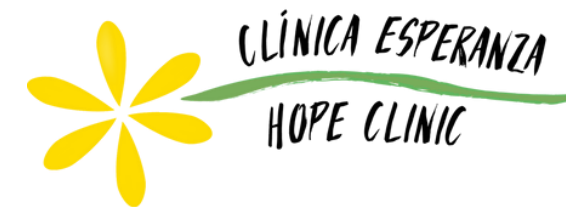# Quantifying Quality of Care at a PA Student-Led Free Diabetes Clinic

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BACKGROUND & PURPOSE

The aim of this study was to evaluate the quality of care given to an underserved diabetic population utilizing a PA student-led model.

Free clinics provide a safety net for accessible healthcare to the uninsured. They are often staffed using a medical student-run model. In 2017, a PA student-run clinic was implemented to provide care to the subset of patients with diabetes mellitus (DM) within an existing free clinic, Clínica Esperanza/Hope Clinic (CEHC), which primarily serves the Spanish-speaking population of Providence, Rhode Island (RI). Free clinics and their programs should self-evaluate to ensure the populations they serve receive healthcare comparable to the local or national standard of care. We aimed to assess the PA-student (PA-S) DM Clinic by comparing Quality of Care Indicators (QIC) to RI state data.

- 34 Million (**1 in 10**) people in the U.S. have DM[1]
- **$327 Billion** in healthcare costs due to DM[1]
- **50%** of Hispanic men & women will develop DM[1]
- Approximately **8%** of people with DM are uninsured, with *even higher uninsurance rates in minority populations*[2,3]

METHODS

We used methodology adapted from Ryskinda and colleagues.[4] Patient charts were reviewed for the PA-S DM Clinic. Data were manually transferred from the electronic medical record to a standardized database.

Quality of Care Indicators (per patient 12-month period)
- Number of visits
- Number of HbA1c tests
- Number of foot exams

Inclusion Criteria
- Diagnosis of DM (I or II): diagnosed at another clinic or by a provider at CEHC

Exclusion Criteria
- < 2 visits to PA-S DM Clinic
- Prediabetes: HbA1c < 6.4

Data Analysis
- Patient data were compared to state data obtained from the 2017 Behavioral Risk Factor Surveillance System (BRFSS) using two sample t-tests. 2017 BRFSS data were chosen for comparison because it assessed specific QICs for DM.

ACKNOWLEDGEMENTS

DEMOGRAPHICS

Table 1. Pertinent patient population-related values

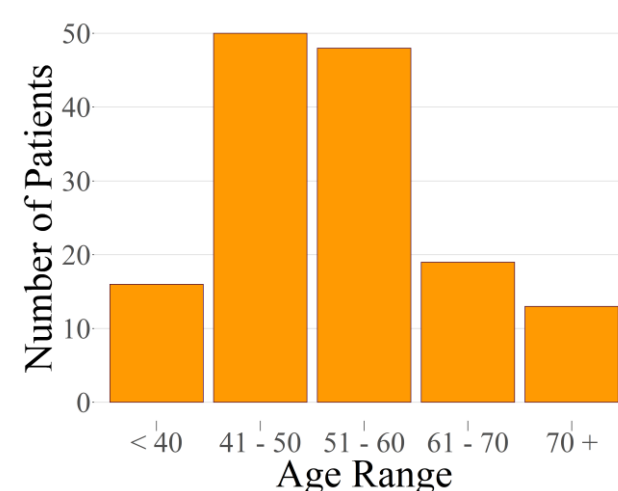|	Number of Patients
Total Patients	147
Hispanic ethnicity	131
Spanish primary language	131
Female:Male	71:76

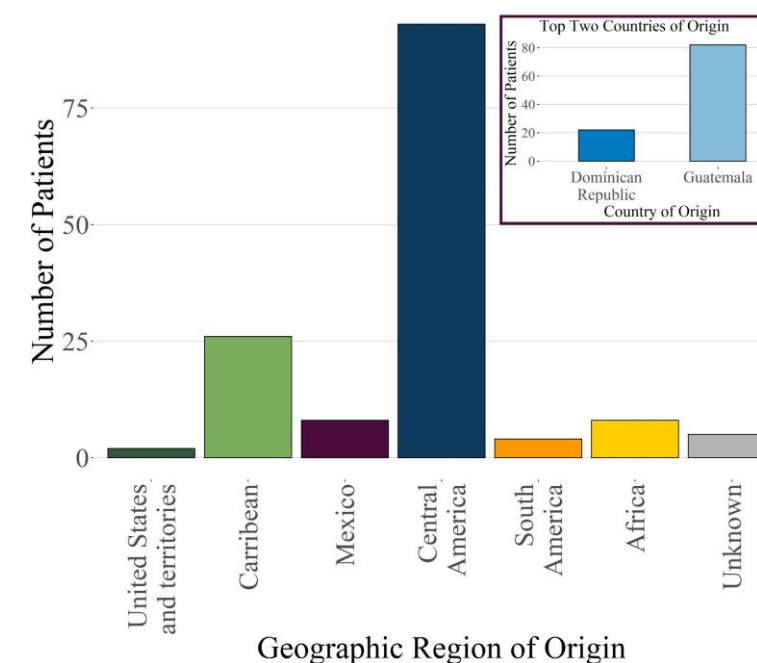Figure 1. Patient age range. All patients were over 18 years old.

Figure 2. Patient geographic origin. Most patients originated from outside the U.S., with the two most common countries being Guatemala and the Dominican Republic.
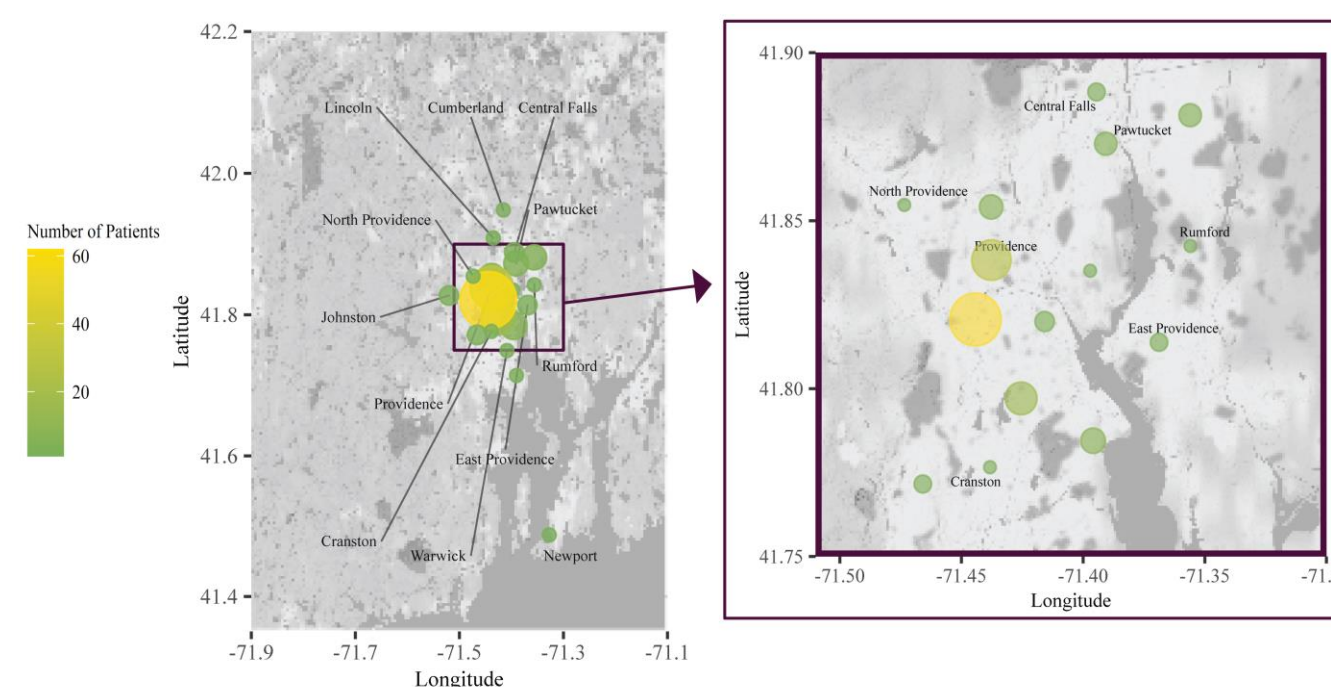

Figure 3. Map of the greater Providence area displaying the geographic extent of the patient population served by the PA-S DM Clinic.

RESULTS

Table 2. Comparison of RI data obtained from 2017 BRFSS and PA-S DM Clinic patient data. Statistical tests were considered significant at P ≤ 0.05.

Quality of Care Indicators	Rhode Island Data	PA-S DM Clinic	P-value
First Patient Year			
Number of Patient Visits	3.07 ± 3.83	3.57 ± 2.16	0.06
Number of HbA1c per Patient	2.62 ± 3.35	1.96 ± 1.08	<0.001
Number of Foot Exams per Patient	2.46 ± 4.43	2.80 ± 1.75	0.16

	Rhode Island Data	PA-S DM Clinic	P-value
Second Patient Year			
Number of Patient Visits	3.07 ± 3.83	2.48 ± 2.21	0.16
Number of HbA1c per Patient	2.62 ± 3.35	1.45 ± 1.15	<0.001
Number of Foot Exams per Patient	2.46 ± 4.43	2.45 ± 2.20	0.996

DISCUSSION

Data were analyzed from the clinic's inception in 2017 through 2019. For number of patient visits and number of foot exams per patient 12-month period, clinic data exceeded or was comparable to RI state data. The number of HbA1c tests per patient 12-month period in our data set was significantly lower than RI state data. However, one current limitation of the data is that HbA1c tests obtained at CEHC, but outside of the PA-S DM Clinic, were not incorporated for this analysis. The current number of HbA1c tests do not reflect the continuity of care between CEHC and the PA-S DM Clinic, as the real number is higher. We believe based on the current data set that the PA-S DM Clinic is providing care that is comparable to care received throughout the state of Rhode Island.

These analyses are a first step in compiling a larger data set for publication. The compilation and analysis of these data are important because there are currently no studies evaluating the efficacy of a free clinic sustained by the PA student-led, PA-supervised model.

CONCLUSIONS

- The PA-S DM Clinic at CEHC is providing comparable DM healthcare to that provided at the RI state level.
- Number of patient visits and foot exams meet or exceed state data.
- Further conclusions are pending full incorporation of HbA1c data from CEHC.
- This study represents one of the first evaluations of a primarily PA student-led, PA-supervised free clinic.

Future Directions
- Incorporate HbA1c tests obtained outside the PA-S DM Clinic at CEHC
- Analyze additional QICs: HbA1c control, lipid monitoring, blood pressure monitoring, retinopathy screening, other preventative care measures
- Compare PA-S DM Clinic QICs to national data

For more information about CEHC

Take a photo

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2. Myerson R, Romley J, Chiou T, Peters A, Goldman D. The Affordable Care Act and Health Insurance Coverage Among People With Diagnosed and Undiagnosed Diabetes: Data From the National Health and Nutrition Examination Survey. 2019;42(11):e179-180. https://doi.org/10.2337/dc19-008.
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4. Ryskina K, Meah YS, Thomas DC.Quality of Diabetes Care at a Student-Run Free Clinic. J Health Care Poor Underserved. 2009; 20 (4):969-981