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Title: The Impact of Clinical Pharmacist Led Comprehensive Medication Management on Diabetes Care at Federally Qualified Health Centers within the *BD Helping Build Healthy Communities* Program

Running Title: Impact of CMM on Diabetes Outcomes in FQHCs

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We would also like to acknowledge Chandni Gilbride's support in developing the template, coordinating the partners, and assisting with overall management of the partners.

Conflict of Interest

Sonak Pastakia serves as a consultant for BD and Direct Relief and assisted with the analysis and writing of this paper. He was only given access to de-identified aggregated data which was supplied by the awardees without any modification.

Abstract

INTRODUCTION: The *BD Helping Build Healthy Communities*™ (HBHC) program is a philanthropically funded initiative designed to provide support for comprehensive medication management (CMM) services at Federally Qualified Health Centers (FQHCs) to support care for low-income populations.

OBJECTIVES: The primary outcome of interest was the change in glycosylated hemoglobin (HbA1c) between baseline and six months with changes in systolic (SBP) and diastolic blood pressure (DBP) between baseline and six months being evaluated as secondary outcomes.

METHODS: Awardees of the HBHC program who provided clinical pharmacist led CMM services in 2017, 2018, or 2019 to address the needs of people living with diabetes, were asked to complete a standardized monitoring template to evaluate their progress in serving patients receiving care at their clinic. The data from these reports was then analyzed using the paired t-test to identify statistically significant changes in HbA1c, SBP, and DBP.

RESULTS: A total of eight FQHCs, providing care to a total of 2,502 patients, received funding within the HBHC program for their CMM activities related to diabetes. Within the primary outcome analysis of the change in HbA1c at six months, a statistically significant reduction in average clinic HbA1c between baseline and six months (9.4 vs 8.2, mean difference 1.2, 95% CI [0.45 – 1.97, $p<0.01$]) was observed. Similarly, a statistically significant reduction was observed between baseline and six months for SBP (140.8mmHg vs 130.2mmHg, mean difference 10.5, 95% CI [2.2mmHg - 18.9mmHg, $p<0.05$] and DBP (83.1mmHg vs 78.9mmHg, mean difference 4.15, 95% CI [0.48mmHg - 7.82mmHg, $p<0.05$]).

CONCLUSION: The CMM activities within the HBHC program were able to demonstrate statistically significant reductions in HbA1c and blood pressure. Despite the inherent limitations associated with a retrospective analysis with diminishing patient follow-up over 24 months, this analysis shows that investment in clinical pharmacist led CMM could potentially have positive impacts on clinical outcomes for patients receiving care at FQHCs. Additional rigorous studies are needed to confirm the findings seen in this analysis.

Keywords: Federally qualified health centers, diabetes, clinical pharmacy, philanthropy, medication therapy management

Introduction

Socioeconomically disadvantaged populations in the United States of America continue to suffer disproportionately from myriad health challenges as their access to healthcare services continue to be limited.(1) This lack of access has led to a continued reliance on Federally Qualified Health Centers (FQHCs) across the United States of America which often serve as a safety net for patients without health insurance or those with government subsidized healthcare through programs such as Medicaid.

FQHCs often operate under limited budgets despite being one of the main providers of primary care for socioeconomically disadvantaged populations. They are responsible for the care of nearly 30 million patients annually, 67 percent of whom earn an income below the federal poverty guideline.(2) The challenges socioeconomically disadvantaged patients face are further compounded by the increased burden they face from chronic medical conditions such as diabetes.(3)

In addition to facing a higher prevalence of diabetes, socioeconomically disadvantaged patients also face higher rates of complications from diabetes than other populations.(4, 5)

One approach which has been used to improve outcomes for patients receiving diabetes care is the integration of the clinical pharmacist into the care continuum to provide comprehensive medication management (CMM). Clinical pharmacists providing CMM typically provide more direct patient care by optimizing medication therapy while promoting health and disease prevention. Prior systematic reviews have found that focused medication therapy management may reduce nonadherence and lower health care use and costs.(7) More specifically, the integration of CMM provided by pharmacists in FQHCs has been shown to assist in the

maintenance of HbA1c's ≤9% and blood pressure <140/90 mmHg. These targets for glycemic control and blood pressure are of importance as they are recommended monitoring parameters federal agencies use when evaluating FQHCs.(8, 9)

The budgetary shortfalls FQHCs often face have forced many to operate in a minimalistic fashion, often leaving limited flexibility for incorporating novel services like CMM, which are not consistently reimbursed through Medicaid.(10, 11) As an alternate solution, non-federal funding sources, especially philanthropic funders, could play an important role in providing these centers with funds and resource to introduce novel programs designed to improve the care of vulnerable patient populations.

It is with this backdrop that BD (Becton, Dickinson and Company), in collaboration with Direct Relief (DR) and the National Association of Community Health Centers (NACHC), have established the *BD Helping Build Healthy Communities*™ (HBHC) program. BD's role within this project is to provide the philanthropic contribution to establish this program. Direct Relief is a not-for-profit humanitarian agency with the goal of providing humanitarian assistance for people impacted by emergencies or poverty.(12) They are responsible for managing the overarching program and coordinating all the activities. NACHC is one of the leading advocacy groups for community health centers committed to promoting efficient, high quality, comprehensive health care that is accessible, culturally and linguistically competent, community directed, and patient centered for all.(13) They helped design the program and make FQHCs aware of this funding opportunity. These partners have worked together to promote, develop, and monitor activities within the HBHC program.(14)

Since 2013, BD has provided funding to FQHCs to expand access and improve care for underserved populations in the U.S. A total of 39 health centers have received $5.8 million in funding for their innovative approaches in patient care. These activities have historically covered a wide range of care services and approaches with awardees over the last three years focusing on CMM. The most common illness which HBHC funded CMM programs addressed was diabetes. To review the impact of their investment, a formal evaluation was conducted to determine whether these efforts were leading to demonstrable improvements in care.

This paper retrospectively assesses the impact of investment on clinical pharmacist led CMM on the clinical outcomes of patients with diabetes who were enrolled in programs supported by the HBHC program. Additional details on the number of applications, geographical distribution, and logistical aspects of implementing the program will also be described to guide others interested in developing philanthropic programs to support care for patients at FQHCs, free and charitable clinics, and other nonprofit primary care organizations.

Methods

The HBHC program has partnered with and offered funding to FQHCs, which have a documented history of offering high-quality and comprehensive preventative and primary care services to underserved populations, regardless of ability to pay.

Prior to being given full consideration by the review committee, applicants provided documentation that met the eligibility criteria listed in Table 1.

Upon meeting the eligibility criteria, applications were reviewed by a team of external clinical pharmacists with expertise in CMM, staff from NACHC, and staff from Direct Relief. All

eligible applications were scored according to the evaluation criteria listed in Table 1. Scores were then tabulated, and on-site visits and interviews with executive and clinical staff were coordinated for the top applicants. During the on-site visit, finalists were scored one last time with winners selected based on the combination of proposal evaluation scores and in-person visit scores.

The proposed assessment included winners from 2017, 2018, and 2019 who utilized the grant funding to support the integration of clinical pharmacist led CMM for patients with diabetes in their clinic. Awardees who focused their efforts on other disease states or did not include CMM activities were not included in this analysis as illustrated in Figure 1. Each program which used the funding to support CMM activities for diabetes added their own context-specific adaptations to complement the work of the clinical pharmacist providing CMM. Programs were able to use the funding however they decided with most using the funding to cover a mix of pharmacist salaries, patient supplies, and care coordination as seen in Table 3. Awardee activities typically included a range of five core elements; 1) review of medication therapy, 2) creation of a personal medication record, 3) development of a medication related action plan, 4) intervention or referral for identified health issues, and 5) documentation and follow-up of all activities and/or recommendations.(6) The clinics all operated under protocols which governed their practice with five of the awardees operating under formal collaborative practice agreements which enabled pharmacists to directly prescribe changes to medication therapy.

In order to standardize the evaluation across the different awardees, each health center was asked to complete a standard template summarizing the impact of their HBHC funded efforts on commonly used clinical markers recommended by federal agencies.(15, 16) This included commonly used parameters like glycosylated hemoglobin (HbA1c) and blood pressure.

Awardees were advised to use whichever modality of testing they typically used in providing care and no distinction was made between HbA1c assay methods applied. With regards to blood pressure, all reported measurements were clinic-based with centers using a combination of automated and manual cuffs as described in Table 3. Clinics typically did one resting blood pressure during the visit and only repeated it if they had a reason to suspect that it was not accurate. If they had two readings, they used their clinical judgment to determine which one to report in their electronic medical record (EMR) and make clinical decisions from. Since the EMR was the source of all data, we analyzed whichever blood pressure they used for their clinical decision making.

Statistical Analysis

Descriptive analyses were used to describe the demographic characteristics of applicants and awardee clinics. The primary outcome evaluated was the change in the average HbA1c at the awardee clinics from baseline to six months. After the baseline evaluation, partners were instructed to record HbA1c, and blood pressure evaluations completed 4-8 months after baseline as the 6-month value. Similarly, awardees were instructed to utilize a ±2-month window for subsequent evaluations at 12, 18, and 24 months. The individual enrollment date for each participant established the timeline for reporting of results. If two recordings were captured within the same window, awardees were instructed to report the result closest to the time interval of interest.

In addition to the evaluation by each awardee clinic, a separate descriptive analysis was completed to show the overall average HbA1c at each time interval when weighted by the number of patients at each clinic to adjust for the different number of patients enrolled within

each clinic. This was done to ensure that the scale of each clinic was factored into the analysis to reflect the change in HbA1c more accurately and other secondary outcomes at the prespecified time intervals. For secondary outcomes, the change in the average systolic (SBP) and diastolic blood pressure (DBP) from baseline to six months was assessed for patients with diabetes. The paired t-test was used to analyze the mean difference in average clinic HbA1c, SBP, and DBP with a p-value <0.05 being deemed statistically significant. Changes in these clinical markers were descriptively analyzed at 12, 18, and 24 months as there was insufficient data to perform meaningful statistical analysis. Stata (College Station, TX) was used to perform all analyses. Because of the unexpected interruption caused by COVID-19, a revised sample size calculation was performed to determine whether meaningful analyses could be performed on the available pre-COVID-19 data to demonstrate if a clinically significant one-point reduction in HbA1c could be expected because of the proposed interventions, assuming 80% power, and an acceptable type 1 error level of 0.05. A minimum of 7 participating FQHCs was required to achieve this threshold and supported continuation of this assessment despite the unexpected early termination due to the limitations presented by COVID-19.

Results

As seen in the Study Summary Flow Chart in Figure 1 and maps in Figure 2, a total of 195 applications were received from programs across the United States in 2017, 2018, and 2019. Of these applicants, 22 received on-site interviews with 16 winners each receiving $200,000 grants (over two years) of which 11 applied to manage some aspect of diabetes. Eight programs had a large concentration on diabetes and were able to provide baseline and six-month follow-up data. One of the programs split the funding across two distinct clinic sites within their program leading to a total of nine clinics providing data for this analysis. A total of 2,502 patients providing

12,978 months of follow-up were assessed over the period of evaluation. These patients came from FQHCs serving a racially diverse population from all the five major geographic regions of the U.S. including its territories. The racial diversity of the overall patient population served by each clinic can be seen in Table 2. **(17)**

The primary outcome analysis demonstrated a statistically significant reduction in average clinic HbA1c between baseline and 6 months (9.4% vs 8.2%, mean difference 1.2%, 95% CI [0.45%-1.97%, $p<0.01$]) as seen in Figure 3. Patients who were followed up beyond six months demonstrated sustained reductions in HbA1c, however, the number of clinics and patients contributing data progressively declined with only 43 patients providing HbA1c data at 24 months. In the weighted analysis, which factored in the number of patients at each clinic, the baseline HbA1c of 9.7% dropped to 8.7% after six months with reductions persisting over the 24-month evaluation as seen in Table 4.

In the secondary analysis of blood pressure changes amongst patients with diabetes, a statistically significant change in systolic and diastolic blood pressure was seen between baseline and six months (SBP 140.8mmHg vs 130.2mmHg, mean difference 10.5, 95% CI [2.18-18.88, $p<0.05$], DBP 83.1mmHg vs 78.9mmHg, mean difference 4.15, 95% CI [0.48-7.82], $p<0.05$) as seen in Figure 4. Patients who were followed up beyond six months demonstrated sustained reductions in blood pressure; however, diminishing numbers of clinics and patients contributed data past 6 months. In the weighted analysis at six months, the baseline SBP of 141.8mmHg and DBP of 82.7mmHg dropped to 129.9mmHg and 78.2mmHg, respectively.

Discussion

The diabetes related activities of awardees participating in the HBHC program were able to demonstrate a clinically significant and statistically significant reduction in the HbA1c of participants with diabetes. As FQHCs continue to try to maximize the impact they can have on patient outcomes, the positive improvements achieved through clinical pharmacist led CMM suggests that this may be a useful modality of care meriting further evaluation at a larger scale. The results seen here are consistent with other evaluations of clinical pharmacist led medication therapy management and CMM on diabetes care. A Cochrane review looking at the impact of clinical pharmacist care around the world found that patients receiving medication therapy management services experienced a mean HbA1c lowering of 0.77%. (18) Similarly, a trial examining the impact of clinical pharmacists working at FQHCs across Ohio, found that pharmacists were able to help 60% of patients with uncontrolled diabetes achieve an HbA1c below 9% which is also one of the key goals of the national Healthy People 2020 and 2030 goals.(9, 19)

In addition to the well-documented reductions in morbidity and mortality associated with HbA1c reductions, these sustained reductions are associated with considerable cost savings to the healthcare system.(20) It has been estimated that the maintenance of a 1% drop in HbA1c can save between $685-$950 dollars per patient each year to the healthcare system in the U.S.(21) With past studies highlighting the disproportionately poorer control underserved minority populations in the US have, impactful philanthropic investments which target these populations could result in significant cost savings for the health system.(5)

The introduction of clinical pharmacists within the care cascade for patients with diabetes receiving care at FQHCs may be especially impactful because of the emphasis clinical pharmacists place on providing contextualized and time intensive education for patients. While a cost savings analysis was not performed in this study, it is likely that considerable savings were realized because of the HbA1c reductions.

This analysis demonstrates the ability of FQHCs to quickly implement innovative health programs that have clear clinical significance in the populations they serve. As seen in Figure 3, the change in HbA1c by six months indicates rapid and effective management of blood glucose levels. The sustained reductions observed for patients who contributed data beyond six months illustrates the potential for CMM to positively impact patients over a longer duration if they remain in care. The broad monitoring framework established through this program also created a methodology to track metrics across multiple health centers despite the many differences between the disparate clinics.

FQHCs are unique in that their approach to care often stems from the communities they serve. Challenges in a rural community may differ from those in an urban or suburban community, particularly for diabetes care, but identifying and addressing those challenges by using a community-centered approach helps build trust between the patient and health care team, which in turn improves patients' lives. The HBHC program was designed with the intention of promoting community-centric approaches which help FQHCs improve outcomes for their patients. The clinical pharmacist led CMM approaches at FQHCs described in this paper helped achieve these goals, as the pharmacists involved in this program frequently commented about how they were able to spend more time with patients to help overcome many of the unique

barriers they face while managing their diabetes. While the role of clinical pharmacists in improving diabetes care has been previously described, this analysis provides additional support for the impactful role clinical pharmacists can play in improving the care of patients with diabetes at FQHCs.

While the rising incidence of chronic disease is challenging, best practices to improve management and care have emerged and FQHCs across the nation have developed innovative and cost-effective strategies for preventing and treating patients with these complex conditions. This aggregation of data provided the ability to demonstrate the significant impact that private funding may bring for health centers addressing chronic disease.

Limitations

As seen in table 4, the number of patients contributing data to this analysis decreased at each follow-up interval. This was an anticipated limitation as clinics often have staggered enrollment into these services. Unfortunately, additional assessment of the potential causes of these trends was not possible as the awardees enrolled patients at different times over the two-year period of the award and were unable to determine whether patients were lost to follow-up or simply not enrolled in the program long enough to contribute data. To address this in future evaluations, awardees will be asked to provide more detailed tracking of patients to determine if they are truly lost to follow-up. This will facilitate a more comprehensive assessment of the impact of this treatment approach.

Because of the desire to avoid any undue influence on the reporting of results or tampering of the data, health centers were given initial instructions on how to complete the reporting templates

and not required to submit patient specific data. Furthermore, to limit the invasiveness of data reporting requirements for awardees and feasibility of providing data amidst their many patient care responsibilities, additional details on the patients and specific interventions were not captured by the awardees. While this restricted the rigor of the analyses possible, this separation helped minimize the introduction of bias as it minimized potential conflicts of interest as the analysis was limited to aggregated summary data provided by the awardees. The retrospective design of this assessment also limits the reliability of the results as a randomized control trial design would be needed to more definitively confirm the positive gains seen in this evaluation. This evaluation was also limited by the variability in methods to assess clinical parameters, such as blood pressure, where some clinics used automated blood pressure cuffs while others used manual blood pressure cuffs which can lead to variability in results.

Despite these limitations, this analysis provides valuable initial insights for healthcare systems and philanthropic funders considering investing in clinical pharmacist led CMM efforts to improve care outcomes for patients with diabetes receiving care at FQHCs.

As more companies affirm their interest in addressing inequities within society through corporate social responsibility initiatives, it is important that these efforts are accompanied by rigorous evaluation to assess whether they are having the intended impact on the populations of interest.(22, 23) This evaluation serves as a crucial step in ensuring that philanthropic arms of companies don't simply profess their desire to address inequities, but can prove they are having an impact. While this retrospective evaluation had several expected limitations, it serves as a valuable first step in assessing the potential impact of philanthropically supported clinical pharmacist CMM on glycemic control amongst patients receiving care at FQHCs. This analysis is especially timely considering the proposed legislation within HR bill 2759 which advocates

for reimbursement of clinical pharmacist CMM services within medically underserved areas. Additional prospective and more rigorous assessments of these activities should be pursued to confirm the findings reported here. Furthermore, based on recently released reports from the Institute of Medicine, responses to the social determinants of health should be included in the care provided by all pharmacists, especially for those receiving care at FQHCs.(24) Future philanthropic efforts from BD will promote this integration with the hopes of maximizing the impact of these investments for the underserved populations they target.

Conclusion

In conclusion, this report highlights the potential positive impact investments in clinical pharmacist led CMM can have on glycemic and blood pressure control amongst patients with diabetes receiving care at FQHCs. Despite the inherent limitations in the retrospective design of the assessment and declining availability of follow-up data, these initial findings suggest that philanthropic funders may play a positive role in funding impactful CMM strategies for improving diabetes care for underserved populations.

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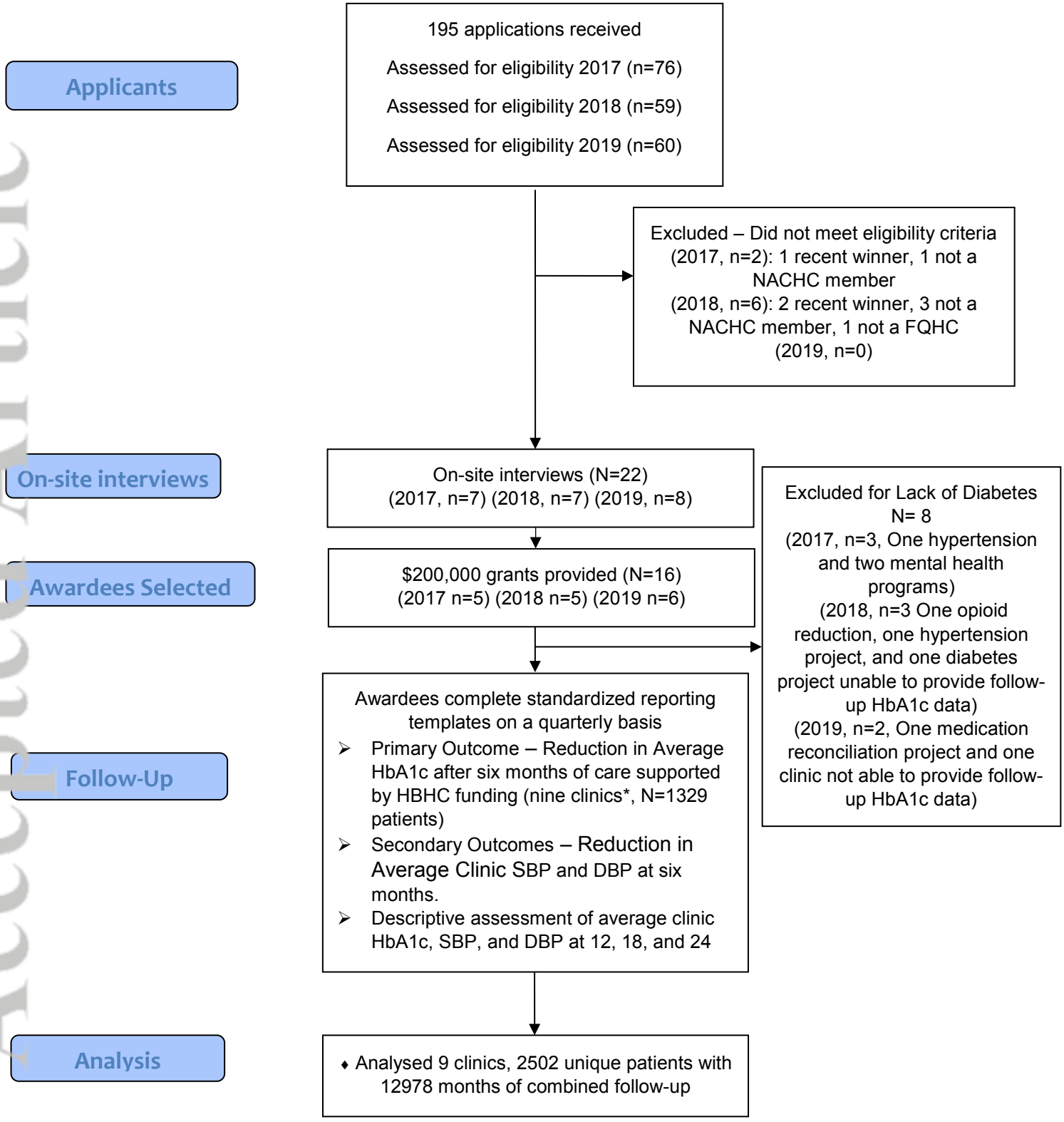
Eligibility Criteria	Proposal Evaluation Criteria	On-site Visit Evaluation

• Must conduct activities in at least one of the 50 states, Washington D.C., or U.S territories (Puerto Rico, the U.S. Virgin Islands, and other territories)
• Possess a Nonprofit Tax ID/EIN
• Applicants must be federally qualified health centers, or look-alikes
• Must be a National Association of Community Health Centers organizational member
• Past Award winners may reapply if they have not received funding in the past two award cycles
	• Organizational Description
	• Statement of Need
	• Relevance of Selected Outcomes
	• Program Description
	• Demonstration of Success
	• Innovation
	• Communication
	• Program Budget
	• Documentation of Outcomes
	• Additional Goals
	• Overall Score
		• Program Overview and Implementation
		  ○ Patient Population
		  ○ Innovation
		  ○ Implementation
		• Goals and Clarity of Objectives
		• Ability to Collect and Record Data
		• Replication and Communication
		  ○ Potential to Replicate/Share Information
		  ○ Communication
		  ○ Ability to be a Good Steward of Funds
		• Overall Thoughts

Table 1 - Eligibility Requirements and Evaluation Criteria for Applicants



*One awardee split the funding between two clinics leading to a total of nine clinics across eight awardees.

Figure 1 Summary Flowchart for the Helping Build Healthy Communities (HBHC) Program

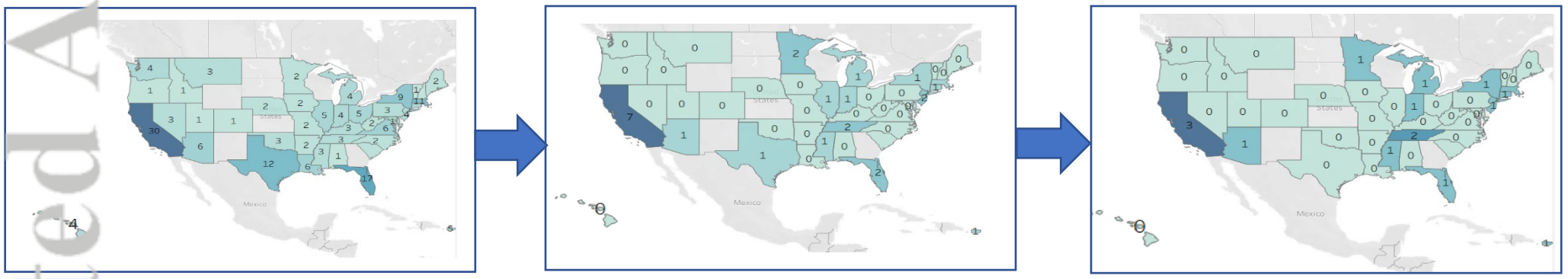
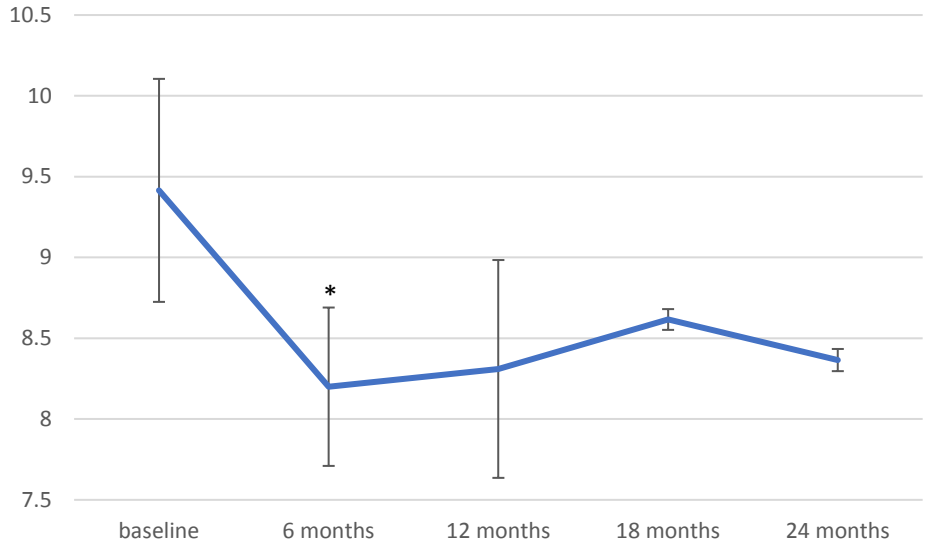


Figure 2 Map of Applicants, Finalists, and Awardees by State

Geography of population served for awardees addressing diabetes related needs (N=9)	
Rural	2
Urban	7
Region of America	
Northeast	1
Southwest	1
West	3
Southeast	2
Midwest	1
Puerto Rico	1

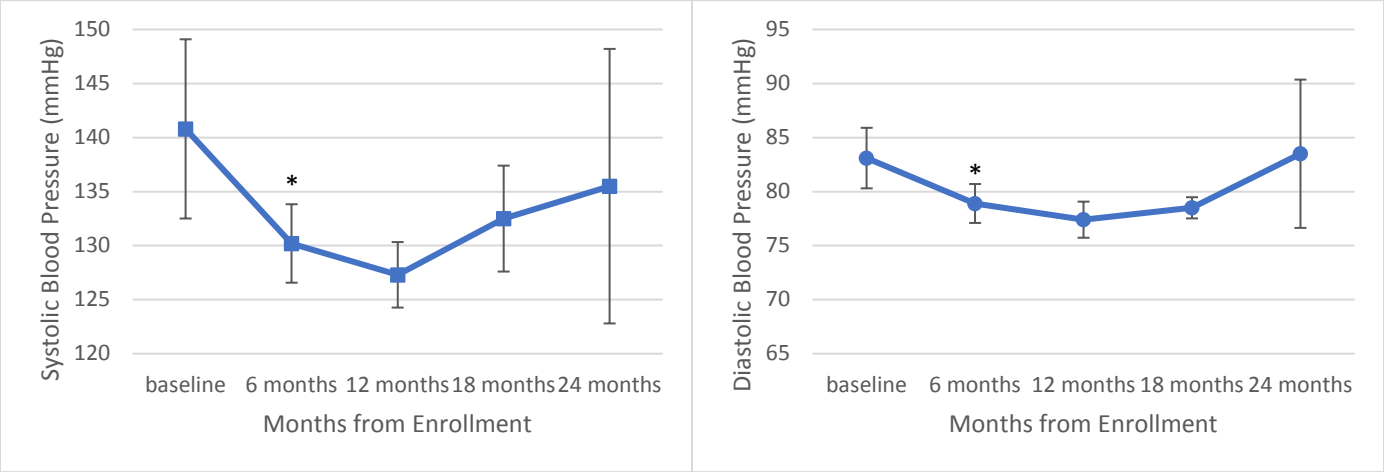
Overall Distribution of Races Served within Awardee Health Centers	Black/ African American	Hispanic	Non-Hispanic white	Asian/ Hawaiian / Pacific Islander	American Indian	More than one race
Mountain Park Health Center– Phoenix, AZ	12.17%	44.91%	9.04%	1.28%	0.56%	0.66%
North County Health Services – San Marcos, CA	1.94%	9.47%	23.35%	2.98%	0.20%	3.96%
Queenscare Health Centers – Los Angeles, CA (site 1) Queenscare Health Centers – Los Angeles, CA (site 2)	2.08%	73.14%	9.11%	9.66%	0.13%	0.20%
Family Health Centers of Southwest Florida, Inc – Fort Myers, FL	15.18%	45.80%	26.14%	1.45%	0.18%	7.17%
Maple City Health Care Center - Goshen, IN	1.68%	41.08%	20.55%	0	0	0.57%
Coastal Family Health Center, Inc. – Biloxi, MS	32.94%	2.28%	51.94%	3.12%	0.21%	2.78%
Henry J Austin Health Center – Trenton, NJ	41.99%	31.91%	6.99%	1.27%	0.40%	0
Med Centro, Inc. – Ponce, PR	1.38%	96.37%	0.27%	0	0%	0.38%

Table 2 Demographic Characteristics of Awardee Clinics



*P<0.01 via paired t-test of mean differences

Figure 3 Average Clinic HbA1c from Baseline to 24 months



	Baseline	6-months	12-months	18- months	24-months
Clinic Mean SBP (mmHg)	140.8	130.2*	127.3	132.5	135.5
Number of Clinics	6	6	4	2	2
Weighted Mean SBP	141.8	129.9	128.6	131.3	131.2
Clinic Mean DBP	83.1	78.9*	77.4	78.5	83.5
Weighted Mean DBP	82.7	78.2	77.25	78.7	81.2
Number of Patients	1654	728	424	167	47

*P<0.05 via paired t-test of mean differences

Figure 4 Average Clinic Systolic and Diastolic Blood Pressure from Baseline to 24 months for Patients with Diabetes

Partner Activities	Review of Medication Therapy	Creation of a Personal Medication Record	Development of a medication related action plan	Intervention or referral for identified health issues	Documentation and follow-up of activities and/or recommendations	Other activities	Method for Reporting Blood Pressure	Collaborative Practice Agreement in Place that Allows Prescription?	Protocols in Place to Guide Care
Mountain Park Health Center– Phoenix, AZ	X		X	X	X	Vaccine administration	N/A	YES	YES
North County Health Services (TrueCare) – San Marcos, CA	X	X		X	X		Automatic	YES	YES
Queenscare Health Centers – Los Angeles, CA (site 1) Queenscare Health Centers – Los Angeles, CA (site 2)	X			X	X	Focus on self-monitoring of blood sugars	N/A	YES	YES
Family Health Centers of Southwest Florida, Inc – Fort Myers, FL	X	X	X	X	X	Medication Refills during CMM visit	Manual and Automatic	NO	YES
Maple City Health Care Center - Goshen, IN	X	X	X	X	X		Manual and Automatic	NO	YES
Coastal Family Health Center, Inc. – Biloxi, MS	X	X	X	X	X		Automatic	YES	YES
Henry J Austin Health Center – Trenton, NJ	X	X	X	X	X		Automatic	YES	YES
Med Centro, Inc. – Ponce, PR	X	X	X	X	X	Group education and self-monitoring	Manual and Automatic	NO	YES

Table 3 – Summary of Comprehensive Medication Management Activities by Awardees

HbA1c Results across Awardee Clinics	Baseline HbA1c % (n)	6-month HbA1c % (n)	12-month HbA1c % (n)	18-month HbA1c % (n)	24-month HbA1c % (n)
Mountain Park Health Center– Phoenix, AZ	11.0 (702)	8.9 (203)	n/a	n/a	n/a
North County Health Services – San Marcos, CA	8.2 (330)	7.2 (15)	n/a	n/a	n/a
Queenscare Health Centers – Los Angeles, CA (site 1)	9.3 (548)	9.1 (463)	8.78 (358)	8.57 (241)	8.33 (37)
Queenscare Health Centers – Los Angeles, CA (site 2)	8.7 (139)	8.5 (90)	n/a	n/a	n/a
Family Health Centers of Southwest Florida, Inc – Fort Myers, FL	10.9 (105)	7.9 (79)	7.4 (17)	n/a	n/a
Maple City Health Care Center - Goshen, IN	9.0 (261)	8.9 (231)	n/a	n/a	n/a
Coastal Family Health Center, Inc. – Biloxi, MS	8.4 (126)	7.4 (92)	8.9 (46)	8.6 (25)	8.4 (6)
Henry J Austin Health Center – Trenton, NJ	8.8 (31)	7.2 (3)	n/a	n/a	n/a
Med Centro, Inc. – Ponce, PR	10.2 (260)	8.5 (153)	8.2 (81)	8.7 (23)	n/a
Mean A1c of Enrolled Clinics (SD)	9.4 (1.06)	8.2 (0.76)*	8.3 (0.69)	8.6 (0.06)	8.4 (0.05)
Estimated Population A1c Weighted by Number of Patients at Each Clinic (n)	9.7 (2502)	8.7 (1329)	8.6 (502)	8.6 (289)	8.3 (43)

*$p<0.01$ via paired t-test of mean differences

Table 4 Clinic HbA1cs at Awardee Clinics