Improving Diabetic Control for Patients with Type 2 Diabetes Mellitus in a Primary Care Clinic using Nurse-led Telephone Follow-up: A Quality Improvement Project

Mandy Truong, BSN, RN

Department of Nursing, Johns Hopkins Community Physicians, Bethesda, MD

Background

- Type 2 diabetes mellitus (T2DM) affects 38 million people in the United States, costs $413 billion annually, and has severe micro- and macrovascular complications
- Reducing the rate of uncontrolled and unreported hemoglobin A1c (HbA1c) is a core quality metric and Health People 2030 goal to promote optimal patient outcomes
- There is a need for a standardized protocol for nursing staff at the primary care clinic to follow up with patients with uncontrolled and unreported HbA1c

Aim of the Project

To implement and evaluate a scripted telephone protocol for T2DM adult primary care patients with unreported or elevated HbA1c levels
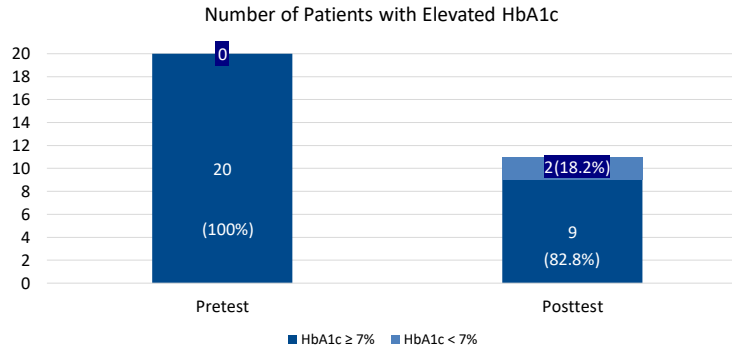
- **Aim 1:** reduce the proportion of patients with HbA1c greater than 7% by 30%
- **Aim 2:** reduce the proportion of patients who have not received an HbA1c test within the past year by 50%

Methods

- **Setting**: Internal Medicine primary care practice
- **Target**: Patients with T2DM who have not received HbA1c test within the past year or patients whose HbA1c in the past year was greater than 7%
- **Intervention**: A scripted nurse-led telephone protocol focusing on blood glucose monitoring, healthy diet, regular exercise, medication adherence, and health surveillance including yearly eye exams, foot exams, and kidney health evaluations.
- **Data collection**: Chart audits will be done before and after intervention to assess HbA1c levels of participants
- **Quality Improvement Model:** Knowledge to Action Framework. Literature searches and American Diabetes Association (ADA) guidelines inform the creation of the scripted protocol. The Action Cycle includes the adaptation of knowledge into local contexts through collaboration with multiple disciplines. The intervention is then refined to suit the practice environment.

Results

Comparison of the Proportion of Patients with HbA1c over 7% Pre and Posttest

Number of Patients with Elevated HbA1c

Paired t-test to Assess Difference in Mean HbA1c

	Mean (SD)	N	t	df	Sig. (2-tailed)
Pretest HbA1c	9.645 (2.12)	11	2.593	10	0.027
Posttest HbA1c	8.464 (1.58)	11			

Comparison of the Proportion of Patients with Missing HbA1c Pre and Posttest

Number of Patients with Unreported HbA1c
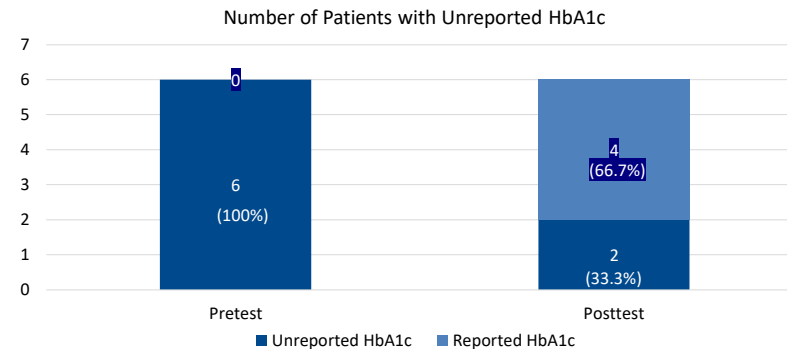
References

Discussion

- ➢ The proportion of patients with HbA1c over 7% reduced by 18.2% (Aim 1 not met)
- ➢ The proportion of patients with unreported HbA1c reduced by 66.7% (Aim 2 met)
- ➢ Although Aim 1 was not met, there was a significant statistical reduction in HbA1c level after intervention (p=0.027)

Barriers:
- Staffing changes and nursing shortage
- Deferral of HbA1c recheck due to patients' health

Limitations:
- Short implementation period and 3-month wait time for repeat HbA1c
- High attrition rate (45%) in the Aim 1 group

Conclusion

Good diabetic control results in better patient outcomes, decreases healthcare costs, and increases compliance with organizational and national standards.

Implications for Practice
- Telephone follow-up can improve diabetic care, along with usual follow-up and diabetic self-management education (DSME) program

Spread and Sustainability
- Continue to identify barriers to implementation, suggest solutions, and provide interdisciplinary support
- Discuss with stakeholders on how to incorporate protocol into regular workflow (e.g., lab results discussion, new diagnosis, newly elevated HbA1c, etc.)
- Break down protocol into smaller manageable parts to increase retention and reduce time-on-phone

Lessons Learned
- Future studies should look at patients who received no phone calls to compare the effectiveness of the intervention
- Due to the short implementation period, other health surveillance metrics (eye exam, foot exam, kidney health evaluation) should be investigated. A longer implementation period is needed if HbA1c is the outcome measures.