vice president, Clinical Development, Medical & Regulatory Affairs of Novo Nordisk. "Although Native Americans with diabetes face many of the obstacles endemic to the inner cities, their picture is even more complex due to remote locations, great distances that separate them from providers and mainstream support networks, and a long history of societal neglect. These are people to whom even moderate improvements can have monumental impact."

A Look at Diabetes in African American and Hispanic Communities

The statistics for diabetes are equally staggering in the Hispanic and African American communities. Diabetes is about 1.4 times more prevalent among Hispanics than among non-Hispanic whites[9], and sadly, the prevalence of diabetes among Hispanics is on the rise (see sidebar, "The Impact of Diabetes on Hispanic Americans"). Diabetes is also one of the most serious health problems that the African American community faces today. Compared to the general population, African Americans are disproportionately affected by diabetes.[10] In fact, African American adults are almost twice as likely as non-Hispanic white adults to have been diagnosed with diabetes by a physician.[11]

According to Dr. Carlos Campos, executive director of the Institute for Public Health and Education Research and a member of Novo Nordisk's Multicultural Advisory Board, states, "There are a number of reasons why diabetes is more prevalent among and often poorly controlled in Hispanics. The reasons range from language barriers, poor health literacy, dietary preferences, and of course, genetics."

"Among African Americans, the main reasons are social," according to Dr. Regina Milteer, who practiced pediatrics for more than 20 years in the Washington D.C. area and is now Chief Medical Officer for the

Unison Health Plan of the Capital Area, an United Healthcare Community Plan company. "Hereditary factors come into play, but it's also about lifestyle, food choices and obesity. Many people have limited access to fresh, healthy foods and instead choose less expensive, less healthy options."

The Impact of Diabetes on African Americans

- 3.7 million, or 14.7 percent of all African Americans aged 20 years or older have diabetes[12] in the U.S.
- 25 percent of African Americans between the ages of 65 and 74 have diabetes[12].
- 1 in 4 African American women over 55 years of age has diabetes[12].
- African Americans are almost 50 percent as likely to develop diabetic retinopathy as non-Hispanic whites[12].
- African Americans are 2.6 to 5.6 times as likely to suffer from kidney disease with more than 4,000 new cases of End Stage Renal Disease (ESRD) each year[12].
- In 2006, diabetic African Americans with diabetes were 1.5 times as likely as whites with diabetes to be hospitalized[13].
- In 2006, African Americans were 2.1 times as likely as whites to die from diabetes[14].

The Impact of Diabetes on Hispanic Americans

- Nearly 8 percent of the U.S. Hispanic population, or about 3.7 million people[15,16] have been diagnosed with diabetes[16]. (Data from 2008, age-adjusted)
- The prevalence of diabetes has increased by 25 percent in the past 10 years among all Hispanics[16]. The increase is largely driven by Hispanics age 65 and up[16].
- In 2006, Hispanics were 1.7 times more likely to start treatment for end-stage renal disease related to diabetes, compared to non-Hispanic white men[9].
- In 2006, Hispanics were 1.5 times more likely as non-Hispanic whites to die from diabetes[9].

And there has never been a more critical time for diabetes education and awareness. According to Centers for Disease Control and Prevention (CDC) projections published in Population Health Metrics (October 2010), 21% to 33% of Americans may be living with diabetes by the year 2050 -- compared to 14% in 2010. This projected increase is largely attributable to the aging U.S. population, increasing numbers of members of higher-risk minority groups in the population, and people with diabetes living longer.[17] This analysis suggests that widespread implementation of reasonably effective preventive interventions focused on high-risk subgroups of the population can considerably reduce, but not eliminate, future increases in diabetes prevalence.[17]

According to the U.S. Census Bureau, minorities – roughly one-third of the U.S. population today – are expected to become the majority in 2042.[18] This increase, combined with the diabetes prevalence among some minority groups, is expected to have a significant impact on the economic and societal costs of diabetes in the nation.

As such, the need for research, funding, and federal and state legislation that address the disparity in diabetes prevention, access, and care within minority populations are crucial. By supporting these efforts, we can better understand the cause of health disparities among minority populations and increase the access to treatment and care in at-risk communications, which continue to be affected by diabetes in disproportionate numbers.

Footnotes

1 American Diabetes Association website, "Native American Complications",http://www.diabetes.org/living-with-diabetes/complications/native-americans.html

2 The Lancet, "Diabetes Mellitus in American (Pima) Indians", Bennet, et al, Volume 298, Issue 7716, pp. 125-128, July 17, 1971.

3 Centers for Disease Control press release on 2008 prevalence that states 8 percent of U.S. population has diabetes, June 24, 2008.

4 Indian Health Service Web Site, Fact Sheet, June 2008, http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=resourcesFactSheets_AIANs08

5 Moore, Kelly MD, FAAP. "Youth-Onset Type 2 Diabetes Among American Indians and Alaska Natives." Journal of Public Health Management & Practice September/October 2010 - Volume 16 - Issue 5 - p 388–393.

6,7 Indian Health Service Web Site, "2005 HIS Expenditures Per Capita Compared to Other Federal Health Expenditure Benchmarks." January 2006. http://www.ihs.gov/NonMedicalPrograms/BudgetFormulation/

documents/Per%20Capita%20Hlth%20Expend%20Comparison%20Charts%202-6-2006.pdf

8 U.S. Commission on Civil Rights 2004, Broken Promises: Evaluating the Native American Health Care System, p.87-8.

9 U.S. Department of Health & Human Services Office of Minority Health. "Diabetes and Hispanic Americans." http://minorityhealth.hhs.gov/templates/content.aspx?ID=3324. Accessed on 7/8/10.

10 American Diabetes Association. "African American Programs." Last accessed January 18, 2010. http://www.diabetes.org/in-my-community/programs/african-american-programs/

11 Centers for Disease Control, National Health and Nutrition Examination Survey (NHANES), 2003-2006.

12 American Diabetes Association. "African Americans and Complications." http://www.diabetes.org/living-with-diabetes/complications/african-americans-and-complications.html. Last accessed February 15, 2010.

13 U.S. Department of Health & Human Services Office of Minority Health. "Diabetes and African Americans." http://minorityhealth.hhs.gov/templates/content.aspx?ID=3017. Accessed on 11/8/10.

14 Centers for Disease Control, National Vital Statistics Report. Vol. 57, Num. 14, Table B.

15 U.S. Census Bureau. 2008 Population Estimates. Accessed on 7/8/10.

16 Centers for Disease Control and Prevention, National Center for Health Statistics. "Detailed Data for Diagnosed Diabetes." Accessed on 7/20/10.

17 Population Health Metrics. "Projection of the year 2050 burden of diabetes in the US adult population: dynamic modeling of incidence, mortality, and prediabetes prevalence." Boyle JP. October 22, 2010. doi:10.1186/1478-7954-8-29. http://www.endocrinetoday.com/view.aspx?rid=76914

18 U.S. Census Bureau. "An Older and More Diverse Nation by Midcentury." August 14, 2008. http://www.census.gov/newsroom/releases/archives/population/cb08-123.html

What Novo Nordisk is Doing

Novo Nordisk has a strong heritage of improving existing standards of care for chronic diseases. This commitment extends to people who lack access to treatment, those who face barriers due to inadequate healthcare infrastructures or the high out-of-pocket costs that can be a part of having a progressive, chronic disease.

As a leader in diabetes care, the Company has taken some important steps in opening dialogue and steering valuable resources to individual Native American tribes in various regions of the country over the last several years. The Company has forged a partnership with Sanford Health in South Dakota to explore ways to aid tribes in the Great North to help reverse the alarming diabetes trends among Native Americans, and is pursuing relationships and implementing initiatives to improve the lives of Native Americans with diabetes in other regions of the country.

To stay well-informed and proactive on the issues of concern to their racial and ethnic minority patients, Novo Nordisk formed a Multicultural Advisory Board, comprised of 18 primary care physicians and specialists who focus on the treatment of multicultural patients. The Board meets several times a year to engage in mutually beneficial dialogues about how best to meet the needs of patients.

Novo Nordisk is also committed to raising awareness for diabetes prevention, treatment and care in African American communities. Building relationships with the National Medical Association (NMA) provider network, which represents more than 30,000 African American physicians is just one of the many ways Novo Nordisk is connecting with this high-risk community. The Company provides input on cultural competency training programs and sponsors educational seminars during their national meeting. Last year, Novo Nordisk also sponsored the American Association of Physicians of Indian Origin (AAPI), the largest ethnic medical organization in the United States and represents the interests of more than 50,000 physicians and about 15,000 medical students/residents of Indian heritage in the country.

The focus on educating and informing Hispanic communities about diabetes is also on the rise at Novo Nordisk. In 2010, the Company formed a partnership with Univision, the largest Spanish-language television and radio network in the United States, to sponsor large outdoor festivals aimed at reaching Hispanics. In addition to our partnership with Univision, the Company is undertaking a number of other efforts, including a partnership in Phoenix with the Arizona Latin-American Medical Association (ALMA) to provide education and support to physicians and patients where the Company host meetings and dinners with ALMA members to learn more about the issues they face in treating Hispanic patients.

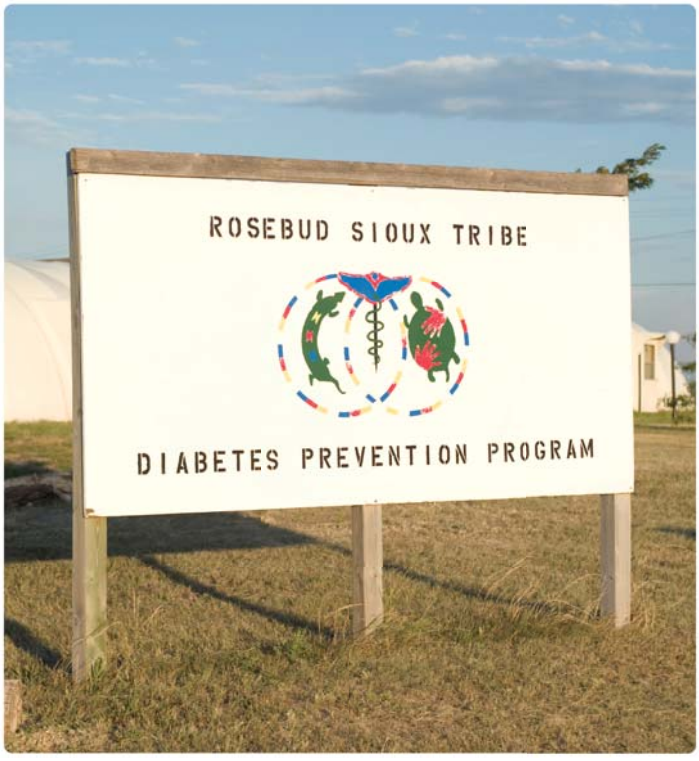
In other parts of the company, Novo Nordisk strives to impact the lives of those at the highest risk of developing diabetes. In the Government Affairs office, the federal and state teams work with legislators to raise awareness and create policies specifically targeted to eliminate the disparity in diabetes prevention, access and care. Additionally, the patient marketing group formed a cross-functional multicultural working team to develop a Companywide strategy to coordinate diabetes outreach efforts to specifically target the communities that need it most.

THE PATIENT PERSPECTIVE:
PATSY LEFT HAND BULL

As a Native American, Patsy Left Hand Bull faced a high risk for diabetes and its complications as well as significant obstacles to proper diagnosis and effective management.

One night in 1998, Patsy had a dream that may have saved her life: Her recently deceased mother came to her bedside and told her to "deal with her miscarriage," which she had suffered seven years earlier and refused to discuss.

"When I lost my baby in '91, the doctor told me that I had 'dissolved' my child by not treating my diabetes," explained Patsy, a 61-year-old mother of nine who lives on the Rosebud reservation in South Dakota. "Seven years later, I decided to take a cue from my dream and speak with a physician for the first time about my loss. He told me the initial doctor was wrong about my miscarriage but right about the importance of managing my diabetes. From that day, I felt both relief and, at the same time, a connection to people who could help me address my disease."



If not for this self-professed spiritual experience, Patsy may never have acknowledged her illness. Even with her valuable first intervention, Patsy still required one more push to truly take charge of her condition: A blood sugar emergency that raised her glucose level above 600. At the moment, she had a decision to make – ignore her disease or learn to manage it as effectively as possible. Patsy returned for her follow-up appointment and began a decade-long effort to gain control of her disease and advocate for prevention and effective treatment within the Native American community.

She has accomplished so much more than that, including going back to school late in life to get a bachelor's degree in social work, with a specialty in chemical dependency. Patsy also organized the Rosebud reservation's first diabetes support group and regularly counsels young people and others on preventive strategies for combating diabetes.

For Patsy Left Hand Bull, it's all very simple and consistent with her personal attitude that has given her the strength to overcome so much:

"It all comes down to choice. For diabetics, we can decide to deal with our disease or live in denial with all the consequences," she said. "And for those on the outside who have valuable experience and resources to contribute, well, they can either ignore the problem or come forward like Novo Nordisk and help us to help ourselves."

GOVERNMENT UPDATE

Advocacy in Action

Novo Nordisk Government Affairs works constantly to educate state and federal policy-makers about the disparity of diabetes in racial and ethnic minority communities and the need to dedicate additional resources and increase funding to combat this epidemic.

Recently, Novo Nordisk worked with allies in Congress and the American Diabetes Association to help secure unanimous passage in the House of Representatives of H.R. 1995, the Diabetes in Minority Communities Evaluation Act. H.R. 1995 directs the Secretary to evaluate diabetes in minority populations in four critical areas: research, surveillance, community interventions, and healthcare workforce issues. This evaluation is critical given recent trends and research showing that 1 in 2 members of minority populations born today will develop diabetes in their lifetimes.

In the U.S. Senate, Novo Nordisk actively worked with Senator Frank R. Lautenberg to include Senate report language that urges NIH to expand, intensify, and support ongoing research and other activities with respect to pre-diabetes and diabetes in minority populations, including research to identify clinical, socioeconomic, geographical, cultural, and organizational factors that contribute to diabetes in such populations.

At the state level, Novo Nordisk has partnered with the Virgin Islands Department of Health to help ease the burden of diabetes. In the USVI, 15% of the 100,000 people living on the islands have diabetes and thousands more are unaware of their pre-diabetes. Because of Novo Nordisk's support, two three-day Diabetes Education and Empowerment Program (DEEP) "Train the Trainers" seminars, utilizing the lay-health model of diabetes management took place. Thirty-seven people earned certification as DEEP trainers and they're now passing their new knowledge on to local communities.

Novo Nordisk's support also helped seven local residents' secure DEEP mini-grants, whereby each person will teach three community-based diabetes-management training classes and report the results. The initiative also includes a multicultural ad campaign about managing diabetes on local radio, TV and print, as well as in movie theaters. The ads feature the voices of a woman and a Hispanic male from the USVI, representing the two local populations at the highest risk for diabetes.

As a testament to Novo Nordisk's reputation among policymakers as a company that cares deeply for its patients, Chris Porter, Director of Government Affairs, was invited to participate on the Health Equity Leadership Commission, a task force created by Congressional Black Caucus health leader Congresswoman Donna Christensen. This task force of select health equity stakeholders is charged with ensuring that the health equity provisions of health care reform are fully funded and implemented as intended.

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