

The Disparate Impact of Diabetes on Racial/Ethnic Minority Populations

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Diabetes is a devastating disease that is affected by interdependent genetic, social, economic, cultural, and historic factors. In the United States, nearly 26 million Americans are living with diabetes, and another 79 million Americans have prediabetes.¹ This means almost one-third of the total U.S. population is affected by diabetes.²

Diabetes not only affects the quality of life of people with the disease, but also presents a tremendous economic burden on our health care system. Diabetes, including diagnosed and undiagnosed diabetes, prediabetes, and gestational diabetes mellitus (GDM) and their complications, accounted for \$218 billion in direct and indirect costs in 2007 alone.³ Much of the economic burden of diabetes is related to its complications, including blindness, amputation, kidney failure, heart attack, and stroke.

Racial and ethnic minorities, defined as American Indians and Alaska Natives, black or African Americans, Hispanics or Latinos, and Asian Americans, Native Hawaiians, and other Pacific Islanders, have a higher prevalence and greater burden of diabetes compared to whites, and some minority groups also have higher rates of complications.^{4,5} Despite medical advances and increasing access to medical care, disparities in health and health care still persist. In 2003, the Institute of Medicine released

a landmark report titled “Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care,” providing evidence that racial and ethnic minorities are treated differently from whites in the U.S. health care system, resulting in poorer health for millions of Americans.⁶ Specifically, the report noted that African Americans, Hispanics, and Native Americans experience a 50–100% higher burden of illness and mortality from diabetes than white Americans.

Magnitude of Diabetes Epidemic in Racial and Ethnic Minority Populations

The diabetes epidemic continues to grow at an alarming rate. Every 17 seconds, someone in the United States is diagnosed with diabetes. Every day, 230 Americans with diabetes will undergo an amputation, and 120 will develop end-stage renal disease (ESRD).¹ In addition, about 45% of people with diabetes have some stage of diabetic retinopathy.⁷ The toll of this epidemic bludgeons racial and ethnic minorities.

Diabetes statistics

African Americans

- 4.9 million African-American adults, or 18.7% of all African Americans \geq 20 years of age, have diagnosed or undiagnosed diabetes, compared to 7.1% of non-Hispanic white Americans.⁸
- The risk of diabetes is 77% higher among African Americans than

among non-Hispanic white Americans.¹

- In 2006, African-American men were 2.2 times more likely to start treatment for ESRD related to diabetes than non-Hispanic white men.⁹
- In 2006, African Americans with diabetes were 1.5 times more likely to be hospitalized and 2.3 times more likely to die from diabetes than non-Hispanic whites.⁹
- African Americans are almost 50% more likely to develop diabetic retinopathy than non-Hispanic whites.¹⁰

Hispanic/Latino Americans

- 11.8% of Hispanic/Latino Americans \geq 20 years of age have been diagnosed with diabetes.¹
- The risk of diabetes is 66% higher among Hispanic/Latino Americans than among non-Hispanic white Americans.
- Among Latino subpopulations, rates of diabetes in those $>$ 20 years of age are 7.6% for both Cubans and for Central and South Americans, 13.3% for Mexican Americans, and 13.8% for Puerto Ricans.⁸
- Hispanics are 1.7 times more likely to start treatment for ESRD related to diabetes than non-Hispanic whites.¹¹
- Hispanics are 1.5 times more likely than non-Hispanic whites to die from diabetes.¹¹

Asian Americans, Native Hawaiians, and other Pacific Islanders

- 8.4% of Asian Americans > 20 years of age and 20.6% of Native Hawaiians and other Pacific Islanders > 18 years of age have been diagnosed with diabetes.^{1,12}
- Diabetes was the fifth-leading cause of death for Asian Americans and Pacific Islanders, rising from being the eighth-leading cause of death in 1980.¹³
- Native Hawaiians have death rates from diabetes that are 22% higher than that of the entire U.S. population.¹⁴
- Although Asian Americans tend to have lower BMIs in some sub-groups, they are ~ 30% more likely to have type 2 diabetes than their white counterparts.¹⁵
- Asian-American women are 177% more likely to test positive for GDM than white women and tend to develop it at a lower body weight.¹⁶
- 52.3% of men and 42.4% of women 25–64 years of age in American Samoa have type 2 diabetes.¹⁷

American Indians and Alaska Natives

- At nearly 16.1%, American Indians and Alaska Natives have the highest age-adjusted prevalence of diabetes among U.S. racial and ethnic groups.¹⁸
- In 2004, the rate of death due to diabetes for American Indians and Alaska Natives was three times higher than that of the general U.S. population.¹⁹
- The rate of diabetes-related kidney failure is 3.5 times higher in American Indians than in the general U.S. population.¹⁹

Advocacy Efforts**Diabetes action councils**

The American Diabetes Association (ADA) has worked to increase its advocacy efforts addressing the disparate impact of diabetes on minority

populations through the leadership of its African American Diabetes Action Council (AADAC), Asian Pacific American Diabetes Action Council (APADAC), and Latino Diabetes Action Council (LDAC). Each council is composed of a cross-section of leaders who guide ADA's advocacy efforts in their respective communities. Many council members are health care providers who bring their perspectives as physicians, certified diabetes educators, dietitians, and nurses who are on the front lines daily and see firsthand the effects of diabetes in minority populations.

These councils, known collectively as the Tri-Council, have provided leadership on numerous legislative efforts; developed strategic partnerships such as ADA's participation as a founding member of the Asian American, Native Hawaiian, and Pacific Islander Diabetes Coalition; and provided a strong voice for the focus on health disparities in the ADA 2012–2015 Strategic Plan.

Federal legislation

Eliminating Disparities in the Diabetes Prevention, Access, and Care Act (EDDPAC). ADA also spearheads federal legislative initiatives to combat health disparities in diabetes, including supporting the EDDPAC. The goal of the EDDPAC is to improve diabetes research, treatment, education, and prevention in minority populations.

If passed, EDDPAC would require the National Institutes of Health to examine the various factors that lead to diabetes in minority populations, conduct research on pregnancy and diabetes among minority populations, and seek to identify environmental triggers in newborn minority children that could lead to the development of type 2 diabetes. The legislation also calls for the Centers for Disease

Control and Prevention (CDC) to conduct public education programs on the effects of diabetes in minority populations, determine how to provide better diabetes care to minority populations, and carry out culturally appropriate community-based interventions. The CDC would also carry out culturally appropriate health promotion and diabetes prevention programs for minority populations, such as expanding the state-based Diabetes Prevention and Control Programs' education and outreach to minority populations.

The bill further calls on the Health Resources and Services Administration (HRSA) to provide grants for diabetes education classes and training programs for health providers on cultural sensitivity and patient care within minority populations. HRSA would also fund Federally Qualified Community Health Center programs that provide diabetes services and screenings. HRSA would strengthen important career-building programs, such as the Health Careers Opportunity Program, Centers for Excellence, and the Minority Faculty Fellowship Program to provide career opportunities within minority populations that are focused on diabetes treatment and care. Additionally, HRSA would establish a loan repayment program that focuses on diabetes care and prevention in minority populations.

EDDPAC was last introduced in the 111th Congress on 21 April 2009, in conjunction with a Tri-Council lobby day. In 2010, the bill was amended and passed in the U.S. House of Representatives. This amendment transformed the bill into a study in which the U.S. Department of Health and Human Services would report on federal actions regarding diabetes disparities, including research on diabetes among minority

populations, surveillance and data collection on diabetes among minority populations, community-based interventions targeting minority populations, and education and training of health professionals on the prevention and management of diabetes and its related complications.

ADA unsuccessfully sought passage of the study bill in the U.S. Senate before Congress adjourned. Currently, the association is advocating for the reintroduction of EDDPAC during the 112th Congress.

Special Diabetes Program (SDP). ADA has been instrumental in the establishment and numerous reauthorizations of the SDP. This program consists of two parts—the SDP for Type 1 Diabetes and the SDP for Indians—and was created by Congress in 1997 in response to the need for additional resources to advance type 1 diabetes research and to address the disproportionate burden of type 2 diabetes on American Indian and Alaska Native populations.²⁰ This program has successfully implemented far-reaching, innovative efforts to address the diabetes epidemic in American Indian and Alaska Native communities and has helped improve the health and quality of life of thousands of American Indians and Alaska Natives. SDP is currently funded at \$300 million per year through the end of fiscal year 2013. ADA is advocating for the SDP's continued funding.

Patient Protection and Affordable Care Act of 2010 (ACA). ADA is a strong supporter of the ACA and one of its primary goals: to achieve health equality.^{21,22} The law includes many new tools in the fight to stop diabetes in disparately affected populations who represent a disproportionate number of the uninsured or underinsured in the United States.

When the provisions of the law are fully in place, people with

diabetes can no longer be denied insurance or forced to pay more for coverage simply because they have diabetes. Insurance companies will not be allowed to have annual or lifetime limits on coverage or to drop coverage when a person needs health care most. In sum, a diagnosis of diabetes will no longer be a lawful reason to deny health care, ending the current system that sanctions such discrimination.

The ACA established the National Diabetes Prevention Program, which targets adults at high risk for diabetes. In addition, screening for type 2 diabetes in pregnant women who are at high risk and for GDM in all pregnant women will be covered with no cost sharing for patients in new health plans starting in August 2012. Much work still lies ahead as the ACA is fully implemented in 2014 to protect these benefits.

These and other efforts are crucial to reducing the impact of diabetes in minority communities. Health care providers play a key role in combating the disparate impact of diabetes on racial and ethnic minority populations. Become a champion for all patients by becoming a diabetes advocate. More information about how to become an advocate is available online at www.diabetes.org/advocate.

REFERENCES

- ¹Centers for Disease Control and Prevention: National Diabetes Fact Sheet: National Estimates and General Information on Diabetes and Prediabetes in the United States. Atlanta, Ga., U.S. Department of Health and Human Services, 2011
- ²U.S. Census Bureau: U.S. & World Population Clock [article online]. Available from <http://www.census.gov/main/www/pop-clock.html>. Accessed 1 February 2012
- ³Dall TM, Zhang Y, Chen YJ, Quick WW, Yang WG, Fogli J: The economic burden of diabetes. *Health Aff* 29:297–303, 2010
- ⁴Centers for Disease Control and Prevention Office of Minority Health and Health Disparities: Definitions of racial & ethnic populations [article online]. Available

from <http://www.cdc.gov/omhd/populations/definitionsREMP.htm>. Accessed 17 February 2012

⁵Agency for Health Care Research and Quality: Diabetes disparities among racial and ethnic minorities fact sheet [article online]. Available from <http://www.ahrq.gov/research/diabdsp.htm>. Accessed 8 March 2012

⁶Smedley BD, Stith AY, Nelson AR (Eds.): *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*. Washington, D.C., National Academies Press, 2003

⁷National Eye Institute: Facts about diabetic retinopathy [article online]. Available from <http://www.nei.nih.gov/health/diabetic/retinopathy.asp>. Accessed 7 March 2012

⁸National Diabetes Information Clearinghouse. National diabetes statistics, 2011 [article online]. Available from <http://www.diabetes.niddk.nih.gov/dm/pubs/statistics>. Accessed 7 March 2012

⁹U.S. Department of Health and Human Services Office of Minority Health: Diabetes and African Americans [article online]. Available from <http://minorityhealth.hhs.gov/templates/content.aspx?lvl=2&lvlID=51&ID=3017>. Accessed 23 January 2012

¹⁰American Diabetes Association: African Americans & complications [article online]. Available from <http://www.diabetes.org/living-with-diabetes/complications/african-americans-and-complications.html>. Accessed 7 March 2012

¹¹U.S. Department of Health and Human Services Office of Minority Health: Diabetes and Hispanic Americans [article online]. Available from <http://minorityhealth.hhs.gov/templates/content.aspx?lvl=3&lvlID=5&ID=3324>. Accessed 7 March 2012

¹²U.S. Department of Health and Human Services Office of Minority Health: Diabetes and Native Hawaiians and Pacific Islanders [article online]. Available from <http://minorityhealth.hhs.gov/templates/content.aspx?lvl=3&lvlID=5&ID=8609>. Accessed 8 May 2012

¹³National Center for Health Statistics: *Health, United States, 2009: With Special Feature on Medical Technology*. Hyattsville, Md., National Center for Health Statistics, 2010

¹⁴Aluli NE: Prevalence of obesity in a Native Hawaiian population. *Am J Clin Nutr* 53:1556S–1560S, 1991

¹⁵Lee JW, Brancati FL, Yeh HC: Trends in the prevalence of type 2 diabetes in Asians versus whites: results from the United States National Health Interview Survey, 1997–2008. *Diabetes Care* 34:353–357, 2011

¹⁶Blatt AJ, Nakamoto JM, Kaufman HW: Gaps in diabetes screening during pregnancy and postpartum. *Obstet Gynecol* 117:61–68, 2011

¹⁷American Samoa Department of Health, World Health Organization and Monash University: American Samoa NCD

Risk Factors STEPS Report. Suva, Fiji, World Health Organization, 2007

¹⁸American Diabetes Association: Native American programs [article online]. Available from <http://www.diabetes.org/in-my-community/programs/native-american-programs>. Accessed 9 March 2012

¹⁹U.S. Department of Health and Human Services Indian Health Service: Facts-at-a-glance: diabetes in American Indians and Alaska Natives [article online]. Available from http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=resourcesFactSheets_AIANs08. Accessed 3 February 2012

²⁰American Diabetes Association, Juvenile Diabetes Research Foundation, National Indian Health Board: Special Diabetes Programs: stories of hope and prog-

ress [article online]. Available from <http://www.diabetes.org/assets/pdfs/advocacy/the-special-diabetes-program.pdf>. Accessed 4 February 2012

²¹Andrulis DP, Siddiqui NJ, Purtle JP, Duchon L: *Patient Protection and Affordable Care Act of 2010: Advancing Health Equity for Racially and Ethnically Diverse Populations*. Washington, D.C., Joint Center for Political and Economic Studies, 2010

²²U.S. Department of Health and Human Services: The health care law & you [article online]. Available from <http://www.health-care.gov/law/index.html>. Accessed 9 March 2012

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