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## **Diabetes and Depression Among American Indian and Alaska Native Elders**

With estimates indicating that 80 percent of people with depression report impairments in their daily functioning (Pratt 2008), individuals with both diabetes and depression face particularly difficult challenges in effectively managing both diseases. In the United States, American Indians and Alaska Natives (AI/ANs) are populations with particularly high rates of individuals who must cope with both of these conditions on a daily basis (Li 2008).

“It can be a vicious cycle,” according to Leonard Poretski, M.D., director of the Friedman Diabetes Institute at Beth Israel Medical Center in New York City (WebMD 2010). “Both diseases have to be addressed at the same time - if control of diabetes is deteriorating, look for depression as a possible cause.”

Among the nation’s population as a whole, older adults are at the highest risk for diabetes, says Paula Trief, Ph.D., a professor at the State University of New York. In the group aged 65-74 years, it is projected that the number of people with diabetes will triple (Trief 2007). In the group aged 75 or older, the number of people with diabetes will increase to five times its present level. Older adults with diabetes, she says, often have multiple medical problems (e.g., physical disabilities and multiple mental and emotional problems) that complicate the illness.

Trief comments that medical providers must be concerned with the mental health of older adults with diabetes, and be willing to screen for and institute management of depression. Yet, primary care providers assess depression in older adults very infrequently. This lack of assessment may be for a number of reasons, including that some primary care providers are not skilled in assessing depression, may not be comfortable addressing depression with their patients, or may believe that depression is a normal response to the emotional and physical

challenges of diabetes. One study by Trief, looking at 389 videotapes of physician interactions with their older patients, found that depression assessments occurred in only 14 percent of visits.

## **DIABETES AMONG AMERICAN INDIANS AND ALASKA NATIVES**

Diabetes and its often disabling complications are among the most serious chronic health problems faced by American Indian elders. Diabetes is twice as common in American Indian and Alaska Native communities as in the general population (15.3 percent compared with 7.3 percent), and it is steadily increasing (NIAMS 2006). Approximately 30 percent of American Indians and Alaska Natives more than 55 years old have been diagnosed with diabetes (NIAMS 2006). According to the Indian Health Service (IHS), about 16.1 percent of AI/ANs aged 20 years and older served by the IHS have diagnosed diabetes (IHS 2012). AI/ANs are 2.8 times as likely to die from diabetes as individuals in the general population (IHS 2011a). In 2009, diabetes was the seventh leading cause of death in the United States, but the fourth leading cause of death among AI/ANs (Kochanek 2011).

### **Understanding the Types of Diabetes (CDC 2011)**

**Type 1 diabetes** was previously called insulin-dependent diabetes mellitus (IDDM) or juvenile-onset diabetes. This form of diabetes usually strikes children and young adults, although disease onset can occur at any age. In adults, type 1 diabetes accounts for approximately 5% of all diagnosed cases of diabetes. Risk factors for type 1 diabetes may be autoimmune, genetic, or environmental.

**Type 2 diabetes** was previously called non-insulin-dependent diabetes mellitus (NIDDM) or adult-onset diabetes. In adults, type 2 diabetes accounts for about 90% to 95% of all diagnosed cases of diabetes. Type 2 diabetes is associated with older age, obesity, family history of diabetes, history of gestational diabetes, impaired glucose metabolism, physical inactivity, and race/ethnicity. African Americans, Hispanic/Latino Americans, American Indians, and some Asian Americans and Native Hawaiians or other Pacific Islanders are at particularly high risk for type 2 diabetes and its complications. Type 2 diabetes in children and adolescents, although still rare, is being diagnosed more frequently among American Indians, African Americans, Hispanic/Latino Americans, and Asians/Pacific Islanders.

**Gestational diabetes** is a form of glucose intolerance diagnosed during pregnancy. Gestational diabetes occurs more frequently among African Americans, Hispanic/Latino Americans, and American Indians. It is also more common among obese women and women with a family history of diabetes.

**Other types of diabetes** result from specific genetic conditions (such as maturity-onset diabetes of youth), surgery, medications, infections, pancreatic disease, and other illnesses. Such types of diabetes account for 1% to 5% of all diagnosed cases.

## **DEPRESSION AMONG NATIVE AMERICANS AND ALASKA NATIVES**

Little is known about depression among AI/ANs given cultural differences in the way they may view or express mental health symptoms. What is known however is that many individuals in these populations live in areas characterized by high rates of alcoholism, crime, youth suicide, poverty, and other factors that place them at high risk for depression and other mental health issues.

According to the National Institute of Mental Health (NIMH), large-scale studies of mental disorders among older American Indians are lacking. In its 2001 report on *Mental Health: Culture, Race, and Ethnicity: A Supplement to Mental Health: A Report of the Surgeon General*, NIMH identified one study that found over 30 percent of older American Indian adults visiting an urban IHS outpatient medical facility reported significant depressive symptoms (NIMH 2001). This rate is higher than most published estimates of the prevalence of depression among older whites with chronic illnesses (9 percent to 31 percent)). In another clinic-based investigation, NIMH said nearly 20 percent of American Indian elders who received primary care reported significant psychiatric symptoms (with rates increasing as a function of age). These findings are consistent with a survey of older, community-dwelling, urban Native Americans in Los Angeles, among whom more than 10 percent reported depression, and an additional 20 percent reported sadness and grieving (Kramer 1991).

## **CHALLENGES OF CO-EXISTING DIABETES AND DEPRESSION**

Evidence indicates that depression in patients with diabetes often remains undiagnosed or is not well integrated into diabetes care plans. According to Michelle Owens-Gary, Ph.D., a behavioral health scientist at the Centers for Disease Control and Prevention, only 30 percent of individuals in the U.S. with both diseases receive adequate treatment for depression.

“We know that depression and type 2 diabetes are preventable,” Owens-Gary says, “and they’re controllable.” Still, she points out, “less than 20 percent of patients with diabetes and depression complete more than four visits of psychotherapy, yet 80 percent of those who seek treatment show improvement.”

“Some symptoms of depression may reduce overall physical and mental health, not only increasing your risk for diabetes but making diabetes symptoms worse,” according to NIMH. For example, it says, “fatigue or feelings of

worthlessness may cause you to ignore a special diet or medication plan needed to control your diabetes, worsening your diabetes symptoms” (NIMH 2011).

Owens-Gary comments that “depression not only affects patient self-management tasks such as medication adherence or lifestyle behaviors, but it can also affect diabetes outcomes.” In a study of AI/AN patients with both diabetes and depression, blood glucose (A1c) levels were found to be worse -- 1.2 percentage points higher (9.3 percent vs. 8.1 percent) -- than other patients with diabetes but not depression.

According to the IHS Division of Diabetes Treatment and Prevention, major depression is associated with a 25 percent increased risk of macrovascular (large blood vessel disease) complications and a 36 percent increased risk of microvascular (small blood vessel disease) complications in patients with type 2 diabetes. Ann Bullock, M.D., with the IHS Cherokee Diabetes Program, reports that “Even depressive symptoms which do not meet the diagnostic criteria for depression are associated with non-adherence to important aspects of diabetes self-care” (Bullock 2011, Gonzales 2007).

#### **Comments by Dr. Robert Paeglo**

Robert Paeglo, M.D., a family physician in Albany, N.Y., says, “I’d say that 30-40 percent of the patients I see—maybe higher—suffer from depression and diabetes. Certainly there’s an aspect of depression—maybe not full blown—in a majority of these patients. Maybe the numbers are closer to 50-60% with significant depressive symptoms.”

Paeglo believes the number of practicing mental health professionals is insufficient. “Access for patients to mental health services is abysmal. I think it goes beyond abysmal for Medicaid populations and for those who are uninsured.”

“I think medical providers are aware of this co-morbidity. The problem is they don’t have time to deal with it in a 15-minute office visit . . . They may think to themselves, ‘I can’t open this can of worms right now.’ It’s a little bit safer to deal with things like diabetes, because you can measure how well you’re doing.”

“We know that diabetes is on a rampage, we’re in the middle of an incredible epidemic. Rarely does a day go by when I don’t make a diagnosis of diabetes. And we know that depression is the most common chronic disease today on earth. You put those two diseases together and you get incredible morbidities.”

“As a family doctor, I end up dealing with depression and diabetes, just because of a lack of access to mental health care. The incidence of depression among those diagnosed with diabetes is much higher, I believe, because of the change in lifestyle that has to occur to successfully manage that condition. In diabetes and other chronic disease, mental health plays so much more a factor than in acute disease where you can say, ‘Whew, I’m over that’,” Dr. Paeglo says.

## **WORKING TO MEET THE NEEDS OF THOSE WITH DIABETES AND DEPRESSION**

Nowhere in the United States do diabetes and depression collide with greater frequency than in AI/AN communities, where rates of diabetes and depression are each more than double national averages. The rates of co-occurring diabetes and depression among AI/ANs are so high and the potential impact so profound that CDC and IHS are working to develop strategies that may well ultimately serve as models for health care providers throughout the nation treating individuals with diabetes and depression.

Depression screening should be done in an appropriate setting, using a depression screening instrument appropriate for an older adult population, according to Dr. Mark Snowden, M.D., M.P.H., Department of Psychiatry and Behavioral Sciences, University of Washington School of Medicine. Examples of depression screening tools include the Geriatric Depression Scale ([www.chcr.brown.edu/GDS\\_SHORT\\_FORM.PDF](http://www.chcr.brown.edu/GDS_SHORT_FORM.PDF)), the Center for Epidemiologic Studies Depression Scale ([www.chcr.brown.edu/pcoc/cesdscale.pdf](http://www.chcr.brown.edu/pcoc/cesdscale.pdf)), and the Patient Health Questionnaire-9 (PHQ-9) ([www.nyc.gov/html/doh/downloads/pdf/csi/depressionkit-clin-questionnaire.pdf](http://www.nyc.gov/html/doh/downloads/pdf/csi/depressionkit-clin-questionnaire.pdf)). While screening identifies the likelihood someone may have depression, it is not in itself a diagnosis, Dr. Snowden added. Diagnosis and treatment should be offered by someone trained in evaluating depression symptoms and other medical problems associated with depression, according to Snowden (Snowden 2009).

However, the dearth of information on diabetes and depression among AI/ANs makes it difficult to say if these screening tools are culturally appropriate for this group.

Health care providers for AI/ANs, together with CDC, recommend key steps in the provision of care for individuals with both diabetes and depression. These four steps are:

## **1. Educate patients about diabetes and depression**

In 2011, the National Diabetes Education Program (NDEP), together with the Association of American Indian Physicians, released *Living a Balanced Life with Diabetes: A Toolkit Addressing Psychosocial Issues for American Indian and Alaska Native Peoples* (NDEP 2011).

The kit is designed to help health care professionals who work with AI/ANs living with diabetes better understand the psychosocial needs of these individuals. It also will help educate front-line professionals to understand behavioral barriers to diabetes control and prevention, and to help link patients with behavioral supports. Toolkit components, contained on a CD-ROM, include screening tools, patient fact sheets, articles, a resource list, and the IHS *Indian Health Diabetes Best Practices: Depression Care* publication (IHS 2011b). The free toolkit is available at [www.YourDiabetesInfo.org](http://www.YourDiabetesInfo.org).

Although no data regarding the impact of the toolkit's use yet exists, it represents a sophisticated, culturally specific effort—perhaps the only such guide available anywhere—to address the comorbidity of depression with diabetes among AI/ANs.

## **2. Screen all diabetes patients for depression**

Although several screening tools are available for depression, IHS primarily uses the PHQ-9 ([www.nyc.gov/html/doh/downloads/pdf/csi/depressionkit-clin-questionnaire.pdf](http://www.nyc.gov/html/doh/downloads/pdf/csi/depressionkit-clin-questionnaire.pdf)). Helpful with initial diagnosis, the PHQ-9 is designed primarily as a basis for referral to mental health professionals. Early screening for depression is critical for all newly diagnosed diabetes patients, who are suddenly confronted with the need to cope with new, often-difficult lifestyle changes due to their diabetes. According to the IHS *Indian Health Diabetes Best Practices: Depression Care* guidelines (IHS 2011b), delayed treatment of comorbid depression increases morbidity, and increases medical and psychiatric costs by 23 percent (Sheehan 2002).

## **3. Utilize multidisciplinary teams**

A strong focus on patient-centered, collaborative care, with high degrees of patient and family involvement, is essential. The active use of interdisciplinary teams results in high levels of consultation and collaboration designed to benefit the patient and ensure coordinated care. Team members include, to varying degrees, physicians, registered nurses, dieticians, pharmacists, podiatrists, public health nurses, optometrists, and dentists. However, given resource and staffing limitations, unfortunately these teams only occasionally include mental

health professionals. Depression-related diagnosis, prescriptions, and referrals for counseling generally remain the domain of primary care physicians. IHS's Special Diabetes Projects for Indians (SDPI) recently reported that 94 percent of the SDPI's 400 programs now include interdisciplinary teams. Some teams include mental health professionals. The SDPI is a grant program that is funded through Congressional legislation and administered by the IHS Division of Diabetes Treatment and Prevention. To be successful, this initiative notably includes a strong emphasis on tele-health. The IHS Tele-behavioral Center of Excellence, based in Albuquerque, N.M., currently provides provider consultation, limited tele-therapy sessions for patients and a rapidly growing number of educational webinars for providers.

The center's tele-behavioral health webinars show strong potential for educating interdisciplinary team personnel about treating comorbid diabetes and depression, although significant barriers remain to the establishment of a "tele-behavioral call center," where psychiatrists might remotely advise patients, prescribe medications, and consult with members of the interdisciplinary team.

The lack of highly educated mental health professionals working in low-income tribal communities remains a significant challenge for both IHS and Tribal health care providers. Although the establishment of a national Behavioral Health Care Hotline would be costly initially, it could ultimately result in considerable savings for the Indian health care delivery system.

A second barrier is that nearly 90 percent—more than 500—of the nation's Tribes now provide health care to their own members. IHS' role in public health education has substantially diminished. Convening large numbers of Tribal provider teams for tele-education about depression could prove difficult.

#### **4. Intensify case management for individuals with depression**

"CDC-supported research has identified programs that can successfully help address depression in older adults, that communities can engage in, that we know can have the desired outcomes," according to Lynda Anderson, Ph.D., director of CDC's Healthy Aging Program.

For older adults (age 60+), the top recommended treatment is home- or clinic-based depression care management (DCM), according to the independent, nonfederal Task Force on Community Preventive Services, whose members are appointed by the Director of CDC. Depression care management is a systematic, team-based approach to treating depression. The recommendations are contained in the *Guide to Community Preventive*

*Services* (commonly known as the *Community Guide*) (TFCPS, 2007). The panel also endorsed cognitive behavior therapy for treating late-life depression. Cognitive behavioral therapy, or CBT, is an individualized, structured, goal-oriented form of therapy that helps people cope with illness and develop behaviors and strategies to improve symptoms. The ratings are based on the evidence of effectiveness in improving short-term depression outcomes.

The task force concluded that these recommended programs—DCM and cognitive behavior therapy (CBT)—should be disseminated throughout the public health and aging networks while acknowledging the challenges and obstacles involved.

CDC’s Owens-Gary has observed that “We cannot really deal with depression unless we deal with individuals’ case management issues. We have to help patients manage daily life problems causing depression before we can deal with their diabetes.”

The acceptance of case management as a primary element of care for interdisciplinary teams may involve a change—sometimes a profound one (see sidebar on Southcentral Foundation below)—in a medical team’s treatment of depressed patients. However, the provision of depression care in a multidisciplinary team context no may no longer require the extensive participation of a psychiatrist for some individuals.

As the IHS *Indian Health Diabetes Best Practices: Depression Care* points out, provider team members are all involved in case management to some extent (IHS 2011). By learning the signs of depression, conducting prompt depression screening for all patients, then monitoring patient progress and interactions with their provider teams, nurses, social workers, case managers, and other team members can help modify a treatment plan, bringing the need for more intensive intervention to the attention of their team.

According to the *Indian Health Diabetes Best Practices: Depression Care*, “The American Diabetes Association recommends that ‘Psychosocial screening and follow-up should include . . . attitudes about the illness, expectations for medical management and outcomes, affect/mood, general and diabetes-related quality of life, resources (financial, social, and emotional), and psychiatric history’” (ADA 2011).

Various team members, if authorized, can also provide referrals to patient educational opportunities, traditional medicine programs, food resources, job programs, home health services, senior services, domestic violence shelters, transportation services, and child care services.

Perhaps most importantly, interdisciplinary team members can create supportive relationships, empathy, and trust with depressed patients—the ultimate expression of patient-centered care.

### **Southcentral Foundation**

Transforming health care provider culture from the ground up, Alaska’s native-owned Southcentral Foundation has created a new paradigm for health care that is quickly becoming an international model. Since its founding in 1982, the foundation has provided primary outpatient care to Alaska Natives, serving 45,000 enrollees in the Anchorage, Alaska, area and another 10,000 in often-remote villages.

According to the *New York Times*, the foundation has reduced emergency room use by 50 percent, hospital admissions by 53 percent, specialty care visits by 65 percent, and visits to primary care doctors by 36 percent. The foundation ranks in the top 10 percent of national targeted standards for having diabetes patients whose HGB A1C levels (blood sugar) are under control. The quality of both employee and customer relations rank higher than 90 percent. Southcentral’s extraordinary success recently resulted in a 2011 Malcolm Baldrige Award, one of the nation’s most prestigious honors for a health care system.

The program’s transformation into a world-class model resulted—according to Steve Tierney, the foundation’s quality improvement director—from a philosophical shift. Moving away from the medical community’s established paradigm of compartmentalized “billable services” provided by multiple clinicians, Southcentral re-invented the concept of health care provision. Care is not only centralized, it emphasizes the team’s relationship with each patient (carefully identified as “customer owners”).

Southcentral has created six identical “Integrated Care Teams” (ICT) that each provide care for about 1,400 “customer owners.” (The use of the term “customer” instead of patient underscores respect.) Team members are matched, not only for comparable skills, but also for personality, through sophisticated assessment tools and constant mentoring. This helps ensure their compatibility and workplace effectiveness with other team members.

Team members equally share responsibility for meeting different aspects of customer/owner care, and consult together informally on a daily basis. Southcentral ICTs operate collaboratively in comfortable, shared work spaces, and work together on an egalitarian first-name basis. Nurses work as equal partners with doctors. ICT members consult with each other informally and constantly.

“We create a ratio,” says Tierney, “where our team members interact with client owners in degrees. What’s the shortest path from needs assessment to completion, with the fewest interactions and the least cost?” Some customer owners, he indicates, may only see the team’s physician once a year, but frequent follow-up messages—often by phone—from other team members, assure that a high level of trust is maintained. “We try to enhance trust by enhancing success,” Tierney explains, “and we seek success at a deeper layer than the traditional provider/patient relationship.”

All ICT staffers receive ongoing training with communication skills, sharing their personal stories at a three-day Care Concepts conference, learning how to share and receive stories from other team members and customer owners.

Southcentral’s state-of-the-art computerized informatics system provides each team with often-daily feedback and sophisticated analyses. These apply not only to clients, but to their own performance as providers. Tierney considers the system’s informatics specialists as quality improvement experts whose work drives the foundation’s numerous proactive initiatives.

Southcentral teams are balanced, with each comprising a case manager, certified medical assistant, provider, behavioral health consultant, dietician, and pharmacist. Teams provide customer owners with comprehensive access to highly developed family wellness, support group, and traditional medicine programs.

Above all, Southcentral's focus on client convenience (patients can almost always see their provider team same-day, with no appointment required), and long-term trusting relationships results in a highly-successful model of integrative, patient-focused care.

*This document is available online at [www.cdc.gov/aging/publications/briefs.htm](http://www.cdc.gov/aging/publications/briefs.htm) and [www.chronicdisease.org](http://www.chronicdisease.org). It was written by Dave Baldrige. It follows three companion documents — “Moving Beyond Paradigm Paralysis: American Indian End-of-Life Care” ([www.chronicdisease.org/resource/resmgr/healthy\\_aging\\_critical\\_issues\\_brief/ha\\_cib\\_eol.doc](http://www.chronicdisease.org/resource/resmgr/healthy_aging_critical_issues_brief/ha_cib_eol.doc)), “Caregiving in Indian Country: Tribes Support Family Traditions” ([www.chronicdisease.org/resource/resmgr/healthy\\_aging\\_critical\\_issues\\_brief/ha\\_cib\\_indiancaregiving.pdf](http://www.chronicdisease.org/resource/resmgr/healthy_aging_critical_issues_brief/ha_cib_indiancaregiving.pdf)) and “Caregiving in Indian Country: Conversations with Family Caregivers” ([www.chronicdisease.org/resource/resmgr/healthy\\_aging\\_critical\\_issues\\_brief/ha\\_cib\\_aiancaregiving\\_conver.doc](http://www.chronicdisease.org/resource/resmgr/healthy_aging_critical_issues_brief/ha_cib_aiancaregiving_conver.doc)). These documents as a package provide valuable experience and knowledge about health care issues impacting AI/ANs.*

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### Other Resources

- American Indian Diabetes Prevention Center, <http://ndndiabetes.ouhsc.edu/>
- American Psychiatric Association, <http://www.psychiatry.org/mental-health/key-topics/depression/depression>
- Breaking Free from Depression and Diabetes: 10 Things You Need to Know and Do, [www.behavioraldiabetes.org](http://www.behavioraldiabetes.org)
- Centers for Disease Control and Prevention: [www.cdc.gov/diabetes](http://www.cdc.gov/diabetes)
- Diabetes among American Indians and Alaska Natives, [www.cdc.gov/media/matte/2011/11\\_diabetes\\_Native\\_American.pdf](http://www.cdc.gov/media/matte/2011/11_diabetes_Native_American.pdf)
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- Model Diabetes Programs Directory, [www.ihs.gov/MedicalPrograms/Diabetes/HomeDocs/Programs/ModelDiabetes/2012\\_ModelDMPrgm\\_Dir\\_0618\\_508c.pdf](http://www.ihs.gov/MedicalPrograms/Diabetes/HomeDocs/Programs/ModelDiabetes/2012_ModelDMPrgm_Dir_0618_508c.pdf)
- National Diabetes Education Program, a joint program of NIH and CDC, [www.yourdiabetesinfo.org](http://www.yourdiabetesinfo.org)
- National Institute of Mental Health Depression webpage, [www.nimh.nih.gov/health/topics/depression](http://www.nimh.nih.gov/health/topics/depression)
- National Library of Medicine American Indian Health website, <http://americanindianhealth.nlm.nih.gov/diabetes.html>
- Native Diabetes Wellness Program Commemorates Native American Heritage Month — November 2011, [www.cdc.gov/mmwr/preview/mmwrhtml/mm6046a4.htm?s\\_cid=mm6046a4\\_e](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6046a4.htm?s_cid=mm6046a4_e)