

## Diabetes-Related Costs in Medicaid: A Review of the Research

Several research studies demonstrate the costs of diabetes-related care in Medicaid. A few examples of these studies are summarized in the table below. The table also highlights the methodology and data sources used.

Summary	Data	Methodology	Source
The report shows estimates of excess medical expenditures associated with diabetes. Estimates differed by state ranging from about \$5,000 in Alabama to about \$15,000 in New York. Eight states were included in the analysis.	Medicaid administrative claims data (also referred to as Medicaid Analytic eXtract [MAX] files). Retrieved from the Centers for Medicare and Medicaid Services (CMS) Chronic Data Warehouse (CCW). Data include 100% of fee-for-service enrollees.	Researchers calculated mean expenditures for enrollees with and without diabetes and tested the difference in means using a t test analysis.	Ng, B. P., Shrestha, S. S., Lanza, A., Smith, B., & Zhang, P. (2018). Medical Expenditures Associated with Diabetes Among Adult Medicaid Enrollees in Eight States. Preventing chronic disease, 15, E116. <a href="https://doi.org/10.5888/pcd15.180148">https://doi.org/10.5888/pcd15.180148</a>
The report shows adult Medicaid beneficiaries with diabetes had average per capita health expenditures of \$14,229. This is more than three times higher than the cost for those without diabetes (\$4,568).	2007 and 2008 Medical Expenditure Survey (MEPS) household component. This is a publicly available nationally representative survey of health care topics.	Researchers calculated mean values by both insurance and diabetes status and calculated whether the difference in means for those with and without diabetes were statistically significant using a two-tailed test analysis.	Garfield, R. L., & Damico, A. (2012). Medicaid Expansion Under Health Reform May Increase Service Use and Improve Access for Low-Income Adults with Diabetes. Health Affairs, 31: 159-167. <a href="https://doi.org/10.1377/hlthaff.2011.0903">https://doi.org/10.1377/hlthaff.2011.0903</a>
During FY 2008, North Carolina's state Medicaid program spent \$4,098 per capita (\$525 million total) on diabetes-related expenditures. Diabetes prevalence among Medicaid enrollees was 15.7% compared to 9.1% for adults statewide. The analysis shows that the state could save about \$225 million per year if disparities in diabetes	North Carolina Medicaid paid claims and enrollment data.	Researchers included all Medicaid claims that had a diabetes diagnosis as a primary or contributing diagnosis. They also included prescription drug claims for drugs that almost exclusively treat diabetes. Mean expenditures were calculated and divided by the number of enrollees with a diabetes diagnosis to estimate a per capita cost.	Buescher, P.A., Whitmore, T.T., & Pullen-Smith, B. (2009). Medical Care Costs for Diabetes Associated with Health Disparities Among Adults Enrolled in Medicaid in North Carolina. A Joint Report from the State Center for Health Statistics and the Office of Minority Health and Health Disparities. North Carolina Division of Public Health. <a href="https://schs.dph.ncdhhs.gov/schs/pdf/schs160.pdf">https://schs.dph.ncdhhs.gov/schs/pdf/schs160.pdf</a>

rates (racial and economic) were eliminated.			
Based on a review of cost studies for chronic conditions, this study estimates \$3,219-\$4,674 per person per year is spent on diabetes-related costs among Medicaid adults.	Previously conducted and published studies of chronic condition costs in Medicaid.	Researchers reviewed MEDLINE and CINAHL databases to find original studies examining Medicaid costs of chronic conditions. They combined and summarized the results.	Chapel, J. M., Ritchey, M. D., Zhang, D., & Wang, G. (2017). Prevalence and Medical Costs of Chronic Diseases Among Adult Medicaid Beneficiaries. <i>American journal of preventive medicine</i> , 53(6S2), S143–S154. <a href="https://doi.org/10.1016/j.amepre.2017.07.019">https://doi.org/10.1016/j.amepre.2017.07.019</a>
This study shows average annual spending for adult Medicaid beneficiaries with diabetes (\$13,490) was more than twice the amount for those without diabetes (\$5,133). These totals include all spending and indicates an excess spending of more than \$8,000.	2009 Medical Expenditure Survey (MEPS) household component. This is a publicly available nationally representative survey of health care topics.	Spending data included all expenditures for adult Medicaid beneficiaries with diabetes and are calculated as annual, per capita expenditures.	Kaiser Family Foundation. (2012). The Role of Medicaid for People with Diabetes. <a href="https://www.kff.org/wp-content/uploads/2013/01/8383_d.pdf">https://www.kff.org/wp-content/uploads/2013/01/8383_d.pdf</a>
This study shows total costs for diabetes-related health care expenditures as \$2,751 per year with \$1,018 tied to pharmacy and \$1,733 medical.	Thomson Reuters MarketScan Multi-State Medicaid Database. This is a claims data source with enrollment, pharmacy, and medical claims information from nine unidentified states	Patients included must have had two medical encounters for diabetes or one medical encounter and a prescription refill for certain diabetes-related medications. Health care costs were calculated for both medical and pharmacy costs.	Priest, J. L., Cantrell, C. R., Fincham, J., Cook, C. L., & Burch, S. P. (2011). Quality of care associated with common chronic diseases in a 9-state Medicaid population utilizing claims data: an evaluation of medication and health care use and costs. <i>Population health management</i> , 14(1), 43–54. <a href="https://doi.org/10.1089/pop.2010.0019">https://doi.org/10.1089/pop.2010.0019</a>

Note: Many of these studies are dated and dollar values are not inflation-adjusted, thus these values do not represent current health care costs.

#### Additional Resources:

- Ng, C. S., Lee, J. Y., Toh, M. P., & Ko, Y. (2014). Cost-of-illness studies of diabetes mellitus: a systematic review. *Diabetes research and clinical practice*, 105(2), 151–163. <https://doi.org/10.1016/j.diabres.2014.03.020>
  - o *This systematic review summarizes diabetes costs generally but is not Medicaid specific. Differences between patients with diabetes and those without ranged from \$123 per person year to nearly \$11,000 per person per year. Studies included in the systematic review used diverse methodologies, study designs, perspectives, and were from a range of geographies.*
- Young, K., Rudowitz, R., Rouhani, S., & Garfield, R. (2015). Medicaid Per Enrollee Spending: Variation Across States. Kaiser Family Foundation. <https://www.kff.org/medicaid/issue-brief/medicaid-per-enrollee-spending-variation-across-states/>
  - o *This article shows variation in Medicaid spending by state broken out for older adults, individuals with disabilities, adults, and children. In 2011, the average annual medical spending per Medicaid enrollee varied from a low of \$4,010 in Nevada to a high of \$11,091 in Massachusetts.*

- Garis, R. I., & Farmer, K. C. (2002). Examining costs of chronic conditions in a Medicaid population. *Managed care* (Langhorne, Pa.), 11(8), 43–50.  
<https://pubmed.ncbi.nlm.nih.gov/12232928/>
  - *This article provides cost information for chronic conditions in a Medicaid population. The mean health cost for patients without a chronic condition was \$612 per year while for the mean health cost with one of the nine included chronic illnesses was \$2,995 (nearly five times higher). This study examined costs from FY1995.*

*The **Building Capacity for Public and Private Payer Coverage of the National DPP Lifestyle Change Program** project is supported by the Centers for Disease Control and Prevention (CDC) of the U.S. Department of Health and Human Services (HHS) as part of a financial assistance award totaling **\$4.2 million for grant year 6** with 100 percent funded by CDC/HHS. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement, by CDC/HHS, or the U.S. Government.*

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