Hemoglobin A1c Tracking: Retrospective Review of Electronic Medical Records of Spanish-speaking patients at a safety-net clinic in Albany Oregon

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Background / Introduction

- Approximately 306,000 people in Oregon, or 9.5% of the adult population have been diagnosed with diabetes. Every year an estimated 20,000 people in Oregon are diagnosed with diabetes. Diagnosed diabetes costs an estimated $4.3 billion in Oregon each year. There are 1,097,000 people in Oregon, 33.5% of the adult population, who have prediabetes. Serious complications include heart disease, stroke, amputations, end-stage kidney disease, blindness and death. [1]
- Hispanic/ Latino American adults have a greater than 50% chance of developing type 2 diabetes, compared to a 40% chance for the rest of the adult U.S. population. [2]
- Hemoglobin A1c (HbA1c) levels are used by healthcare teams as markers to diagnose diabetes. By assessing HbA1c levels, recommendations in treatments and changes in lifestyle can be made to address or prevent diabetes. [3]
- An HbA1c of > 9.0% indicates poorly controlled diabetes. [4]
- Albany InReach Services provides free medical care to low-income adults who are uninsured or underinsured. Most of InReach patients are Hispanic.

Project Aim, Goals and Objectives

To gain an understanding of the prevention and management of type 2 diabetes in uninsured and underinsured Hispanic patients of Albany InReach Services by tracking their HbA1c levels and comparing them to the American Diabetes Association's cutoff value for T2DM of 6.5% and the CMS value for poorly controlled diabetes of 9.0%

Methods/Project Design

A retrospective review was conducted, analyzing HbA1c levels of Spanish-speaking clients at Albany InReach Services (n = 229) from their electronic medical records (accessed via Epic) between 2013 to 2018

Four categories were set based on HbA1c levels:

- HbA1c < 5.7% = Normal
- HbA1c > 5.7% to < 6.5% = Pre-diabetic
- HbA1c ≥ 6.5% to ≤ 9% = Diabetes
- HbA1c > 9% = Poorly-controlled diabetes

Results

- Out of the 229 patients, 22 (9.6%) were diagnosed with diabetes at some point during the selected timeframe.
- HbA1c levels of 19 of the 22 patients were obtained. 3 of the 22 patients had no HbA1c values found through our analysis.

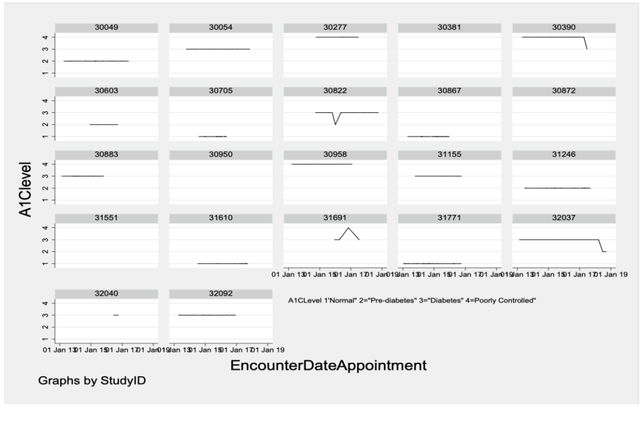


Fig 1. Plots indicate HbA1c category (1 = normal, 2 = prediabetes, 3 = diabetes, 4 = poorly controlled diabetes) for the 22 patients diagnosed with diabetes at some point between 2013 to 2018. Flat lines indicate a single data point across the line (likely due to an error in data collection). Shifts in the line indicate actual changes in HbA1c category (5 patients showed such changes).

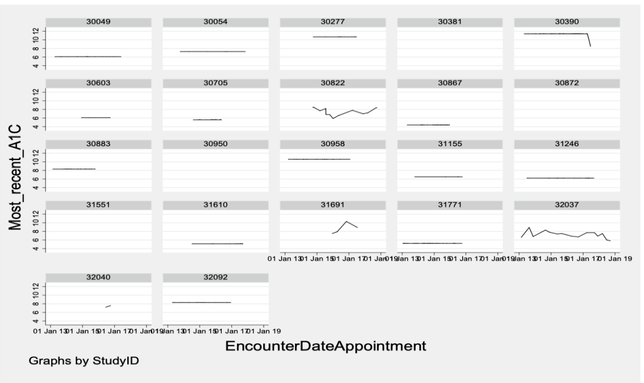


Fig 2. Plots depicting actual HbA1c values. As in Fig 1, flat lines indicate a single data point whereas shifting lines indicate actual fluctuations as reported in the electronic medical records.

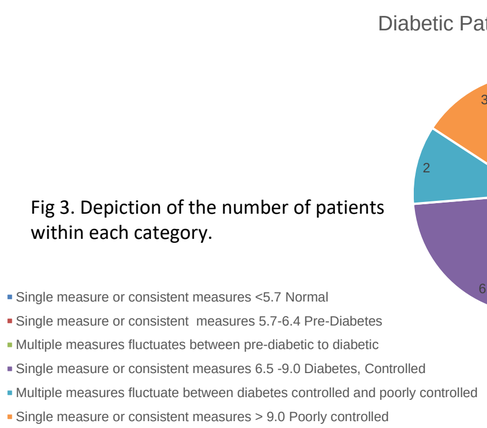
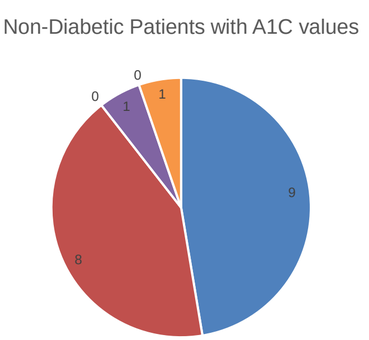


Fig 3. Depiction of the number of patients within each category.



Conclusion

The sample population used in this study displayed a rate of diabetes (9.6%) that is similar to the rate of diabetes in Oregon's adult population (9.5%).

Of the 5 patients who did show fluctuations in HbA1c levels through the 6-year period that was selected, 1 showed an improvement (from poorly-controlled diabetes to diabetes) while the other patients remained within their HbA1c category. While the data is limited, the lack of improvement in these patients may indicate the need for involvement of free clinics, health care system, policy makers, and community organizations to address health disparities in diabetes.

Limitations

Trends in HbA1c levels were limited to 5 of the 22 patients diagnosed with diabetes that were analyzed in this study. Data errors or inconsistency might have occurred because multiple individuals with varying experiences were involved in data collection.

Future Directions

Explore systematic methods to track HbA1c values of InReach patients. Automate reports of diabetic patients who have not completed recommended labs. Follow up with patients with high HbA1c levels to confirm if their diabetes is poorly controlled. Connect patients to culturally appropriate diabetes prevention and educational programs to ensure that they have a usual source of care and to end health disparities in high-risk and vulnerable populations.

References/Acknowledgements

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