

# Measuring Outcomes of Diabetes Management: A1c Trends in Comparison to Diabetes Education Utilization A Retrospective Cohort Study



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## INTRODUCTION

An increasing population of Americans are struggling with diabetes and the long-term sequelae of DM and/or prediabetes, namely the cardiovascular risks that contribute to many of the top causes of morbidity and mortality here in rural SW Oklahoma. Unfortunately, many Americans (especially the SW Oklahomans in our demographic) do not have adequate education on lifestyle modification, particularly diet improvement, when it comes to adequately managing glucose control.

## OBJECTIVES

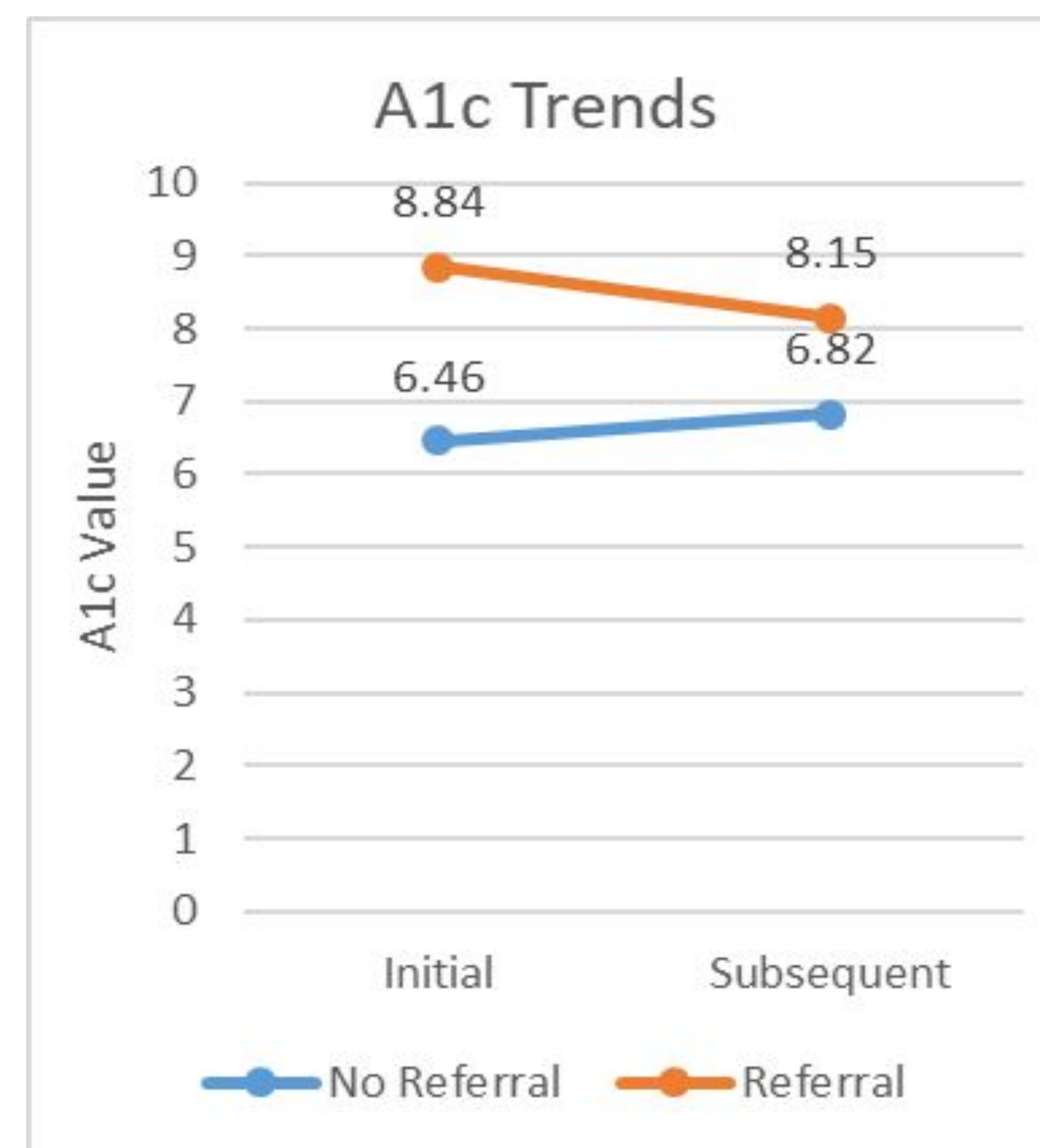
In this study, we aim to measure the trends of A1c numbers over at least 6 months in adult diabetic patients of LCHC who attend diabetes education. This study will attempt to show the effectivity of nutritional counseling/diabetes education referral in diabetic adults as a means of improving patient education in regards to their eating habits. By demonstrating this effectiveness with (hopefully) positive results, we hope to promote increased nutritional/diabetic counseling referral in the future of our clinic.

## METHODS

This retrospective cohort study is designed to demonstrate the effectiveness of diabetes education objectively through trends of A1c numbers. We will statistically analyze the A1c's of diabetics who attend diabetes education sessions over a period of at least six months. As a control group, we can compare A1c number trends over a similar period of time in diabetics that did not attend diabetic education. This data will be gathered from Lawton Community Health Centers electronic health records over a study period from January 1 2021-June 30 2022.

## RESULTS

### A1c Trends With and Without Diabetic Education



Over 12,000 Patients were enrolled in this analysis across multiple outpatient locations in the Lawton Community Health Centers network of clinics. Of diabetics who got referral for diabetic education, the average initial A1c was noted to be 8.84. In this cohort, their most recent A1c's were noted to be an average of 8.15. Although not yet at goal of 7, there was a measured improvement of lowered A1c values of 0.69 points on average. In a control cohort group, we measured average A1c numbers over a similar period for patients who did not receive referral to diabetic education. Initial average A1c was noted to be 6.46 and the subsequent most recent A1c was noted to be 6.82. This actually showed a measured increase of A1c values of 0.36 on average. According to our analysis, those who got diabetic education referral had a demonstrable improvement in A1c, whereas, those who did not had a demonstrable worsening in A1c values.

In this study, we aimed to use this study as a motivation across our clinics to promote referral to diabetic education. Of note, and the cohorts that we analyzed, patients who received referral to diabetic education had demonstrably improved A1c's as compared to those who did not receive referral to diabetic education. Our data also showed that those who did not receive referral to diabetic education actually had statistical worsening of their A1c lab values.

Secondarily, another trend was noticed in our statistical analysis. Those he received referral to diabetic education did so add an average A1c of 8.84. However, those who did not receive referral to diabetic education had an initial A1c value in our study of 6.46. This finding seems to suggest that practitioners have a higher threshold of referring to diabetic education than should be desired. According to these numbers, practitioners did not refer to diabetic education until the A1c reaches a value of nearly 9. To correlate with this evidence, we suggest that practitioners should try to lower their threshold for referral to diabetic education as it can demonstrably decrease A1c.

## CONCLUSION

Our analysis shows that referral to diabetic education does demonstrably improve A1c's, with an improved value on average of 0.69 points per patient. Practitioners know all too well the risks to cardiovascular morbidity and mortality that diabetes incurs. We also know that both oral and IM pharmacologic treatment as well as diet modification/improved exercise regimen can demonstrably improve A1c's with statistical significance. However, this data suggests that we are not often enough seeking referral for diabetic education for our patients that have elevated A1c's. Diabetic education can assist with patient management of diabetes in the realms of both pharmacologic management and lifestyle modification. We hope in the future to use these findings to encourage better referral practices to diabetic education.

## REFERENCES

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