

Diabetes Treatment Costs Decrease after Periodontal Therapy

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Research Objective

- Diabetes mellitus (DM) and periodontal disease (PD) have a suggested bidirectional relationship based on systemic inflammation.
- The goal of this study was to examine the relationship between periodontal treatment and diabetic medical costs in both commercial and Medicaid claims data.

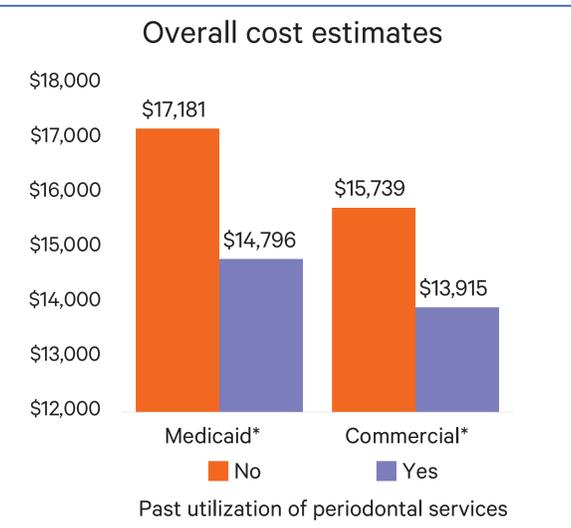
Study Design

- We used IBM Watson MarketScan commercial and Medicaid databases.
- We examined the association between overall healthcare costs per patient in 2019 by past utilization of periodontal therapy services using generalized linear modeling with a gamma error distribution and a log-link function.
- An average treatment effect on treated (ATET) was calculated by propensity score matching using a logistic model for periodontal therapy on covariates.

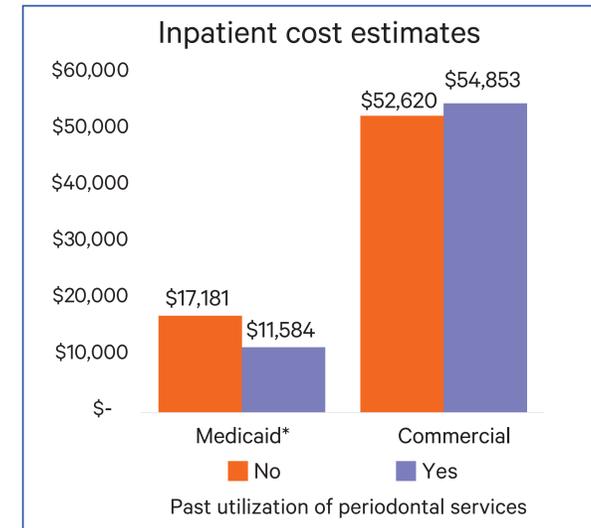
Principal Findings

- In the commercial claims database, periodontal treatment reduced overall healthcare costs by 13% compared to no periodontal therapy.
- Similarly, in the Medicaid cohort, enrollees who had past periodontal treatment showed a 16% decrease in average overall healthcare costs compared to diabetic individuals without periodontal treatment.

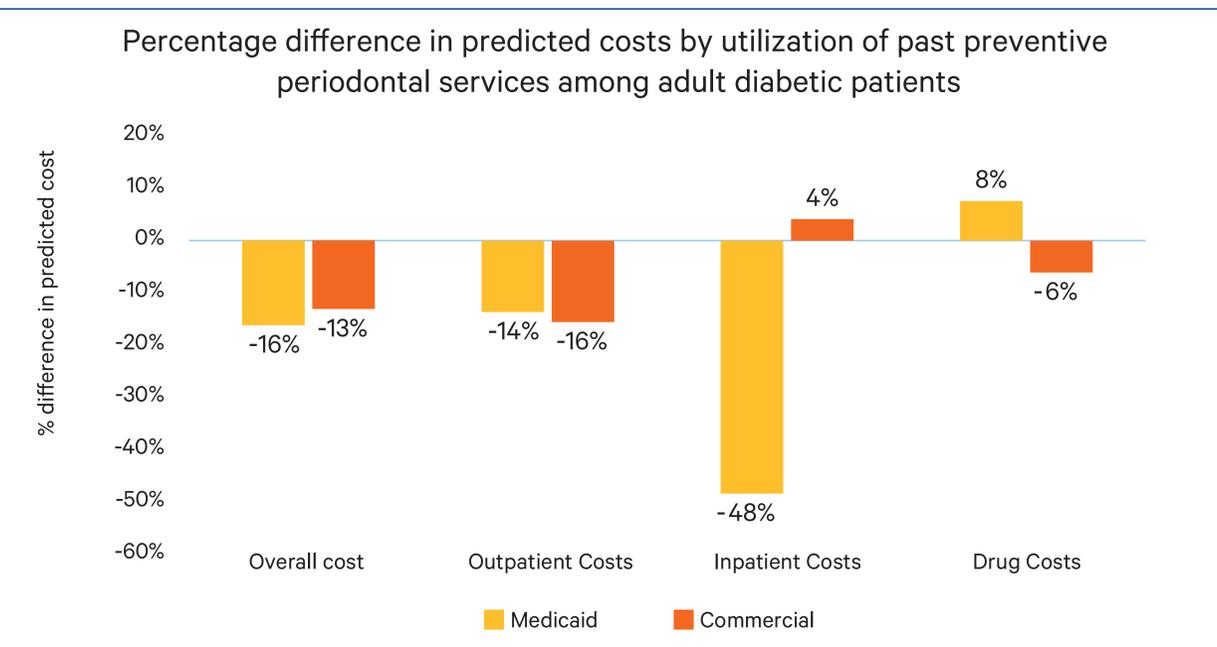
Results



*significant differences



*significant differences



References

1. Sapra A, Bhandari P. Diabetes Mellitus. StatPearls. Treasure Island (FL);2021.
2. World Health Organization (WHO). Diabetes: World Health Organization (WHO); 2021. Accessed December 13, 2021. Available from: https://www.who.int/health-topics/diabetes#tab=tab_1.
3. Petersen PE, Ogawa H. Strengthening the prevention of periodontal disease: the WHO approach. J Periodontol. 2005;76(12):2187-93.
4. Forbes JM, Cooper ME. Mechanisms of diabetic complications. Physiol Rev. 2013;93(1):137-88.

Implications for Policy and Practice

- In both cohorts, outpatient and inpatient costs were consistently higher for individuals with diabetes who did not have periodontal treatment.
- Interestingly, use of overall dental services and periodontal treatment specifically were more common in the commercial cohort than among Medicaid enrollees, suggesting a greater benefit regarding cost savings for those in the Medicaid cohort who did use dental services.
- It is clear from these results that periodontal therapy has the potential to save the U.S. healthcare system a significant cost by lowering healthcare costs through providing periodontal treatment to those with diabetes, particularly by expanding Medicaid dental benefits to include periodontal therapy.

Conclusion

- A healthy mouth is vital to a diabetes management program.
- Receiving periodontal therapy reduced overall healthcare costs for patients with diabetes in both Medicaid and commercial claims data.
- Expanding programs that provide healthcare coverage to those with lower SES, such as Medicaid and Medicare, to include comprehensive periodontal treatment has the potential to reduce overall healthcare costs for individuals with diabetes.

For More Information

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