Pharmacist-led interventions result in higher metformin use in patients with diabetes

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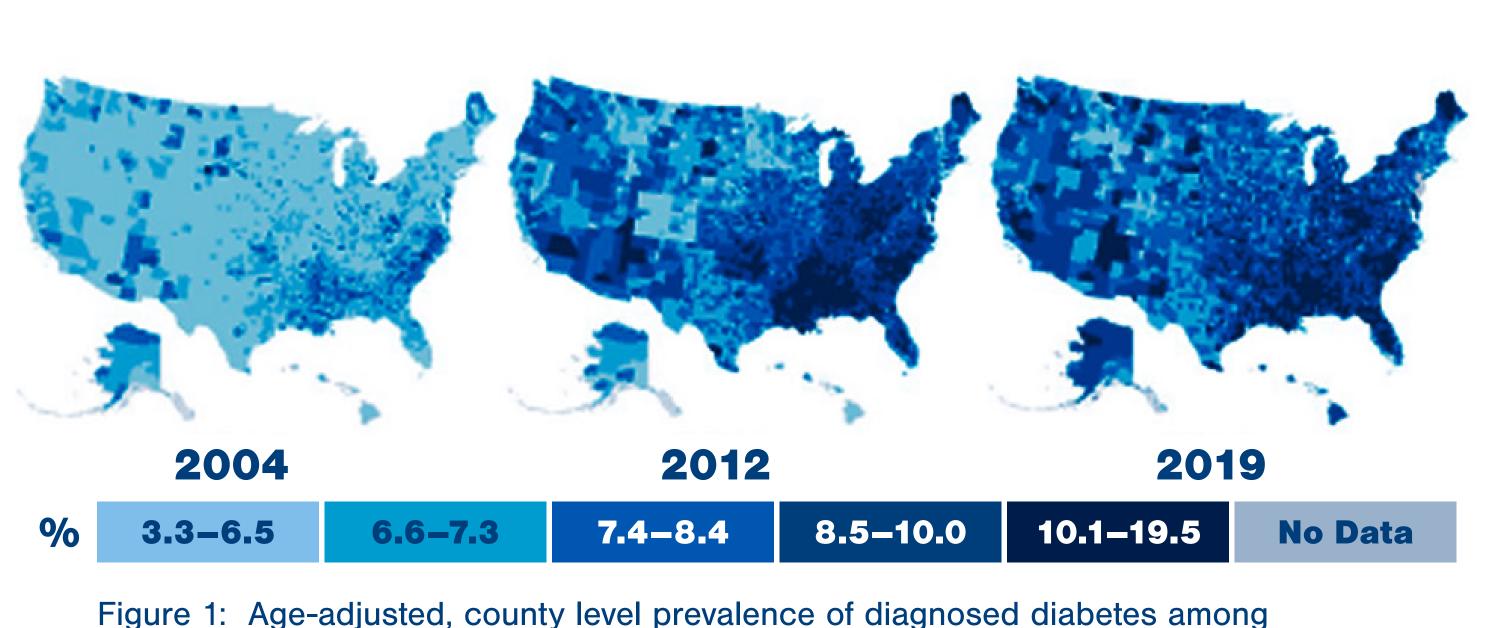
BACKGROUND

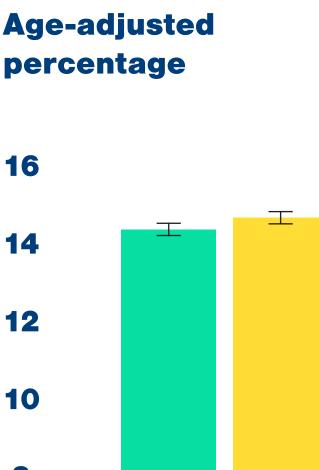
Diabetes is the leading cost driver in non-specialty spend for plan sponsors accounting for more than 10% of total drug expenditures.^[1] The CDC estimates that approximately 37 million people have diabetes, with 8.5 million of those people undiagnosed. In addition to approximately 11% of the US population with diabetes, there are over 96 million adults that have pre-diabetes. These values have been steadily increasing over the last two decades ^[2]

Diabetes tends to affect a greater number of people aged 45 years or older, with a relatively even split among the sexes. For both men and women, diagnosed diabetes was highest among American Indians and Alaska Natives at 14.5%, with non-Hispanic Blacks at 12.1%, people of Hispanic origin at 11.8%, non-Hispanic Asians at 9.5% and non-Hispanic Whites at 7.4%. Diabetes also tends to affect people of different education levels, a common indicator of socioeconomic status, where a higher proportion of adults with less than a high school education, 13.4%, had diagnosed diabetes compared to those with a high school education of 9.2% and 7.1% in those patients with more than a high school education. Also, adults where the family income was below the federal poverty line had the highest prevalence, with 13.7% of men and 14.4% of women.^[2]

Diabetes is estimated to cost over \$327B, including \$237B in direct medical costs and \$90B in indirect costs. The average medical spend for patients with diabetes is approximately \$16,750 annually, with about 57% of the spend directly attributed to diabetes. In general, patients with diabetes experience 2.3 times higher medical spend than patients without diabetes. In addition to the direct medical costs, indirect costs associated with reduced productivity and/or disability contribute significantly to the overall cost of care.^[3]

National treatment guidelines recommend metformin as the preferred initial first-line agent for patients with type 2 diabetes. Once initiated, patients should continue on metformin for as long as it is tolerated and not contraindicated.^[4] Unfortunately. many patients either do not remain, or are never initiated, on metformin as part of their diabetes management.





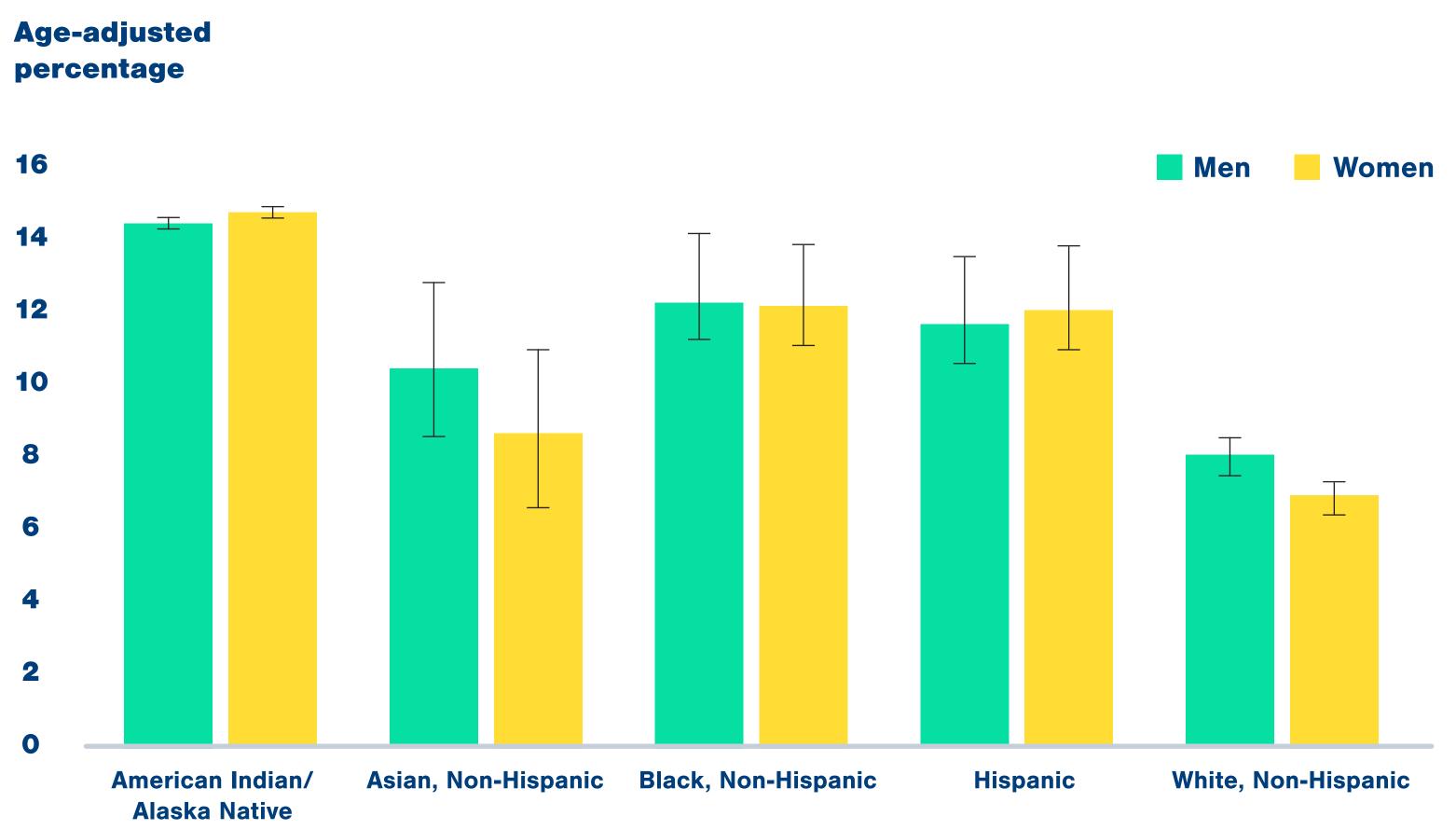


Figure 2: Age-adjusted estimated prevalence of diagnosed diabetes by race/ethnicity group and sex for adults aged 18 years or older, United States, 2018-2019^[2]

One main focus of the pharmacist-led diabetes program is to ensure appropriate metformin use and encourage initiation and/or re-trial in patients not currently on a metformin containing product who do not have contraindications. These metformin use reviews occur as part of a therapy change review and a quarterly rDUR. Therapy change reviews (TCRs) are reviewed and completed by clinical diabetes specialty pharmacists when a patient either increases the dose or adds a new medication to their diabetes regimen.

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adults aged 20 years or older, United States, 2004, 2012, and 2019^[2]

Race-Ethnicity

OBJECTIVE

To identify effect of pharmacist-led collaborative care in increasing metformin use in patients with diabetes.

METHODS

A retrospective analysis using a subset of pharmacy paid claims data from 11.1.20 to 10.31.21 using Generic Product Identifiers (GPIs) for medications used to treat diabetes was performed to identify diabetes members. Members at least 18 years of age and continuously enrolled in a prescription plan administered by the pharmacy benefit manager during the period were included in the analysis. The proportion of patients on a metformin product enrolled in the pharmacist-led diabetes program was compared versus patients not enrolled using chi-square analysis.

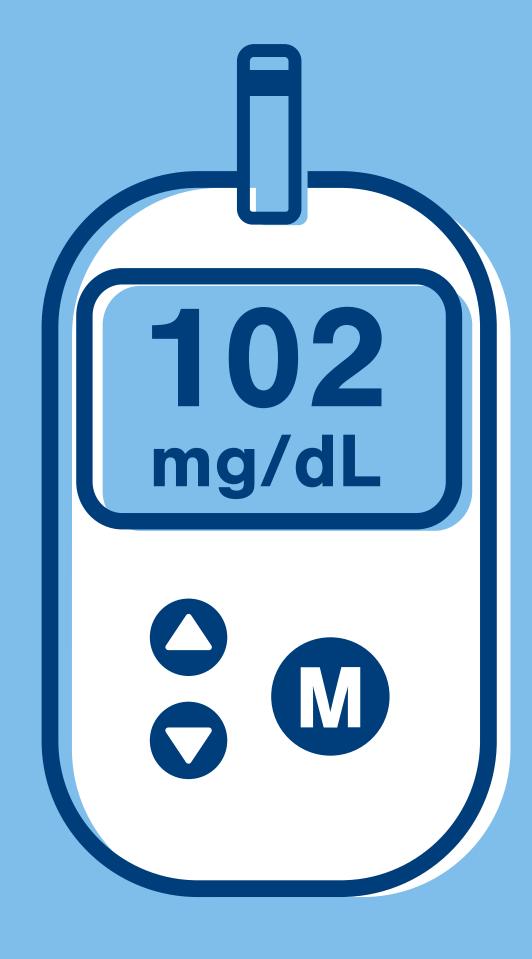
RESULTS

The proportion of patients with diabetes on a metformin product in the pharmacist-led diabetes program was significantly higher than the patients not in the program: 79.1% (2,519 out of 3,185) versus 75.1% (23,455 out of 31,227) (P<0.05).

CONCLUSIONS

Adherence to metformin has been suboptimal, and oftentimes patients with type 2 diabetes discontinue metformin despite its many advantages in treating diabetes. In a recent retrospective cohort study, approximately one-third of patients who initiated metformin discontinued it within 12 months, and fewer than 50% of all patients were adherent to metformin. In addition, patients who are on other medications used to treat diabetes, but have low medication adherence to metformin, demonstrate lower reductions in hemoglobin A1c (A1c).^[5]

The American Diabetes **Association generally** recommends metformin in the treatment and management of patients with type 2 diabetes. Metformin is a cost-effective medication with a variety of generically available formulations with either once or twice-daily dosing. In addition to its ability to help manage blood sugar levels in patients with



diabetes, metformin may reduce the risk of cardiovascular events and death. When compared with sulfonylureas, another generically available cost-effective medication, metformin has improved effects on A1c, weight and cardiovascular mortality.^[4]



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Patients in pharmacist-led program

75.1%

Patients NOT in

pharmacist-led

program



One of the challenges associated with the use of metformin includes the main side effects that patients often experience, particularly the gastrointestinal ones related to bloating, abdominal discomfort and diarrhea. It is important to note that these side effects are often mitigated with titration of the metformin dose gradually.^[4] Pharmacists are the ideal healthcare providers to help patients anticipate the potential side effects, ensure that an appropriate titration schedule is followed and help patients become and remain adherent to metformin.

The clinicians of the pharmacist-led diabetes program work diligently to encourage the start of metformin, particularly in patients who are on other medications used to treat diabetes. Oftentimes, patients report the intolerable side effects, but also mention they had never been told to titrate. The clinicians work with the patient to mitigate the side effects and titrate up to the optimized tolerated dose of metformin.

The pharmacist-led diabetes program results in impactful clinical benefits to plan sponsor and patients. The pharmacist-led collaborative care ensures that patients are started and remain on a metformin product with a significantly higher proportion of patients on a metformin product versus patients not enrolled in the diabetes program.

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