

## Introduction

- Inpatient Diabetes Care and Education Program evaluation

## Objectives:

- Retrospective QI analysis to identify program impacts on patient outcomes, nursing confidence, glycemic control, and nursing documentation
- Make recommendations for translation of findings to the broader system-wide community

## Background and Significance

- 34.2 million, or 1 in 10, American adults have diabetes (Centers for Disease Control and Prevention (CDC), 2020)
- 20-40% of non-critically ill hospitalized patients have diabetes (Umpierrez & Pasquel, 2017)
- 70% of critically ill patients have diabetes (Umpierrez & Pasquel, 2017)
- American Diabetes Association (ADA) guidelines for inpatient glycemic control, diabetes education, and connection to outpatient resources for risk reduction and improved patient outcomes
- American College of Endocrinology (ACE)/ADA (2006) recommend inpatient diabetes nurse educator (IPDNE) role in hospitals

## Methodology

### Study Design

3-year retrospective QI program evaluation using CIPP model

### Setting

800-bed tertiary regional trauma center

### Study Population

- Adults (>= 18 years) with diabetes mellitus
- Nursing staff via anonymous survey

### Measures

- Inpatient glycemic control
- 30-day readmission rates
- Follow up visits at associated Education Center

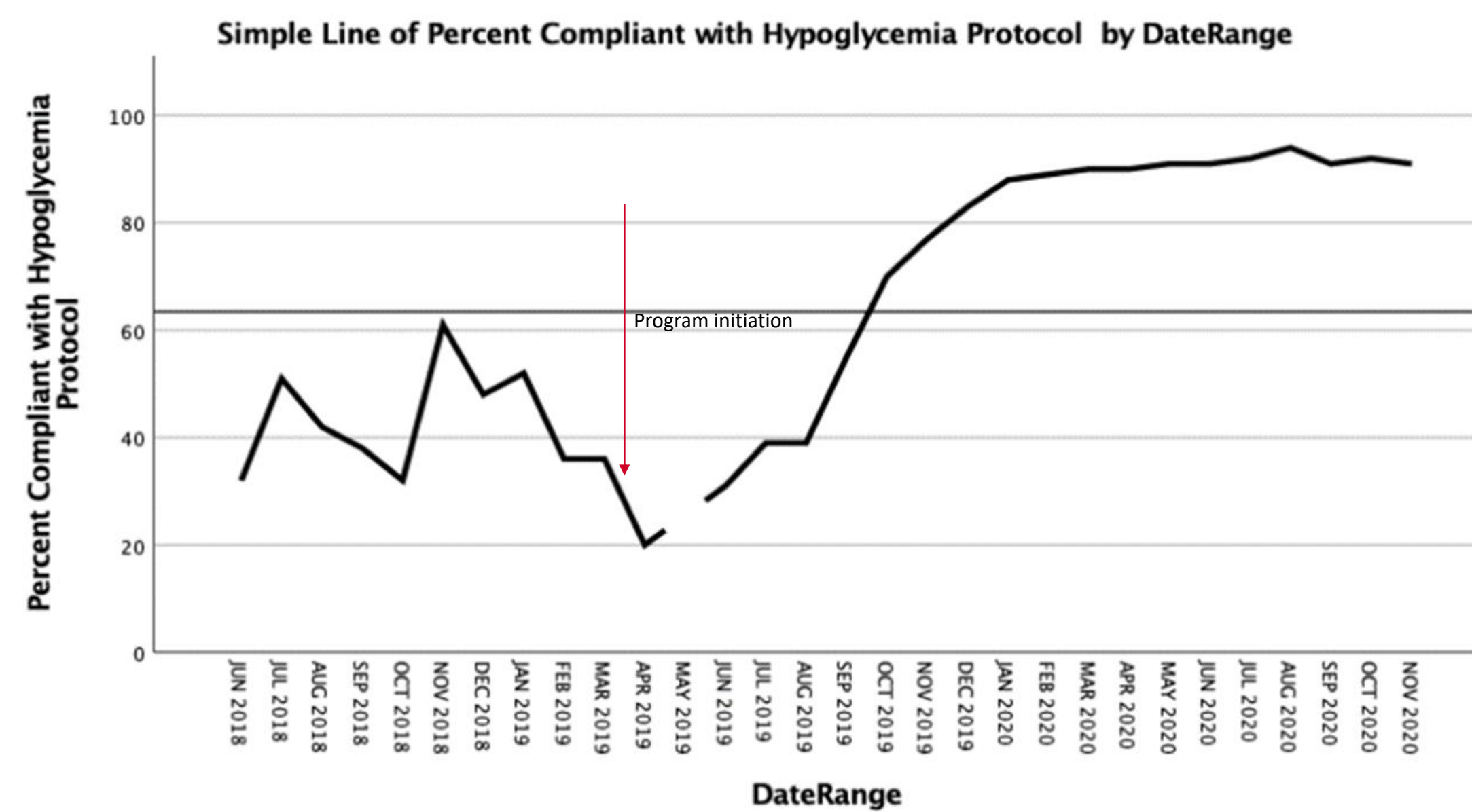
### Analyses

- Qualitative:* informed context and process of CIPP
- Organizational strategic planning for IPDNE role creation
  - Nursing staff survey responses
  - Committee meeting minutes

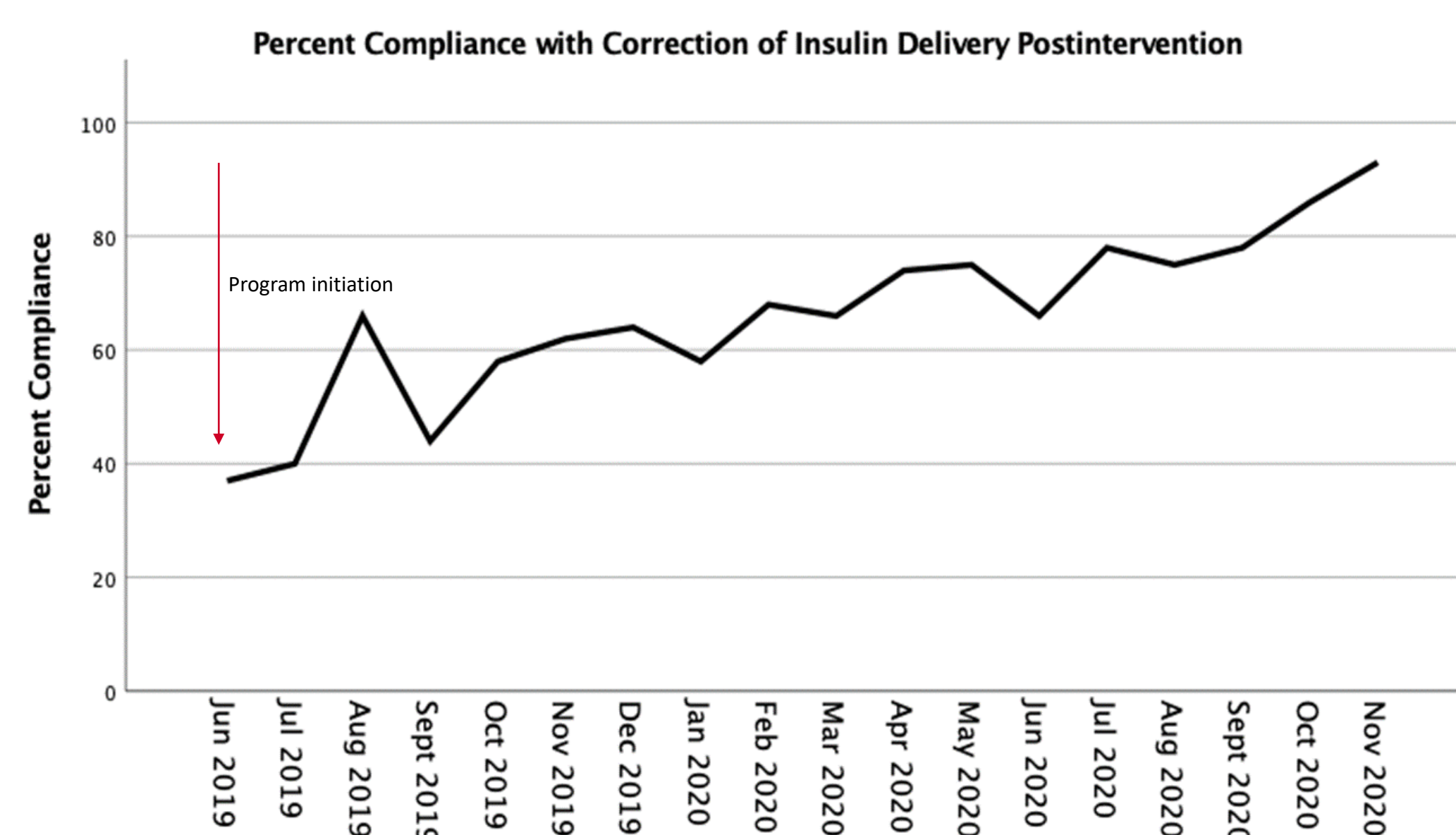
*Quantitative:* informed input and product of CIPP

- Hypoglycemia Protocol Compliance
- Correction Insulin Medication Errors
- 30-day Readmission Rates
- Outpatient visits

## Result (Hypoglycemia Treatment)



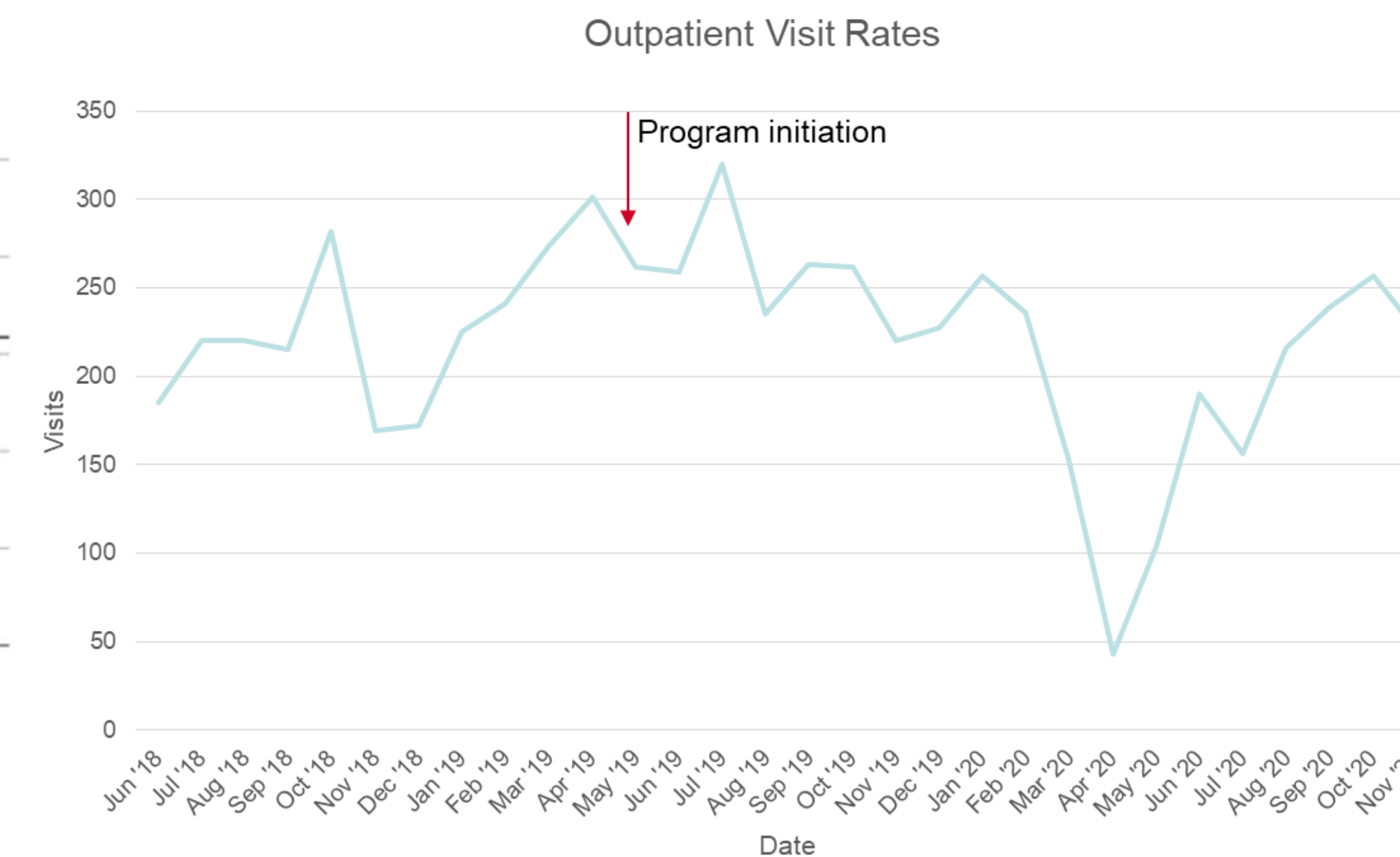
## Result (Reduction in Insulin Errors)



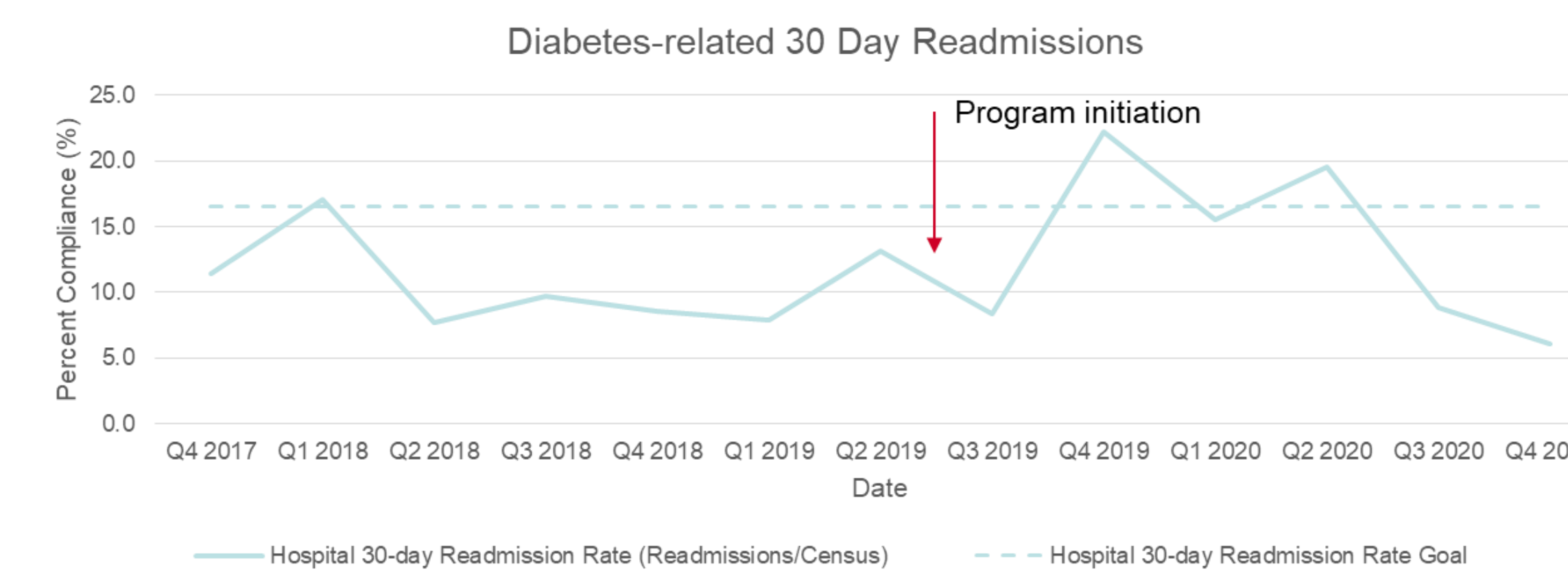
## Result (Nursing Comfort)

Diabetes Education Survey – Nursing Staff Responses		
	Pre-Intervention	Post-Intervention
Practice Materials (e.g. glucometer, insulin pens, sharps container, vials)	22 (24.4%)	76 (56%)
Written Materials	22 (24.4)	44 (33%)
Toolkit/Box	10 (11.1%)	10 (7%)
Visual tools (e.g. bulletin board)	-	4 (3%)

## Result (Follow Up Appointments)



## Result (30-day Readmissions)



## Discussion

- Inpatient Diabetes Care and Education programs should continuously be evaluated for effectiveness (ADA, 2020; TJC, 2020)
- Success is a multidisciplinary effort

## Implications

### Impact on Clinical Practice

- Evidence-based recommendations
- Higher quality of care and increased efficacy

### Impact on Healthcare Policy

- Policy revisions
- Consistency and ability to replicate program

### Impact on Quality and Safety

- Policy revisions and clinical practice updates
- Improved glycemic control, acute complications, and adherence with prescribed treatment regimens
- Positive impact on nursing care of the inpatient with diabetes, decreased length of stay, and decreased 30-day readmission rates

### Impact on Education

- Optimized patient and clinician education

## Conclusion

- CIPP model highlighted strengths and opportunities for improvement at the project site
- Strengths of the program
  - Compliance with hypoglycemia protocol and documentation
  - Reduction in insulin-related medication errors
  - Policies and clinical standards reflecting evidence-based guidelines
- Opportunities for improvement
  - Evaluation of COVID-19 impact on inpatient diabetes care
    - 30-day readmissions
    - Transitions of care
  - Opportunity to expand on additional analyses

## Sustainability

- Addressing barriers and program longevity
- Continuous evaluation using CIPP model and improvement initiatives
- Future DNP analysis for continuous improvement
- Findings presented to key stakeholders for internal growth and translation of evidence into practice
- Inpatient settings within the hospital system are adopting the framework of this program and evaluation to replicate a successful program with similar objectives

## Dissemination of Information

- Presented to Atlantic Health System and Rutgers University School of Nursing
- Manuscript submission
- Poster presentation at Rutgers University
- Submission for virtual and in-person conferences
- Association of Diabetes Care and Education Specialists National Conference (ADCES)
- American Nurses Association Quality and Innovation Conference

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## References

Refer to supplemental materials