Examining Individual Factors to Explain Overdue A1Cs in Patients with Type 2 Diabetes - A Multnomah County Diabetes Project

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Background

Over 30 million people in the United States have type 2 diabetes. Patients are not achieving the recommended control to prevent complications. The American Diabetes Association (ADA) recommends visits every 3 to 6 months depending on A1C level. Worse diabetes outcomes are seen in minorities and individuals in poverty. Numerous resources related to the social determinants of health (SDOH) are related to diabetes status and those with less available socioeconomic resources have worse disease control.

Problem

Multnomah County Health Centers (MCHCs) treat a population with a high number of underserved minority groups and people who are near or below the poverty line. Some of the patients with type 2 diabetes are not receiving regular diabetes care, specifically return visits for A1C testing. Numerous patients are greater than 1 year since their last A1C test, for beyond the recommended timeframe put forth by the ADA. Frequent diabetes-related appointments also help with other care elements important to diabetes like blood pressure, lipids, and other metrics.

Purpose

The Health Resources & Services Administration (HRSA) provides federal funding to the Multnomah County Health Department (MCHD) to help with care of underserved populations. HRSA requested MCHCs to examine patients about these patients in order to find ways to correct overdue A1Cs.

Methods

Setting

Patients from 7 primary care MCHCs were surveyed by primary care medical assistants (PCMAs) using an ASC based CRI tool and integrated Clinical Information Systems (CIS) department. The MCHCs included: 1) Southeast Health Center (SEHC) 2) Northwest Health Center (NHWC) 3) Mid-City Health Center (MCHC) 4) East County Health Center (ECHC) 5) Rockwood Health Center (RWHC) 6) North Portland Health Center (NPHC) 7) La Cumbre Health Center (LCHC).

FINDINGS

Understanding of illness

A1C overdue had more detailed answers to knowledge questions on survey, 98.8% (37/37) versus 83.8% (5/6) (p=0.0024). A1C overdue had two diabetes complications per person (p<0.05, 1.75; 0.75), less total medications (64 vs 87), less diabetes medications (1.51; 1.86), and less likely to use insulin (2.4; 4.26). No statistically significant differences between the two groups.

Physical Health

A1C overdue had more with diabetes for 2 years (116/19 vs 39.9/11). A1C overdue had been A1C tested 3 times in 5.7 years while A1C overdue tested 7 times in 9.7 years, and A1C overdue had tested 3 months after the survey compared to 2 months before the survey. These were the most significant findings in the project. Before the survey, the A1C overdue group had better diabetes control with less complications. These differences were found in both groups, but more so in the overdue group. There was a discrepancy between the perceived knowledge, self-efficacy and diabetes control when compared to actual diabetes status in both groups, but more so in the overdue group.

Mental Health

No statistically significant differences between the two groups, include lower self-reported diabetes control, stress, depression, and lower use of behavioral health appointments.

Data Analysis

Use measures of central tendency (most commonly mean) and frequencies/percentages to compare between the two groups. Chi-squared measurements (with Bonferroni correction), independent t-tests, and paired t-tests as inferential statistics comparing groups.

Proposed Interventions

- Must be a current patient of a MCHCs
- Must be 18 years or older
- A1C overdue had more detailed answers to knowledge questions on survey, 98.8% (37/37) versus 83.8% (5/6) (p=0.0024). A1C overdue had two diabetes complications per person (p<0.05, 1.75; 0.75), less total medications (64 vs 87), less diabetes medications (1.51; 1.86), and less likely to use insulin (2.4; 4.26). No statistically significant differences between the two groups.

Conclusions

- The automated vendor would use this report to begin sending messages to patients, but patients would be responsible to call back and schedule the appointment.

References

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Summary

This study illustrates how fragile diabetes control can be without consistent follow up. This study shows a variety of factors which may affect a person’s ability to attend A1C testing and the association between those factors may offer insight into important findings with and without significant statistical significance pointed towards language, insurance, health knowledge, perception of diabetes (BMI), and diabetes status as important reasons why patients are missing A1C testing, but this is not a definitive list and is not helpful to guide future research. Once the automated vendor is implemented, a program evaluation will be completed to determine if the vendor is being used as intended and if this is helping to reduce A1C overdue.

Implementation of Findings

- An automated phone message script was developed to inform patients to call MCHD to schedule a visit for a lab test, while at the same time continuing to verify current status.
- The automated vendor would use this report to begin sending messages to patients, but patients would be responsible to call back and schedule the appointment.
- This message was to be sent by a MCHD automated telephone vendor which was being used for already scheduled appointments.
- The automated vendor would use this report to begin sending messages to patients, but patients would be responsible to call back and schedule the appointment.

Next Steps

- The project was put on hold for two reasons:
  1) The individual clinics needed to assess lab capacity given the possibility of an influx of patients.
  2) The automated phone vendor being used at MCHD was in the process of changing and it was agreed to implement the intervention once the new vendor is roughly 2 to 3 months instead of a implementing twice