Diabetes

Michigan Medicaid

Executive Summary

MDHHS
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Diabetes Surveillance Indicators

The Michigan Medicaid Data Warehouse contains data on beneficiaries in Michigan that can provide information to state and local diabetes programs for data-driven decisions to improve preventive measures. The Diabetes Prevention and Control Program (DPCP), in conjunction with the Chronic Disease Epidemiology (CDE) Section at the Michigan Department of Health and Human Services (MDHHS), reports key findings for diabetes-related office visits, diabetes education, and diabetes-related inpatient hospitalization, emergency department (ED) visits, and ED super utilization using health care utilization data from the Medicaid Warehouse. The results presented were for persons with diabetes (PWD) 18-64 years in a Medicaid program who met specific criteria given in Methods and Notes Section. These statistics may underestimate the number of PWD 18–64 years in Medicaid and cannot be generalized to all Michigan adult persons with diabetes.

Summary of Findings:

- In 2012, diabetes affected about one in ten, or 38,549, adult Medicaid beneficiaries age 18-64 years in Michigan.
- About 1 in 20 adult PWD had at least one Diabetes Self-Management Education (DSME) session in 2012.
- Over half the adult PWD had at least two diabetes-related office visits in 2012.
- The rate of inpatient hospitalization with any mention of diabetes was 337.7 per 1,000 adult PWD in 2007, peaked in 2009 to 418.2, but decreased to near baseline 349.9 by 2012.
- The rate of ED visits with any mention of diabetes increased from 81.7 per 100 adult PWD in 2007 to 124.4 in 2010 then decreased slightly to 117.2 in 2012.
- About 54% of adult beneficiaries with diabetes had no diabetes-related ED admissions in 2012. However, the percent of diabetes-related ED super utilizers increased from 3.6% in 2007 to 5.7% in 2012.

Diabetes-Related Indicators among Adult Michigan Medicaid Beneficiaries (18-64 yrs), 2007—2012

Indicators for Michigan Medicaid Beneficiaries (18-64 years)	2007	2008	2009	2010	2011	2012	Absolute Difference 2007 and 2012
Adult Population							
Diabetes Prevalence	9.1%	9.0%	9.2%	9.0%	9.2%	9.6%	0.5%
Adult Diabetes Population							
At Least One DSME Session	5.1%	4.8%	5.1%	5.1%	5.1%	4.7%	-0.3%
At Least Two Diabetes-Related Office Visits	56.7%	55.1%	53.2%	52.0%	51.2%	53.1%	-3.6%
Inpatient Hospitalization Rate, Diabetes Listed as Any Diagnosis (per 1,000)	337.7	351.3	418.2	401.0	368.8	349.9	12.2
Emergency Department Visit Rate, Diabetes Listed as Any Diagnosis (per 100)	81.7	93.5	116.4	124.4	120.1	117.2	35.6
Five or More ED Visits (i.e., Super Utilizer), Diabetes Listed as Any Diagnosis	3.6%	4.2%	5.6%	6.1%	5.9%	5.7%	2.1%

*Cochran-Armitage statistical test was used to determine evidence of a linear trend with time (year)

Findings among Demographic Groups:

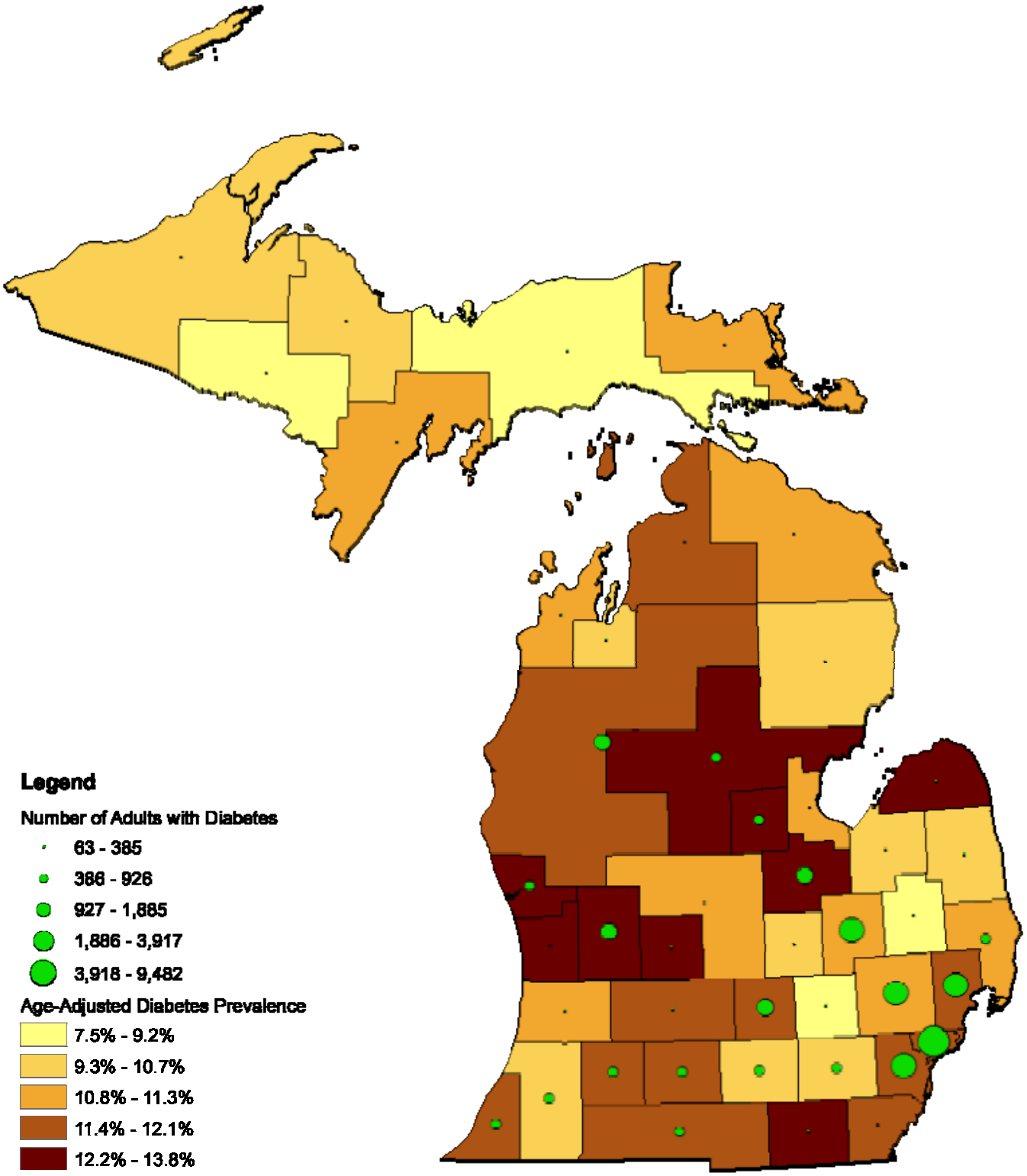
- In 2012, diabetes prevalence was higher among non-Hispanic Black Medicaid beneficiaries 18-64 years than non-Hispanic White beneficiaries 18-64 years (9.8% versus 9.0%). Among those with diabetes, non-Hispanic Black adults (3.5%) had 40% lower DSME enrollment than non-Hispanic White adults with diabetes (5.7%). The rate of diabetes-related inpatient hospitalization was 40% higher among non-Hispanic Black adults with diabetes compared to non-Hispanic White adults with diabetes (428.3 versus 300.6 per 1,000 adult PWD). If non-Hispanic Black and White adult PWD had the same diabetes-related ED experience, 1,000 more non-Hispanic Black adults with diabetes would not have had diabetes-related ED admissions in 2012.

- In 2012, diabetes affected a slightly higher percentage of adult male than female beneficiaries 18-64 years (9.9% versus 9.4%). Adult males with diabetes (3.4%) had lower DSME enrollment compared to females (5.5%). Among adult PWD, females and males 18-44 years had comparable rates of diabetes-related inpatient hospitalization (about 320 per 1,000 adult PWD), but female PWD 18-44 years had about 20% higher rates of diabetes-related ED visits than male PWD of the same age group (137.9 versus 118.2 per 100 adult PWD).

- In 2012, nearly 1 in 20 beneficiaries 18-44 years was affected by diabetes compared to one in five beneficiaries 45-64 years. The percentage of PWD 18-44 years who attended at least one DSME session was 2.3 times the percentage of PWD 45-64 years (7.6% versus 3.2%). There was no improvement in the percent of younger adult PWD who had at least two diabetes-related office visits between 2007 and 2012 (45.0% and 44.8%, respectively). The rate of diabetes-related ED visits was 20% higher among younger adult beneficiaries with diabetes than that of older beneficiaries with diabetes (131.7 versus 109.3 per 100 adult PWD). If the diabetes-related ED experience was the same regardless of age, 140 more 18-44 year old persons with diabetes would have had less than five diabetes-related ED visits in 2012.

- In 2012, diabetes prevalence was slightly higher for adult Medicaid beneficiaries residing in an urban setting compared to those in a rural setting in Michigan (9.7% and 9.3%, respectively). For those who had at least one DSME session, the percentage of adults with diabetes in rural areas (8.9%) was higher than the prevalence in urban areas (4.0%). Among adult beneficiaries with diabetes, rates of diabetes-related inpatient hospitalization and ED visits were consistently higher among those living in urban areas than rural areas. In 2012, rate of diabetes-related inpatient hospitalization was 362.0 per 1,000 adult PWD living in urban areas versus 283.3 per 1,000 adult PWD in rural areas, and diabetes-related ED visits were 119.9 per 100 adult PWD living in urban areas versus 103.1 per 100 adult PWD living in rural areas. In 2012, diabetes prevalence by local health department was concentrated in mid-Michigan and parts of southeast Michigan (See map). The number of persons with diabetes may be an underestimation due to the diabetes case criteria.

Number of Persons with Diabetes and Age-Adjusted Diabetes Prevalence by Local Health Department, Adults (18-64 yrs), Michigan, Medicaid, 2012



PWD—Persons with Diabetes

Natural Breaks method was used to set ranges for number of adults with diabetes and diabetes prevalence for local health department map.

MDHHS DPCP and CDE plan to expand surveillance of preventive care practices, inpatient hospitalization, and emergency department indicators for adult beneficiaries with diabetes insured by Michigan Medicaid. These indicators include dental office visits, visits to the podiatrist, HbA1C testing, emergency department reliance, hospital readmission, and medication use and adherence. Surveillance of these additional indicators will help in evaluating diabetes-related interventions and assist in future state and local program planning.

To learn more about Michigan adults with diabetes insured by Medicaid, visit www.michigan.gov/diabetesstats

Methods and Notes

Medicaid adult beneficiary, diabetes case, and other diabetes-related surveillance indicators (excluding DSME) were defined based on adaptations of the 2012 Health Plan Employer Data Information Set (HEDIS®) criteria for each calendar year (2007-2012).[1]

Medicaid beneficiaries were 18-64 years of age, had full medical and prescription coverage, and were enrolled continuously for the calendar year with no other insurance. The diabetes case definition was based on paid claim/encounter and/or pharmacy data, which had ICD-9-CM diagnosis codes for diabetes (250.xx, 357.2, 362.0, 366.41, and 648.0), for each calendar year. Because of these restrictions, services provided but not billed or paid by Medicaid are not represented by these data, and these results cannot be generalized to adults with other insurance or without insurance.

Selected indicators, excluding DSME, were based on claims or encounter utilization consistent with a diagnosis of diabetes for each calendar year (2007-2012). ICD-9-CM diagnosis codes for diabetes (250.xx, 357.2, 362.0, 366.41, and 648.0) had to be listed with claim or encounter. DSME was based on anyone who had a claim with the billing codes G0108 or G0109 and a diagnosis of diabetes.

Analysis

Cochran-Armitage statistical test was used to determine evidence of a linear trend with time (year) for the following indicators: diabetes prevalence, had least one DSME session annually, had two or more office visits annually, and had at least five or more diabetes-related ED visits annually.[2]

Disparity in diabetes prevalence and diabetes-related indicators were based on relative difference and absolute difference.[2] Diabetes status depended on the indicator.

A relative difference equal to or greater than |15%| was considered disparate.

Expected counts for diabetes-related emergency department visits were estimated using the indirect standardization method.[2]

Diabetes prevalence by local health department was adjusted to the 2000 U.S. Standard Population using four age groups (18–24, 35–44, 45-54, and 55-64 years).[3]

Natural Breaks method was used to set ranges for number of adults with diabetes and diabetes prevalence for local health department map.

References

[1]HEDIS® 2012 Technical Specifications for Health Plans. Washington DC: NQCA, 2011. Item # 10184-100-12. Print.

[2]Gordis L. Epidemiology, 4th Edition. Philadelphia: Saunders Elsevier, 2009. Print.

[3]Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy People Statistical Notes, no. 20. Hyattsville, Maryland: National Center for Health Statistics. January 2001.

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