Evaluating the Impact of Hemoglobin A1C Point-of-Care Testing at a Primary Care Clinic

Rachel M. DeCoster, APRN, MSN

Vanderbilt University

Evaluating the Impact of Hemoglobin A1C Point-of-Care Testing in a Primary Care Clinic

Rachel M. DeCoster, APRN; Jason Jean, DNP, RN, FNP-BC; Queen Henry-Okafor, PhD, FNP-BC, PMHNP-BC

Vanderbilt University School of Nursing

SCHOOL OF NURSING
VANDERBILT UNIVERSITY

INTRODUCTION

Introduction

- Diabetes affects nearly 34 million Americans
- 7th leading cause of death in the U.S.
- A leading cause of mortality in Kentucky
- $327 billion spent annually on diabetes-related costs
- The ADA– "Standards of Medical Care" recommends HBA1C measurement every 3 months if uncontrolled (>7%) and every 6 months if controlled (<7%)to track qualitative aspects of the disease
- This multifactorial (clinical and organization/administrative) measure is recognized by the Centers for Medicare and Medicaid Services (CMS) pay-for-performance programs
- Timely measurement of HBA1C is central to quality of care, improving patient outcomes, and reducing cost of care, thus emphasizing the need for implementation of standing orders to facilitate increased frequency in HBA1C testing through POC testing (Kristensen, et al., 2020)

Problem

- WMA has been unable to reach Comprehensive Diabetes HBA1C control measures which are calculated by:
  - _HBA1C (>9%) and/or HBA1C not performed_

Clinic diabetes prevalence
Target comprehensive HBA1C control performance: **82%**
Current WMA performance: **74%**

Aim

- Specific aim: Increase Comprehensive Diabetes HBA1C Control Quality Measure
  - Secondary aim: Development and implementation of a HBA1C POC standing order at WMA
  - Tertiary aim: Evaluate provider and staff satisfaction regarding implementation

Objectives

1. Review current diabetes HBA1C control data beginning Jan 2021
2. Convene pre-implementation focus group Sept 2021
3. Implement a HBA1C POC standing order on Nov 2021
4. Measure success of project implementation by evaluating pre- and post- implementation quality metrics
5. Conduct post-implementation survey
6. Analyze practice improvement project data

METHODS

Plan
- Establish participant team
- Create an isolated HBA1C POC standing order
- Conduct a pre-implementation focus group
- Conduct an educational session with office staff
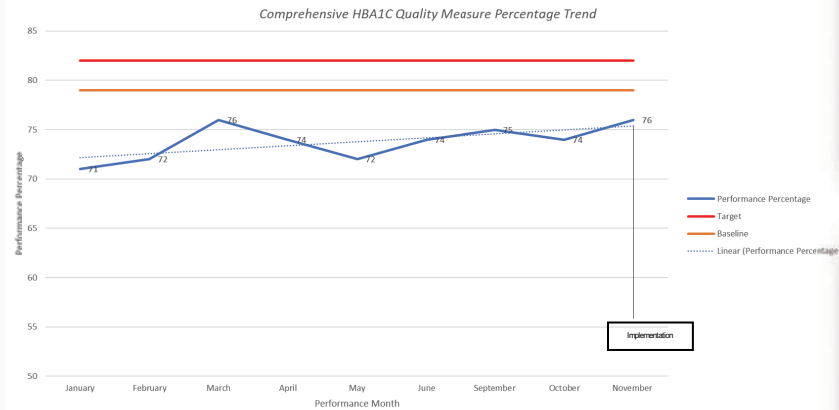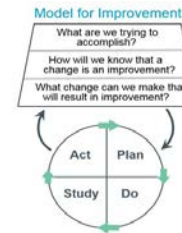- Implement standing order utilizing POC device

Model for Improvement
What are we trying to accomplish?
How will we know that a change is an improvement?
What change can we make that will result in improvement?
Act | Plan
Study | Do

Do
- Data recorded in Excel spreadsheet
- Calculate descriptive statistics

Study
- Descriptive statistics analyzing study personnel, pre- and post-implementation perceptions, and central point HBA1C performance percentage
- Identify practice performance gaps

Act
- Combine administrative need with improved clinical outcomes
- Adapt/Adopt the HBA1C POC Standing order into routine clinical practice within 30 days of post-implementation data analysis

Comprehensive HBA1C Quality Measure Percentage Trend

SURVEY RESULTS
N= 12 participants

Perception Themes	Pre-Implementation	Post-Implementation
Impact of HBA1C POC testing on staff and clinic flow	+ Standing orders make decision clear for medical assistants -May require extended patient-provider interaction time	100% of participants reported: + HBA1C standing order useful within the practice + Enriched discussions with patients regarding diabetes management
Impact of HBA1C POC on Clinical decision making	+ Rapid results provide prompt decision making + Improved patient-provider interactions	100% of participants reported: + Allows for prompt education and medication management + Increased patient satisfaction
Perceptions of quality measures and the impact they have	+ Perceived increased compensation and revenue for organization - Provider feels held responsible for patients' lack of adherence to treatment	+ Implementation of HBA1C POC standing order could be a model for CommonSpirit + Implementation will help combat practice related issues

IMPLICATIONS FOR PRACTICE

- Improving values such as HBA1C measurements also reduces morbidity and mortality along with decreased healthcare costs.
- The implementation of a HBA1C POC standing order can lead to improved and efficient workflow along with increased patient, provider, and staff satisfaction.
- 100% of participants perceived the standing order made a positive impact and would continue to utilize in routine practice.

REFERENCES

1. American Diabetes Association. (2020). _Standards of Medical Care in Diabetes – Abridged for Primary Care Providers._ https://clinical.diabetesjournals.org/content/early/2020/12/02/cd21-as01
2. Center for Disease Control and Prevention. (2020). _National Diabetes Statistics Report._ U.S. Department of Health and Human Services. https://www.cdc.gov/diabetes/pdfs/data/statistics/national-diabetes-statistics-report.pdf
3. Institute for Healthcare Improvement (2021). _Plan-Do-Study-Act (PDSA) Worksheet._ http://www.ihi.org/resources/Pages/Tools/PlanDoStudyActWorksheet.aspx

Outline

- ► Discuss diabetes epidemiology

- ► Define clinical problem

- ► Evaluate background clinical information

- ► Describe project framework

- ► Review proposed methods

- ► Present project outcomes

- ► Discuss implications for practice

- ► Conclusion

Introduction

➤ Diabetes affects nearly 34 million Americans

➤ 7th leading cause of death in the U.S.

➤ A leading cause of mortality in Kentucky

➤ $327 billion annually

➤ Comprehensive diabetes control is essential
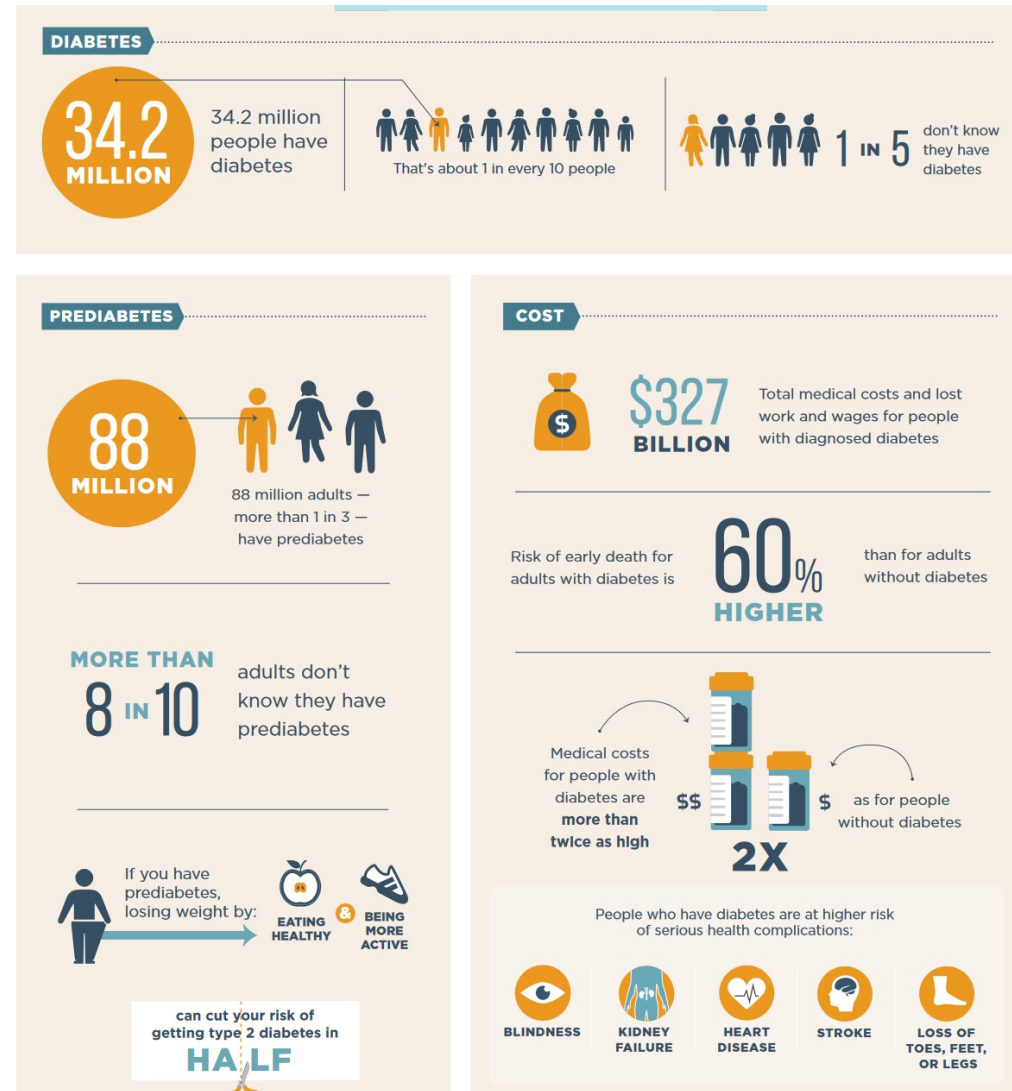
Problem

- Winchester Medical Associates has been unable to reach Comprehensive Diabetes HBA1C control measures

- Multifactorial (clinical and organization/administrative) based measure
  - Centers for Medicare and Medicaid Services (CMS) pay-for-performance programs

- Target comprehensive HBA1C control performance: **82%**
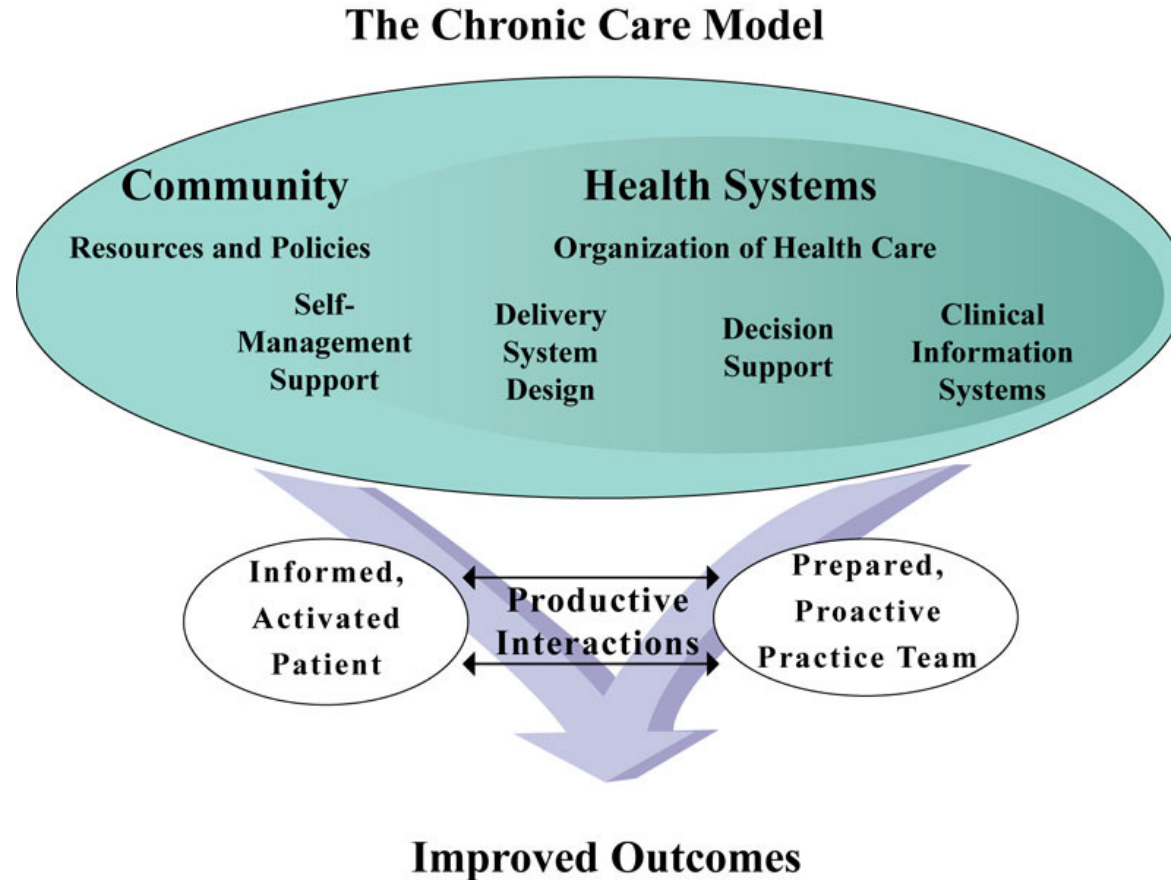- Current WMA performance: **74%**

Diabetes HBA1C Control Measure

$$\frac{HBA1C\ (>9\%)\ and/or\ HBA1C\ had\ not\ been\ performed}{Clinic\ diabetes\ prevalence} X\ 100$$

Purpose

- Specific Aim: Increase established Comprehensive Diabetes HBA1C Control Quality Measure
  - Target goal: 82%
  - Current baseline: 74%
  - Development and implementation of a HBA1C point of care (POC) standing order at WMA
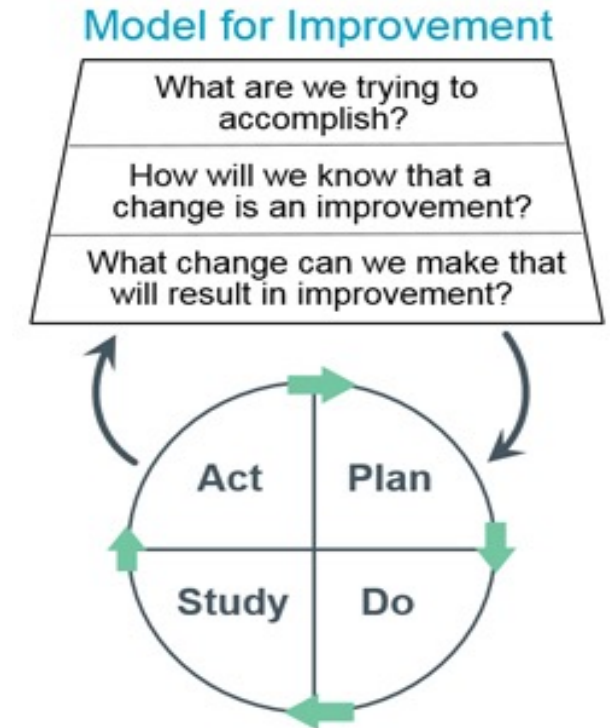
- Provider and staff satisfaction regarding implementation

Framework: The Chronic Care Model (CCM)

The Chronic Care Model

Community
Resources and Policies

Health Systems
Organization of Health Care

Self-Management Support | Delivery System Design | Decision Support | Clinical Information Systems

Informed, Activated Patient ←→ Productive Interactions ←→ Prepared, Proactive Practice Team

Improved Outcomes

Developed by The MacColl Institute
® ACP-ASIM Journals and Books

take to improve care for chronic illness? *Effective Clinical*

Fundamental Questions

► What are we trying to accomplish?
- — Reach target Comprehensive HBA1C measures of 82%
- — Implementation of HBA1C POC Standing Order
- — Achieve provider and staff satisfaction

► How will we know a change is improvement?
- — Comprehensive HBA1C quality measure of 82%
- — Perceived as useful, made a positive impact, and utilize in the future

► What change will we make that will result in improvement?
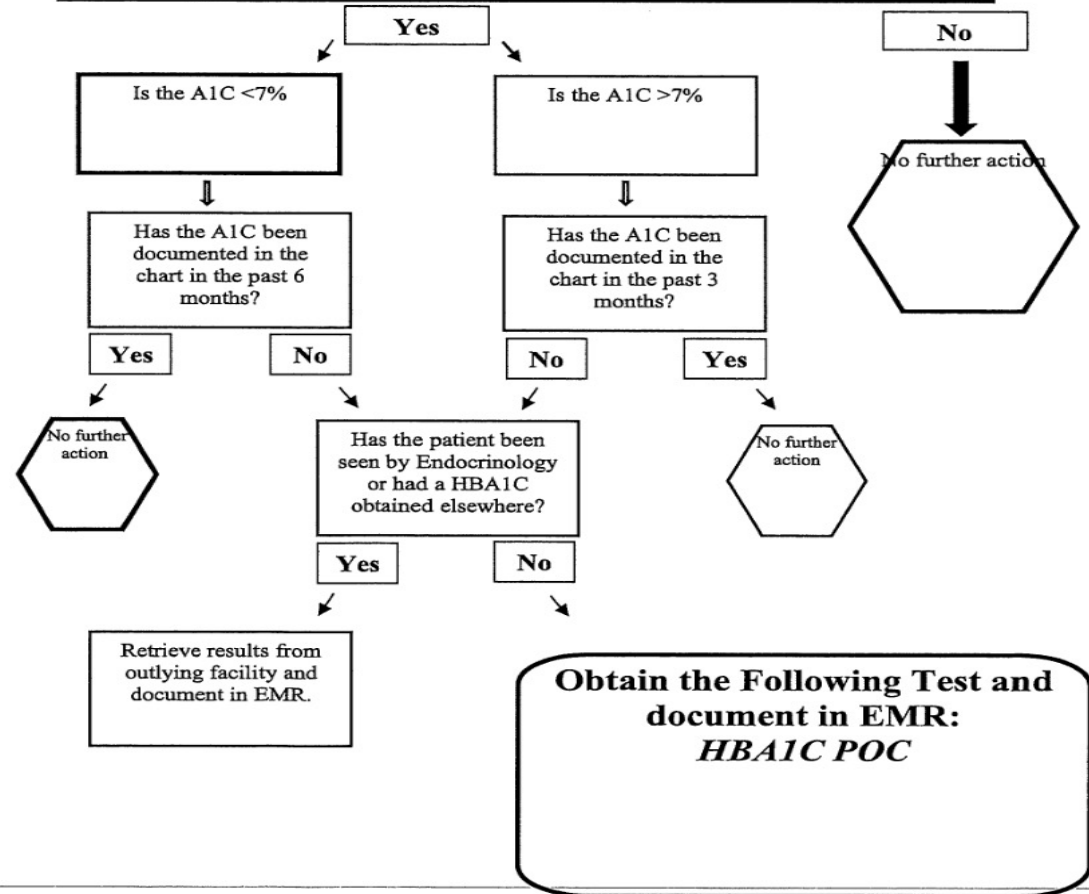- — HBA1C POC Standing Order

Model for Improvement

What are we trying to accomplish?

How will we know that a change is an improvement?

What change can we make that will result in improvement?

Act | Plan
Study | Do

Plan for Implementation (Plan)

Hemoglobin A1C Point-Of-Care Standing Order

Hemoglobin A1C: *If <7%, then every 6 months; If >7%, then every 3 months*

Decision Algorithm

1. Is the patient 18 years of age or older?
2. Does the patient have an active diagnosis of Diabetes listed in the Electronic Medical Record (EMR)?

Yes

No → No further action

Is the A1C <7%

Is the A1C >7%

Has the A1C been documented in the chart in the past 6 months?

Has the A1C been documented in the chart in the past 3 months?

Yes → No further action

No

No

Yes → No further action

Has the patient been seen by Endocrinology or had a HBA1C obtained elsewhere?

Yes

No

Retrieve results from outlying facility and document in EMR.

Obtain the Following Test and document in EMR:
HBA1C POC

Data Collection (Do)

► Pre-implementation focus group
- — Facilitators/barriers to standing order implementation

► Allscripts EHR utilized to obtain data
- — Extracted by quality improvement specialists

► Post-implementation survey
- — Perceptions of implementation

Analysis (Study)

► Plan for data analysis: Descriptive statistics

— Describe study personnel

— Analyze pre-implementation focus group and post-implementation survey

— Evaluate central point (Performance Percentage) pre-implementation and post-implementation comparison
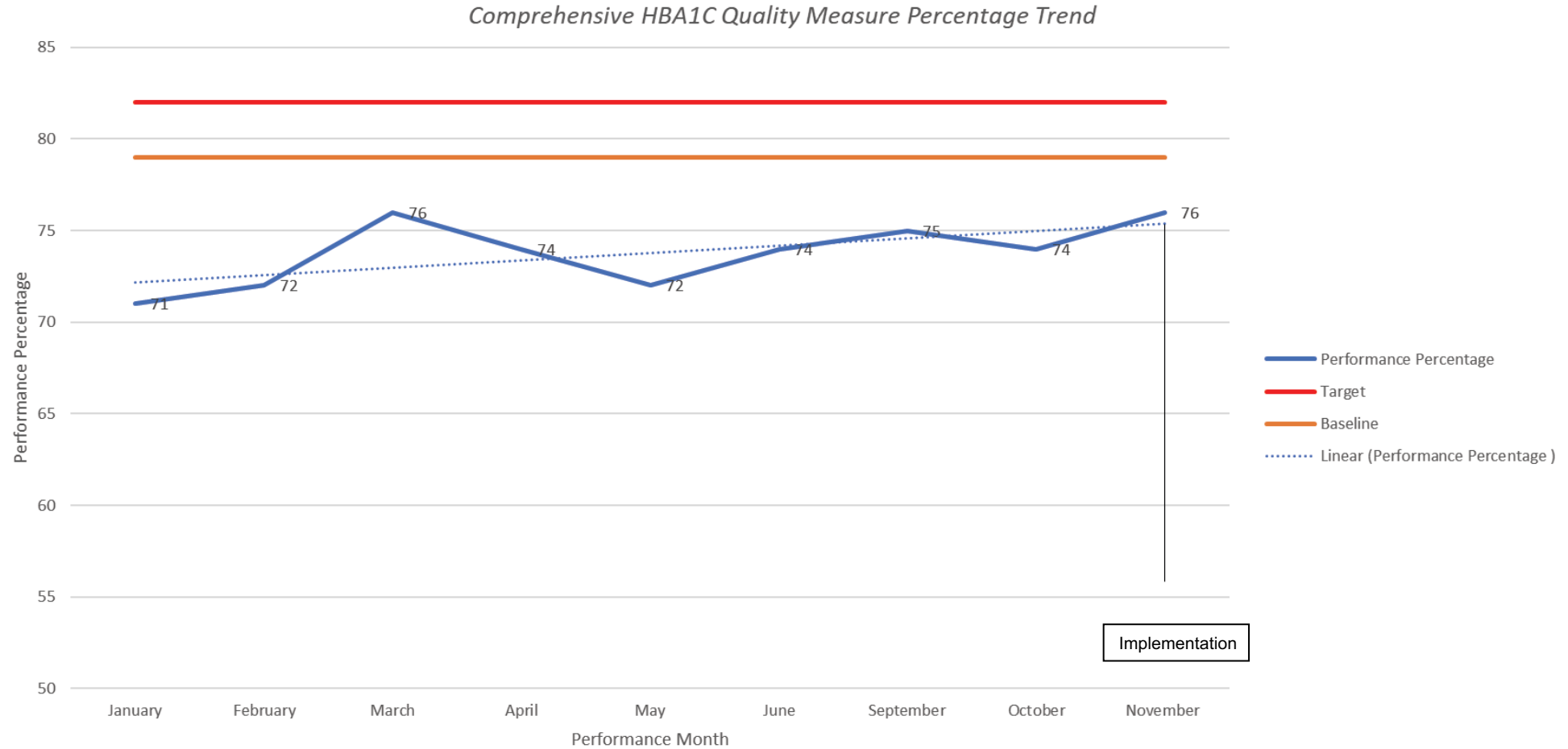
Utilization of Data (Act)

► Combine administrative/policy need with improved clinical outcomes

► Adapt/adopt the HBA1C POC standing order
  — Challenges anticipated

QI Participants

Characteristics	N =12 (%)
Clinic Role	
Providers	
Physician	1 (8.3)
Advanced Practice Registered Nurse	4 (33.3)
Certified Medical Assistants (CMA)	6 (50)
Office Manager	1 (8.3)
Gender	
Male	2 (17)
Female	10 (83)
Mean age, years	42 (25-50)
Mean years at clinic	10 (1-20)

Results

Comprehensive HBA1C Quality Measure Percentage Trend

Results contd.

Perception Themes	Pre-Implementation	Post-Implementation
Impact of HBA1C POC testing on staff and clinic flow	+ Standing orders make decision clear for medical assistants -May require extended patient-provider interaction time	100% of participants reported: + HBA1C standing order useful within the practice + Enriched discussions with patients regarding diabetes management
Impact of HBA1C POC on Clinical decision making	+ Rapid results provide prompt decision making + Improved patient-provider interactions	100% of participants reported: + Allows for prompt education and medication management + Increased patient satisfaction
Perceptions of quality measures and the impact they have	+ Perceived increased compensation and revenue for organization - Provider feels held responsible for patients' lack of adherence to treatment	+ Implementation of HBA1C POC standing order could be a model for CommonSpirit + Implementation will help combat practice related issues

Results contd.

Themes	Pre-Implementation	Post-Implementation
Impact of HBA1C POC testing on staff and clinic flow	• Standing orders make decision clear for medical assistants • May require extended patient-provider interaction time	• HBA1C standing order useful within the practice • Enriched discussions with patients regarding diabetes management
Impact of HBA1C POC on Clinical decision making	• Rapid results provide prompt decision making • Improved patient-provider interactions	• Allows for prompt education and medication management • Increased patient satisfaction
Perceptions of quality measures and the impact they have	• Increased compensation and revenue for organization • Provider feels held responsible for patients' lack of adherence to treatment	• Implementation of HBA1C POC standing order could be a model for CommonSpirit • Implementation will help combat practice related issues

Practice Implications

► Improving values such as HBA1C measurements may require more intensive time and effort before a change is made but is also important at reducing morbidity and mortality along with decreased healthcare costs.

► The implementation of a HBA1C POC standing order can lead to improved and efficient workflow along with increased patient, provider, and staff satisfaction.

► The immediate feedback of HBA1C POC testing can enhance patient/provider interactions and result in improved glycemic control and improved comprehensive HBA1C quality measures.

Conclusion

► With the increasing incidence of diabetes coupled with the increasing morbidity, mortality, and healthcare costs, it is critical that intervention is necessary.

► HBA1C POC standing order was positively perceived and implemented within the clinical setting and is a clear example of a way in which the quality of care for patients with diabetes can be improved.

► Persistent utilization of the HBA1C POC standing order will hopefully continue to improve the comprehensive HBA1C quality measure, further improving overall quality of care to individuals with T2DM.