

# Addressing Social Determinants of Health to Improve Diabetes Outcomes: A Quality Improvement Study at UPMC Family Medicine, Altoona, PA

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## Abstract

Social determinants of health (SDOH) impact diabetes outcomes; this study evaluated whether addressing SDOH barriers improves glycemic control. Patients were screened for SDOH, and referred for social work assistance, and post-intervention HbA1c levels were recorded; paired t-tests and chi-square tests were performed. Results showed a 0.45 mean decrease in HbA1c ( $p = 0.13$ ), with greater improvement in lower-SDOH burden and privately insured patients but limited impact in high-poverty areas. This project is viewed through the Psychosocial and Metabolic Osteopathic 5 Models.

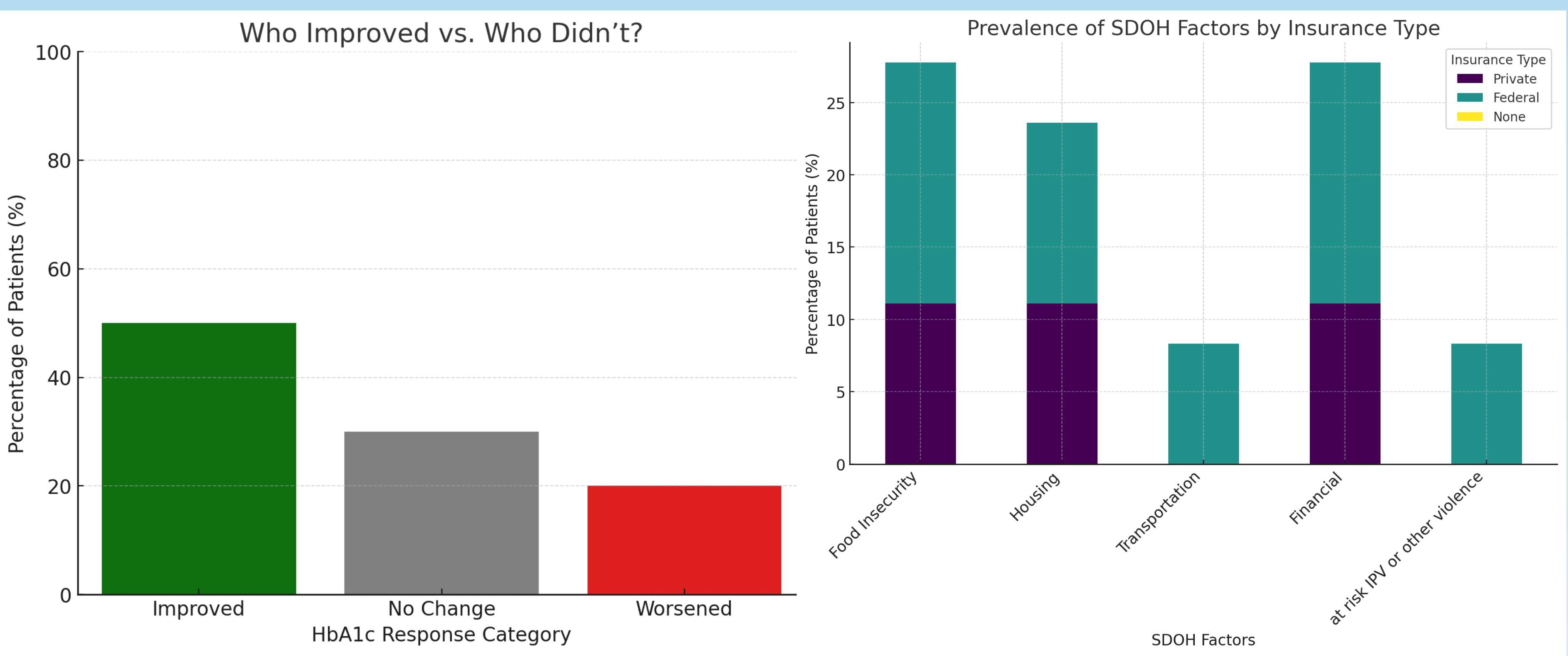
## Introduction

- SDOH factors: food insecurity, housing instability, and financial strain impact diabetes management through healthcare access
- Healthcare systems have limited mechanisms for addressing non-medical factors, leading to disparities in diabetes outcomes.
- This quality improvement project integrated a multidisciplinary approach involving PharmD, front desk staff, physicians, and social workers to improve glycemic control.

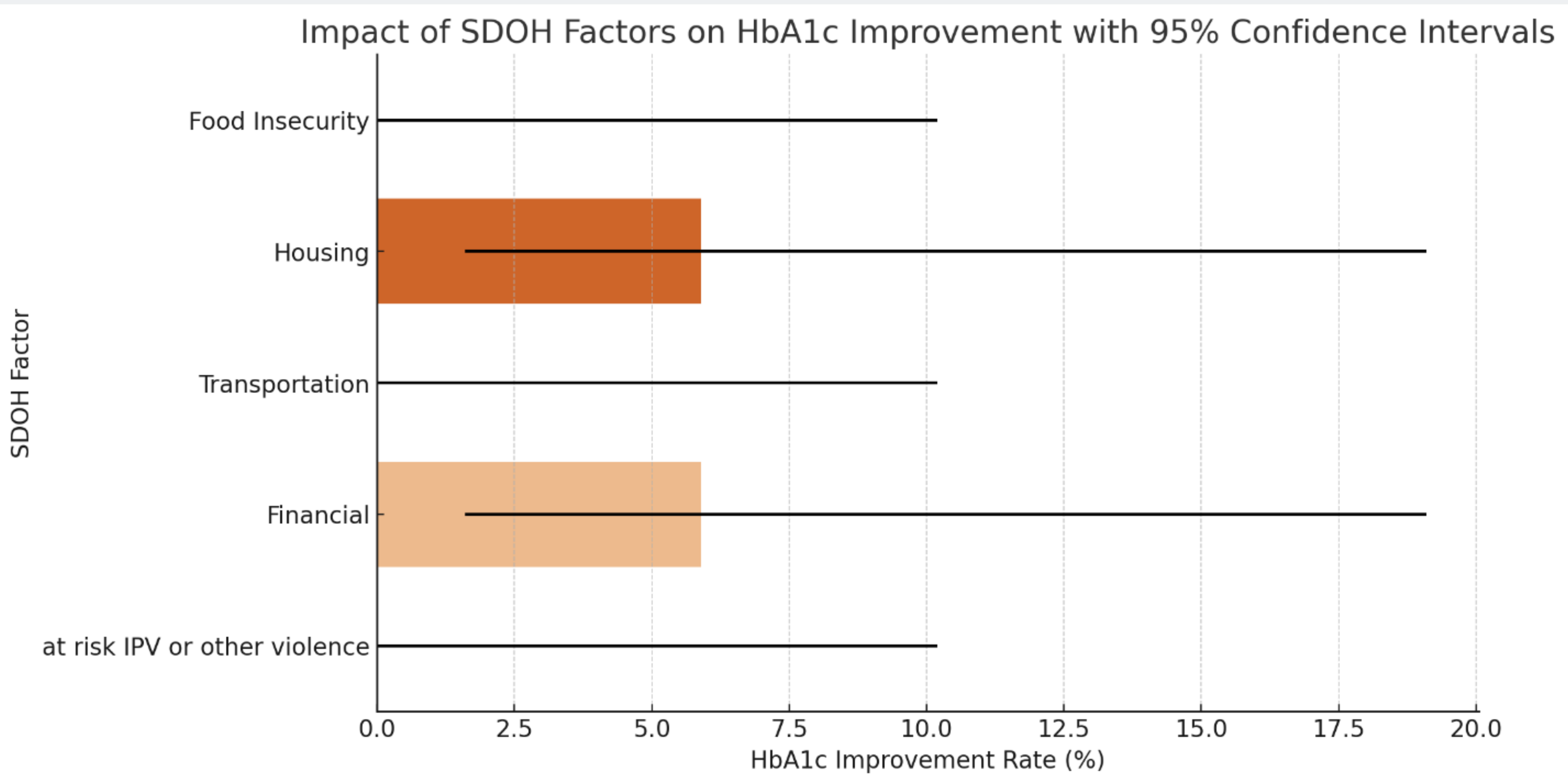
## Methods

- Setting: UPMC Family Medicine in Altoona, PA; patients with pre-recorded HbA1c levels were screened for SDOH needs.
- Intervention: Patients received social work assistance if they had food insecurity, transportation issues, housing instability, or financial strain.
- Analysis: Paired t-tests assessed pre-post HbA1c changes; chi-square tests evaluated associations between SDOH burden, insurance type, and glycemic improvement.

## RESULTS



- Figure 1: This bar graph categorizes patients into improved, no change, and worsened HbA1c outcomes.
- Figure 2: Medicaid and Medicare patients experience greater social hardships. Food insecurity, housing instability, and financial strain were the most common SDOH factors across all insurance groups.



- Figure 3: The bar graph with error bars shows how each SDOH factor affected HbA1c change. Housing and financial insecurity had the strongest negative associations with improvement

## Results

- HbA1c Improvement and SDOH Impact: The mean HbA1c decrease of 0.45 ( $p = 0.13$ ) suggests a positive but non-significant trend in glycemic improvement.
- Patients with higher SDOH burden showed less improvement, Geographic and Insurance Disparities: High-poverty ZIP codes had higher baseline HbA1c levels and showed less improvement post-intervention
- Housing and financial insecurity had the strongest negative associations with improvement

## Discussion and QI Recommendations

- SDOH interventions require ongoing engagement—one-time social work referrals may be insufficient for patients with complex social barriers.
- Insurance disparities impact diabetes management—patients with private insurance showed greater HbA1c improvement than those on Medicaid/Medicare.
- Multidisciplinary approaches to diabetes care can lead to HgA1C reduction which may lead to reduced disease morbidity and mortality