## Background

- Diabetes is a chronic disease characterized by hyperglycemia (high blood glucose) caused by either a lack of insulin or the body's inability to use insulin efficiently.[1]

- Michigan Medicaid programs provide coverage for health care services to residents in need of financial assistance. Michigan is uniquely positioned to be able to monitor diabetes among Medicaid beneficiaries using health and pharmacy claims and administrative data in the Michigan Health Data Warehouse (Data Warehouse).

- Based on these data, a diabetes utilization percentage can serve as a proxy for the estimated percentage of adult beneficiaries classified as having diabetes (See Methods).

Purpose

- This summary provides diabetes percentage estimates among adult beneficiaries in Michigan (18-64 years) from 2012 to 2016 with a focus on calendar year 2016. Disparities in diabetes percentages by selected demographic characteristics and county are also reported.

Results: Diabetes Trend from 2012 to 2016

Diabetes Percentage, Adults (18-64 years), Michigan, Medicaid, 2012-2016
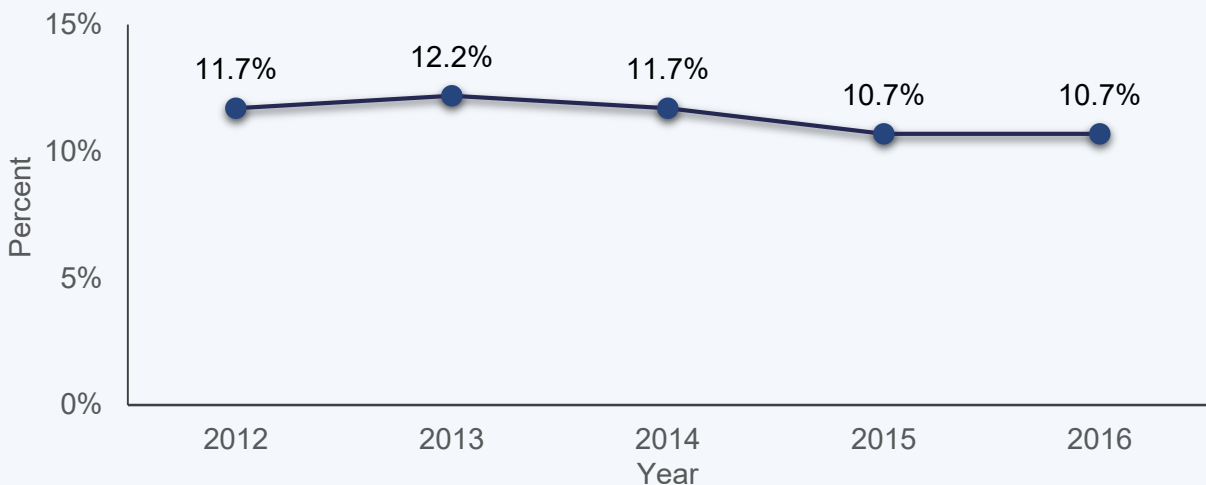
- In 2012, 11.7% of adult beneficiaries had diabetes, any type, excluding gestational diabetes.

- In 2016, the percentage with diabetes was 10.7%, a modest, but statistically significant decrease from 2012.

# Results: Diabetes Disparities among Select Characteristics

Diabetes Percentage by Gender, Adults (18-64 years), Michigan, Medicaid, 2016*
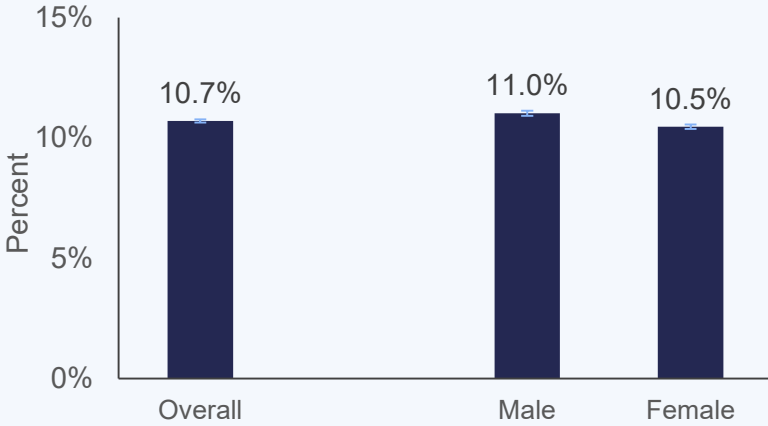
*See Methods

- In 2016, a higher percentage of adult male beneficiaries (11.0%) had diabetes compared to the percentage of adult female beneficiaries (10.5%).
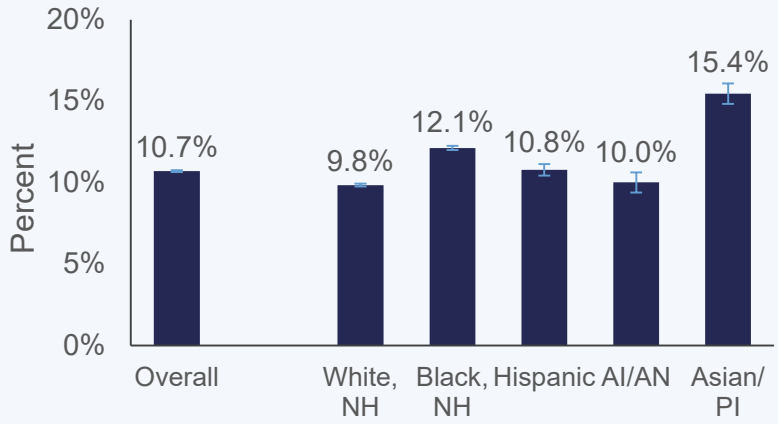
Diabetes Percentage by Age, Adults (18-64 years), Michigan, Medicaid, 2016*

*See Methods
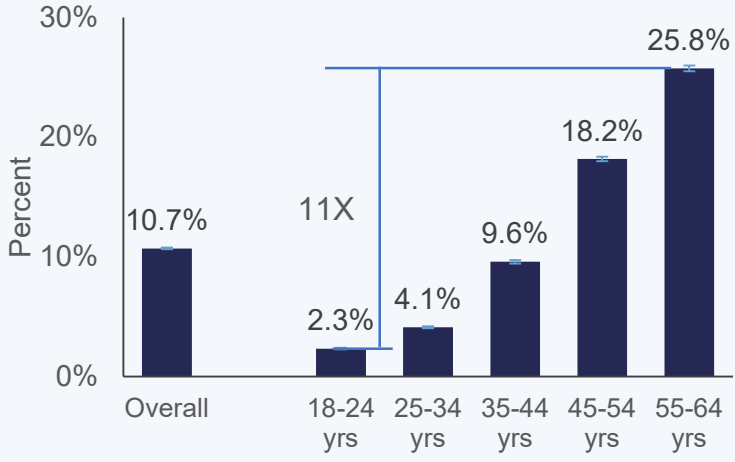
- Diabetes percentage among adult beneficiaries increased with increasing age group.
- The diabetes percentage of beneficiaries ages 55 to 64 years (25.8%) was 11 times the percentage of those ages 18 to 24 years (2.3%).
- The diabetes percentage of beneficiaries ages 45 to 54 years (18.2%) was four times that of those ages 25 to 34 years (4.1%).

Diabetes Percentage by Race and Ethnicity, Adults (18-64 years), Michigan, Medicaid, 2016*

*See Methods
NH- non-Hispanic; AI/AN – American Indian/Alaska Native;
*Asian/PI - Asian/Pacific Islander*

- The percentage of adult Asian/Pacific Islander beneficiaries with diabetes was near 60% higher than that of non-Hispanic White beneficiaries (15.4% versus 9.8%, respectively).
- The diabetes percentages of adult non-Hispanic Black (12.1%) and Hispanic (10.8%) beneficiaries were also higher than non-Hispanic White beneficiaries (9.8%).

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Results: Diabetes Disparity among Michigan Counties

Age-Adjusted County Diabetes Percentage, Adults (18-64 years), Michigan, Medicaid, 2016*
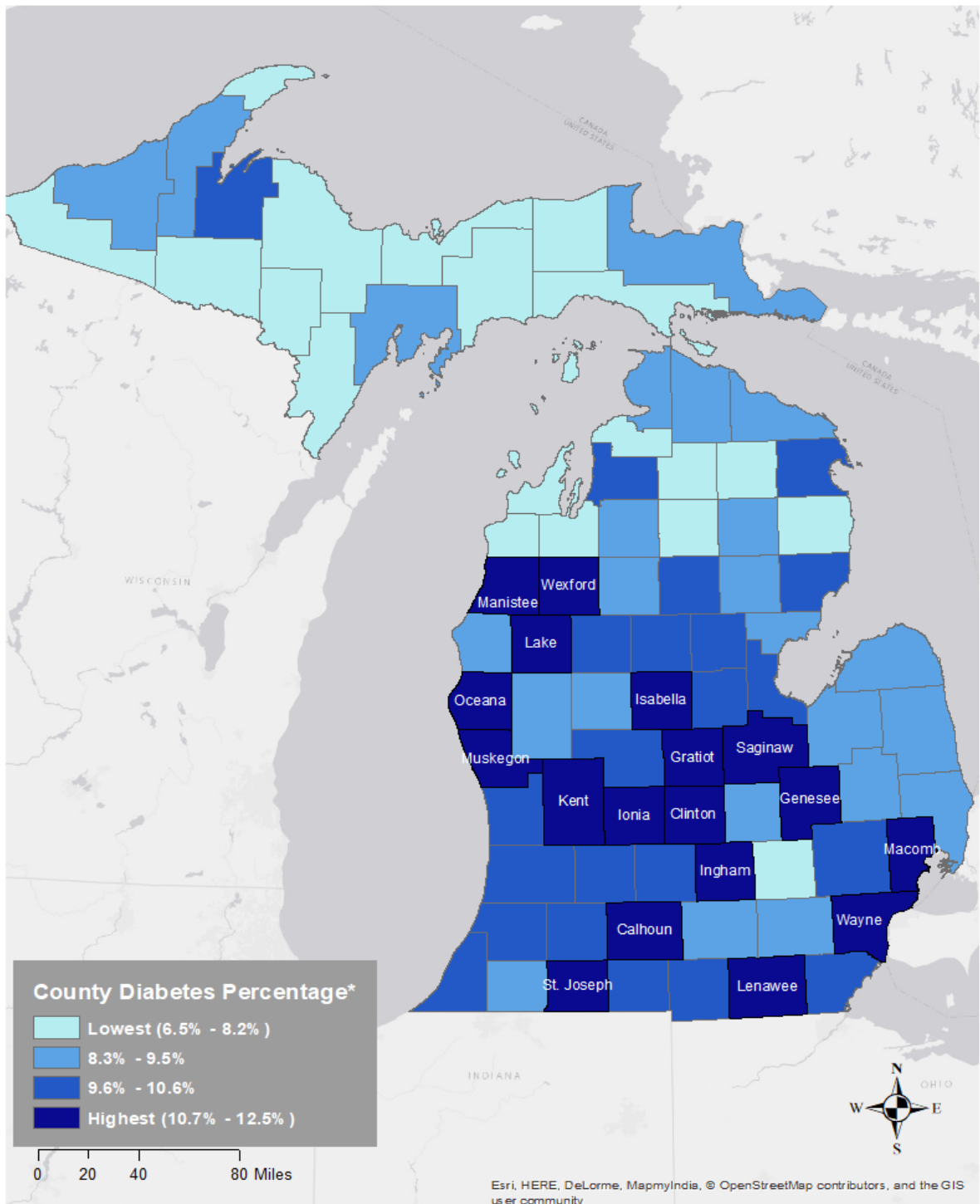
* Age-adjusted (See Methods)

- The 18 counties with the highest age-adjusted percentages among adult beneficiaries with diabetes were all located in the lower peninsula.

- The range of age-adjusted percentages was 6.5% to 12.5% with the state percentage of 9.5%.

Recommendations for Diabetes Prevention and Management

Data to Action

- The Diabetes Prevention and Control Program uses data to guide the allocation of resources and prioritize groups with the highest percentages of diabetes. For example, the diabetes percentage quadrupled between Medicaid beneficiaries 25-34 years of age and those 45-54 years of age (4.1% versus 18.2%, respectively). This disparity supports the importance of diabetes prevention programs for those age groups.

- Additionally, the percentage of diabetes was significantly higher when comparing Asian/Pacific Islander (15.4%), non-Hispanic Black (12.1%), and Hispanic (10.8%) beneficiaries to their non-Hispanic White counterparts (9.8%). Such data further supports the continued need for diabetes prevention and management programs in Michigan, with an emphasis on populations with the highest need. The following recommendations are suggested based on the data. For more information, visit www.Michigan.gov/Diabetes.

Diabetes Prevention

- The Centers for Disease Control and Prevention leads the National Diabetes Prevention Program (DPP), an evidence-based lifestyle change program proven to help prevent or delay type 2 diabetes. Research shows this program can reduce the risk of developing diabetes by 58% with modest lifestyle changes.[2] The MDHHS Diabetes Prevention and Control Program strives to do the following:

  - Promote the American Diabetes Association's 2019 Standards of Medical Care for routine screening for prediabetes.[2]

  - Increase access and coverage of the National DPP to promote health equity for Medicaid beneficiaries and reduce the incidence of Type 2 diabetes.

  - Provide cultural competency training for diabetes prevention professionals to address unique needs of underserved communities.

Diabetes Management

- Diabetes Self-Management Education and Support (DSMES) is an evidence-based individualized program conducted by Registered Dietitians, Registered Nurses, and Pharmacists at hospitals and health departments throughout Michigan. It is a covered benefit for Medicaid beneficiaries and can help individuals with diabetes successfully manage the condition and prevent or delay complications. The MDHHS Diabetes Prevention and Control Program strives to do the following:

  - Promote the American Diabetes Association's 2019 Standards of Care for routine screening and referral for patients with diabetes.[2]

  - Increase access to DSMES, including promoting increased coverage through Medicaid and eliminating barriers to participation.

  - Expand understanding of diabetes management-related behaviors among underserved communities.

  - Provide cultural competency training for certified diabetes educators to address unique needs of underserved communities.

Next Steps

- In 2014, Michigan implemented Medicaid Expansion (i.e., Healthy Michigan Plan). The diabetes percentage among adult Medicaid beneficiaries showed a statistically significant change when comparing pre- and post-Healthy Michigan Plan (HMP) implementation. Two subsequent summaries will focus on how HMP impacted adult Medicaid beneficiaries with diabetes. The first summary will compare pre- and post HMP implementation differences in healthcare utilization such as inpatient hospitalization, emergency department visits, and diabetes-related office visits. It will discuss changes observed among demographic and regional characteristics. The second summary will discuss changes in DSMES enrollment overall and by demographic characteristics pre- and post HMP implementation.

Methods

This summary included the Michigan Medicaid population aged 18 to 64 years of age (as of the last day of each respective calendar year) who were enrolled in a Medicaid benefit plan that covered diabetes-related services and were not dually enrolled in any other insurance plan (such as Medicare) for at least 11 months of the measurement year. Race/ethnic groups were defined using the following classification in the Data Warehouse: 1) non-Hispanic Black beneficiaries were those who were identified as Black, non-Hispanic, 2) non-Hispanic White beneficiaries were those who were identified as White, non-Hispanic, and 3) Hispanic beneficiaries were those who were identified as Hispanic. American Indian/Alaska Native were those who were identified as American Indian or Alaska Native. Asian/Pacific Islander beneficiaries were those who were identified as Asian American, East Indian, Pacific Islander, or beneficiaries from an East or Southeast Asian country. Hispanic ethnicity was not specified for the American Indian/Alaska Native and Asian/Pacific Islander in the Data Warehouse.

Medicaid beneficiaries were identified as having diabetes according to the HEDIS® 2016 inclusion criteria, which included a beneficiary meeting any of the following criteria in the measurement year or the year prior to the measurement year.

- At least two outpatient visits, observation visits or nonacute inpatient encounters on different dates of service, with a diagnosis of diabetes. Visit type need not be the same for the two visits.

- At least one emergency department visit with a diagnosis of diabetes.

- At least one acute inpatient hospitalization with a diagnosis of diabetes.

- At least one prescription fill for insulin or hypoglycemics/antihyperglycemics during the measurement year or the year prior to the measurement 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, discontinuously enrolled, or without insurance.

Diabetes percentages were reported with 95% confidence intervals. Percentages compared within subgroups in which the confidence intervals did not overlap were considered statistically significantly different from each other. The term higher/lower/increase/decrease or significantly higher/lower/increase/decrease was used to relay this difference. County prevalence estimates were adjusted to the 2016 Medicaid population using three age groups   (18–34, 35–49, 50–64 years).

References

1. US DHHS, Centers for Disease Control and Prevention (CDC), Division of Diabetes Translation. Available on CDC-Diabetes Basics. [Accessed on April 4, 2019].

2. American Diabetes Association: Clinical Practice Recommendations 2019. Standards of Medical Care in Diabetes—2019. Diabetes Care January 2019 Jan; 42(Supplement 1): S187-S193.