



Community Summary of the Improving Health Care Delivery Project

The Health Status, Service Utilization, and Treatment Costs of American Indians with Diabetes

June 2019


American Indians and Alaska Native (AI/AN) peoples are more likely to have diabetes than the United States general population. The first goal of this analysis was to describe the health status of AI/AN adults with diabetes. The second goal was to describe Indian Health Service (IHS) and Tribal health program costs of providing services for adults with diabetes. To improve understanding of treatment costs, the analysis of costs included information on their use of health services.


The analyses include data for fiscal year 2010 (that is from October 2009 to September 2010) for AI/AN adults with diabetes who used IHS or Tribal health services and lived in 14 geographic locations located throughout the United States; the data were extracted from the IHS National Data Warehouse. The IHS Cherokee Service Unit, which includes facilities that serve members of the Eastern Band of the Cherokee Indians, was one of the 14 locations. Using data for 43,518 adults with diabetes, we reported the prevalence of comorbidities by age and cardiovascular disease (CVD) status. Generalized linear models were estimated to describe associations between CVD and other comorbidities.

Among all adults, 14.7% had diabetes. The prevalence of hypertension, CVD, and kidney disease among the adults with diabetes were 77.9%, 31.6%, and 13.3%, respectively. Nearly 25% exhibited a mental health disorder; 5.7%, an alcohol or drug use disorder. Among AI/ANs with diabetes but not CVD, 46.9% had 2 or more other chronic conditions; 75.5% of adults with diabetes and CVD had 2 or more other chronic conditions. Hypertension and tobacco use disorders were associated with a 71% (95% CI for prevalence ratio: 1.63-1.80) and 33% (1.28-1.37) higher prevalence of CVD, respectively, compared to adults without these conditions.

We analyzed data for 43,518 AI/AN adults with diabetes and 251,875 adults without diabetes (n=251,875) to describe IHS and Tribal health program costs of providing services for adults with diabetes. Treatment costs for adults with diabetes averaged \$8,164; their treatment costs accounted for 33.6% of all adult treatment costs. During this year, 34.9% of adults with diabetes had CVD, renal disease, or amputations, and 52.8% of treatment costs for all adults with diabetes were allocated for their care. The percentage of treatment costs for adults with diabetes allocated to hospital inpatient and emergency services; prescribed medications; and education, case management, and advanced practice pharmacy services were 30.5%, 24.1%, and 2.4%, respectively.

Information on the morbidity burden of AI/ANs with diabetes may inform enhancements to strategies implemented to prevent and treat CVD and other comorbidities. Information on service utilization and treatment costs may be used to assess efforts to prevent complications,





augment service delivery, and efficiently allocate resources for adults with diabetes, and ultimately reducing diabetes-related disparities between AI/ANs and other populations.

The two manuscripts that describe this work are: *The prevalence of cardiovascular disease and other comorbidities among American Indian and Alaska Native adults with diabetes* by J O'Connell, J Rockell, J Ouellet, S Yoder, K Lind, C Wilson, A Friedson, and S Manson. *The costs of diabetes-related complications among American Indian and Alaska Native adults with diabetes who access healthcare funded by the Indian Health Service* by J O'Connell, J Rockell, J Ouellet, S Yoder, C Wilson, and S Manson. We are currently working to publish these papers. For more information about either manuscript, please contact Joan O'Connell, PhD, at Joan.OConnell@ucdenver.edu.

