The Diabetic Program Evaluation for a Peer Educator Model in Takeo, Cambodia from 2007 to 2013

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Abstract

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Background: Early detection and treatment for diabetes are essential for reducing disability and death from the disease. Finding effective ways of improving affordable screening, access, and quality of care for diabetic patients living in developing countries is a challenge. MoPoTsyo, a Cambodian non-governmental organization, was established to help address this lack of diabetes care in Cambodia utilizing a peer educator model. This study aimed to describe the outcomes of MoPoTsyo's diabetic program in Takeo Province by assessing glycemic and blood pressure outcomes over 5 years of follow up.
Methods: We calculated the mean fasting blood glucose (FBG) and blood pressure (BP) at regular intervals of follow up. The proportion of patients reaching recommended treatment targets for FBG and BP were assessed for each interval. The paired t-test was used to compare baseline and follow up at one year.
Results: Of 3411 patients enrolled, 2230 were included in the study. The cohort was predominantly female (68.9%) with a median age of 54 years. Median follow up time in the program was 16 months (4.9-38.4 months). There was a significant decrease (p<0.001) of 63.9 mg/dl in mean FBG (95% CI 58.5 to 69.3) at one year of follow up when compared to enrollment FBG. After one year, 45% (321/708) of patients achieved this goal. By year five, 41% (108/259) were within target FBG < 126. When assessing goal FBG < 150, 60% and 59% were within goal at one year and five years of follow up respectively. Systolic and diastolic BP levels significantly (p<0.001) decreased by 10.9 mmHg (95% CI 8.9 to 12.9) and 7.7 mm Hg (95% CI 6.4 to 8.8) respectively between enrollment and one year of follow up. Of the 65% with elevated BP at enrollment, 30% (163/529) of them reach the BP goal at one year of follow up and 34.4% (78/227) reach goal at 5 years. When accounting for all patients, 44.4% (156/351) had target BP at 5 years of follow up. When using the BP goal of less than 140/90 mmHg, 70% were within goal at 5 years of follow up (248/351).
Conclusion: The outcome indicators of DM care for MoPoTsyo's Takeo program evaluation are promising. This illustrates a reasonable approach to delivering effective quality DM care to a large number of patients in rural parts of LMIC.

Background

It is estimated that 387 million people are living with diabetes mellitus worldwide.[1] This number is expected to double by 2030, affecting approximately one in every ten people.[2] When diabetes is left untreated it is associated with increased risk of serious chronic complications including vision loss, nerve damage, kidney failure, cardiovascular disease, and stroke. Ultimately, this can lead to early disability and premature death. Low and middle-income countries (LMIC) account for 80% of people globally living with this disease. [3] They are disproportionately affected by the negative outcomes related to diabetes, thereby exacerbating the existing poverty within these populations.[3] Early detection and treatment are essential for reducing this burden. However, about half of people with diabetes remain undiagnosed, further complicating this picture.[2] Finding effective ways of improving affordable screening, access, and quality of care for diabetic patients living in LMIC is a well-known challenge.[4]

Cambodia is a low-income country in Southeast Asia with a diabetes prevalence of about 3% of the adults ages 25-65 years.[5] Cambodians have limited access to screening, diagnosis, management and treatment of diabetes and resulting complications.[6-9] Few establishments in Cambodia have implemented programs to address these deficits.[10] Furthermore, there are limited program evaluations of the outcome of current health care systems.[11] This lack of programmatic monitoring and evaluation delays and impedes broader implementation of effective programs.

In 2004, MoPoTsyo Patient Information Centre (MoPoTsyo), a Cambodian non-governmental organization, was established to help address this lack of diabetes care in Cambodia. MoPoTsyo initially focused on improving access to education and screening then gradually expanded to involve the organization of care and affordable treatment for diabetic patients through a peer educator network model in low resource settings. A recent cross-sectional study comparing MoPoTsyo with two other similar diabetes programs in Democratic Republic Congo and Philippines demonstrated MoPoTsyo to have the most favorable health outcomes, specifically in regards to glucose and blood pressure control.[12] The purpose of this study is to further describe MoPoTsyo's diabetic program in Takeo Province by assessing glycemic and blood pressure outcomes over 5 years of follow up.

Methods

Study Design

This was a retrospective descriptive cohort study of diabetic patients enrolled with the MoPoTsyo Program in Takeo. The University of Washington and Cambodia Institutional Review Boards approved this study. Both institutional review boards provided waiver of participant consent.

General Program Description

MoPoTsyo is a non-governmental organization based in Phnom Penh, Cambodia. It provides care for adults with diabetes mellitus (DM) and high blood pressure (BP) by engaging them in community-based peer educator (PE) networks. MoPoTsyo focuses on providing care for Cambodia's most impoverished communities including Phnom Penh's

urban slums and rural communities. It started its first rural program in Takeo Province about 100km south of Phnom Penh in 2007. Takeo has about 45 PEs, each of whom is responsible for approximately 20-80 patients at a given time.

The program's peer educator model used trained community members with DM to screen and educate adults in their designated community. PEs travelled house-to-house screening adults for DM and hypertension. To screen for DM, MoPoTsyo used urine glucose testing strips to assess for presence of glucose in a patient's urine sample. PEs handed out these testing strips to households and set up a follow up appointment to check for positive results. Patients with positive urine screens were then tested using fasting glucose to confirm the diagnosis. Patients with prior history of DM or confirmed fasting blood glucose (FBG) greater than 126mg/dl or postprandial blood glucose (PPBG) greater than 180 mg/dl were offered enrollment in the program. Patients with previously diagnosed DM were also enrolled in the program. Screening for hypertension included blood pressure measurement of systolic blood pressure (SBP) greater than 130 or diastolic blood pressure (DBP) greater than 80. A subset of patients who enrolled into MoPoTsyo had been previously enrolled in the Medecins Sans Frontieres (MSF) DM clinic at the provincial hospital in Takeo prior to the MSF clinic's closure in 2009.

After enrollment, one of the main program goals was to facilitate patient self-management of their chronic diseases to improve glycemic and BP control. In order to accomplish this, PEs meet with patients individually or in a group setting monthly for the first year in the program to provide ongoing DM education and to check FBG levels and BP. In addition, patients were encouraged to use urine glucose strips every two weeks to self monitor their DM control. The program included access to laboratories to screen for complications of DM including renal function and lipid levels, consultation by a local physician for complicated medical needs, and a revolving drug fund for affordable medications. Patients paid a small fee for each service they obtain.

Data Collection

This study evaluated data from a large cohort of MoPoTsyo diabetic patients in Takeo, Cambodia. Takeo was selected for this evaluation since it was the first rural MoPoTsyo program and had the most complete longitudinal data. This cohort of patients included currently or previously enrolled members of MoPoTsyo between 2007 and 2013 with DM alone or DM and hypertension.

After screening, patients with a positive urine glucose-screening test and a confirmation blood glucose test were invited to enroll in MoPoTsyo. This included those with previously diagnosed DM. At the time of enrollment, baseline data were gathered by peer educators and included "date of enrollment", "age", "gender", "height", "weight", "fasting blood glucose level", "blood pressure", "previous diagnosis of diabetes", and "current medications".

During the first year in the program, patients were offered monthly PE follow-up visits. During monthly follow-ups, PEs collected data on FBG levels and BP. Additionally, patients had FBG and/or BP data collected if they were seen by a medical doctor or

referred for further lab testing. Therefore, follow-up data on FBG levels and BP were obtained during either peer educator, physician, or lab visits.

Data from these visits were collected in writing at the time of the patient encounter and then these data were entered into a central program database periodically.

Study Population

We identified all diabetic patients with or without high BP enrolled from February 1, 2007 to July 1, 2013. Patients were included if they were over 18 years of age and had an initial and at least one follow-up FBG and an initial BP check. Patients under the age of 18 were excluded from the analysis to limit inclusion of patients with Type 1 DM (Figure 1).

Statistical Analysis

Descriptive Analysis

We used descriptive statistics (proportion, median, 25th and 75th quartiles) to describe characteristics of the cohort at enrollment (Table 1). T-tests and chi-squared tests were used as appropriate to assess if there were a significant difference in age, sex, FBG, SBP, and DBP between the included and excluded groups (Table 2). Significance was defined as an alpha level of 0.05.

Glucose Analysis

We had three main objectives for the FBG analysis. First, we assessed the cohort's longitudinal trend of mean FBG levels over 5 years of follow up. In order to assess this change in FBG levels over time of program enrollment, we trended the mean FBG levels from enrollment until designated follow up intervals of 6, 12, 18, 24, 36, 48, and 60 months (Figure 2). A follow-up interval was defined as the approximate amount of months an individual was enrolled in the program at the time the data was collected. For uniformity we recalibrated the follow-up time period. Therefore, the term "6 months" indicates a range of follow up between 0 and 6 months, "12 months" ranged between 6 and 12 months in program, "18 months" ranged between 12 and 18 months, and so forth. Second, we observed the change in individual FBG levels after one year of enrollment in the program (Table 3). One year of follow up was felt to be an adequate amount of time to see the initial effects of the program's interventions on FBG. We used the t-test to compare this mean difference in a patient's paired FBG value at baseline and one year of follow up. Third, we looked at the proportion of patients within the program's FBG goal at the previously designated follow up intervals. We assessed this by calculating the proportion of the cohort that met the recommended target for FBG level at regular intervals after enrollment in the program (Table 4). We used two FBG goals for this target analysis. The first was the program's goal FBG of less than or equal to 126 mg/dl. The second was a FBG goal of less than 150 mg/dl since this has been shown to approximate HbA1c < 7.[13]

Blood Pressure Analysis

In our analysis of BP management we first assessed the cohort's longitudinal trend of mean SBP and DBP levels over 5 years of follow up (Table 5). We then decided to narrow our interest group to individuals with elevated systolic (SBP > 130 mm Hg) or

diastolic (DBP > 80 mm Hg) BP at the time of enrollment. By focusing on patients with hypertension at baseline, our overall goal was to assess the program's ability to improve BP control in this higher risk group. In order to do this, we identified individuals with elevated systolic or diastolic BP at baseline and omitted patients with BPs that were within goal (<=130/80 mm Hg). For the group of patients with elevated BP, we trended the mean SBP and DBP at each follow up interval to assess the program's long-term effects on BP over time (Figure 3). The paired t-test was used to compare the mean difference between paired BP values at baseline and 12 months of follow up (Table 6). Similar to the FBG analysis, one year of follow up was felt to be an adequate amount of time to assess the program's initial effects on BP. We evaluated the proportion of this cohort that met the recommended target for BP at regular intervals after enrollment. A BP target of less than or equal to 130/80 mm Hg was used (Table 8).[2] Since recent evidence shows BP goal should be less stringent we also calculated the proportion of the cohort within a goal BP of less than 140/90 mm Hg (Table 8).[14]

Data analysis was performed using STATA software (College Station, TX), version 11 and Microsoft Excel (Redmond, WA).

Results

Inclusion/Exclusion

A total of 3411 patients were enrolled in the Takeo MoPoTsyo program between February 1, 2007 and July 1, 2013 with either newly diagnosed or known DM. Of these, 2230 (66.7%) were included in the data analysis (Figure 1). A total of 1181 people were excluded from the analysis due to age less than 18 (52/3411) or missing initial or follow up FBG levels (1126/3411) or missing initial BP measurements (152/3411) (Figure 1). The individuals excluded from the analysis had a significantly ($p<0.05$) lower number of woman (61.6% versus 68.9%) and a higher initial FBG (226.6 mg/dl versus 215.9 mg/dl) (Table 2). There was no significant difference in age and initial SBP and DBP between groups.

Patient Characteristics

The demographic characteristics of the 2230 individuals included in the study are presented in Table 1. Patients were predominantly female (68.9%) with a median age of 54.5 years. The largest proportion of individuals was between the ages of 50 to 59 (34%). Only about 10% of the cohort was between the ages of 18 to 39. The median follow up time in the program was 16 months (4.9-38.4 months). At time of enrollment, 22.4% (218/975) of patients reported being on medications for DM and 19.6% (96/489) reported being on high blood pressure medications. At the end of the study period, 90.1% were still active in the program, 27 (1.2%) had died, and 193 (8.7%) were lost to follow up.

Glucose Control

Figure 2 illustrates the trend in the mean values for FBG over time in the program. There was a significant decrease ($p<0.001$) of 63.9 mg/dl in mean FBG (95% CI 58.5 to 69.3) at one year of follow up when compared to enrollment FBG (Table 5). The initial decrease seen in FBG at 6 and 12-month follow-up points was sustained over the 5 years of follow up and approached goal FBG of less than 126 mg/dl.

The proportion of patients reaching the recommended targets for glucose is shown in Figure 4 and Table 6. At enrollment, only 10% of patients had a FBG less than 126 mg/dl. After one year, 45% (321/708) of patients achieved this goal. By year five, 41% (108/259) were within target FBG. When assessing goal FBG less than 150, 60% and 59% were within goal at one year and five years of follow up respectively.

Each follow-up interval for glucose was a range. For the "6 month" interval, the mean follow up time was 2.8 months (SD 1.9). The mean follow up time for 12 months, 18 months, 24 months, 36 months, 48 months, and 60 months was 9.4 (SD 1.6), 15.3 (SD 1.7), 21.3 (SD 1.7), 33.4 (SD 5.8), 42.7 (SD 3.7), and 53.4 (SD 3.4) months, respectively.

Blood Pressure Control
In Figure 3, the decreasing trend in mean SBP and DBP is shown for patients with elevated SBP and/or DBP at enrollment. In this group the systolic and diastolic levels significantly ($p<0.001$) decreased by 10.9 mmHg (95% confidence interval (CI) 8.9 to 12.9) and 7.7 mm Hg (95% CI 6.4 to 8.8) respectively between enrollment and one year of follow up (Table 5). As seen in the FBG analysis, the initial mean SBP and DBP decrease seen at 6 and 12-month follow up was maintained over the 5 years and approached goal BP of less than or equal to 130/80 mmHg.

The proportion of patients reaching the recommended targets for BP is shown in Table 6. When assessing BP control, 35% of all patients had a BP less than or equal to 130/80 mm Hg at enrollment. Of the 65% with elevated BP at enrollment, 30% (163/529) of them reach the BP goal at one year of follow up and 34.4% (78/227) reach goal at 5 years. When accounting for all patients, 44.4% (156/351) had target BP at 5 years of follow up. When using the BP goal of less than 140/90 mmHg, 70% were within goal at 5 years of follow up (248/351).

Similar to the FBG analysis, each follow up interval for blood pressure was a range. For the "6 month" interval, the mean follow up time was 3.3 months (SD 1.9). The mean follow up time for 12 months, 18 months, 24 months, 36 months, 48 months, and 60 months was 9.7 (SD 1.7), 15.7 (SD 1.7), 21.5 (SD 1.7), 31.8 (SD 3.5), 43.4 (SD 3.7), and 53.6 (SD 3.6) months, respectively.

Discussion
The outcome indicators of DM care for MoPoTsyo's Takeo program evaluation are promising. Both FBG levels and BP measurements showed an improvement within six months of enrollment and maintained these improved levels of control over 5 years of follow up. After one year in the program, the proportion of patients reaching the target FBG level tripled and almost half of the patients with uncontrolled BP at enrollment were within goal by this one-year mark. This illustrates a reasonable approach to delivering effective quality DM care to a large number of patients in rural parts of LMIC by reducing existing barriers to care such as increasing access to affordable diagnosis and

treatment, accessibility to laboratory testing, and providing disease education and support for patients.

There are few comparison studies evaluating DM programs in LMIC utilizing similar community-based interventions focused on patient self-management. The heterogeneity of the existing literature makes it difficult to construct meaningful comparisons. The majority of other published DM program evaluations in LMIC are assessments of hospital and clinic based programs typically having more immediate accessibility to physicians, laboratory testing, and medications. In these studies the proportion of patients reaching target glucose levels ranged from 24% to 39%.[11] For example, a hospital-based program in Cambodia estimated 24% of their patients were within HbA1c goal of less than 7%.[9] In the neighboring country of Thailand, a middle income country, patients managed in two clinic-based programs reached HbA1c of less than 7% in 24% and 32% of their patients.[15] A government run DM clinic in Sri Lanka revealed less than a third (30%) of patients had a HbA1c of less than 7.5%.[16] In Malaysia, an assessment of several hospitals, DM clinics, and specialty clinics revealed less than one in four patients had reached the recommended target HbA1c of less than 7%.[17] Compared with these statistics, MoPoTsyo had favorable results.

When comparing BP control to other programs, MoPoTsyo continues to fare better. BP control was achieved in less than 20% of patients in public hospitals in Malaysia.[17] A little over a quarter of patients in a Sri Lankan DM clinic and less than a third in a Thai primary care clinic were controlled.[18,19] Even developed countries face challenges in achieving clinical practice recommendations. In United States, only 52% of Americans had HbA1c goal less than 7% and 51% with BP less than 130/80 mm Hg.[20] In European Union countries, on average less than a third had a HbA1c less than 7%.[21] In the United Kingdom, just 37% achieved BP goal less than 140/90 mm Hg.[22] This illustrates the global difficultly in reaching DM goals and MoPoTsyo's ability to narrow the gap between LMIC and developed country attainable benchmarks.

There are several possible explanations for MoPoTsyo's encouraging outcomes. MoPoTsyo focuses on pro-active community screening for early detection of disease. This potentially allowed for patients to receive care earlier in the disease process. This may be one reason a recent study revealed MoPoTsyo to have favorable patient characteristics including younger age and lower BMI when compared to two other programs.[12] This program also has a strong emphasis on self-management by immersing patients during their first year in frequent DM education sessions and community building for social support. The slight rise in FBG levels at 36 and 48 months could be attributed to the fewer PE follow up visits after the first year and increasing cost of services borne by the patient. A better understanding of the factors that are affected by this increase in cost of services after the first year of enrollment may facilitate changes in the program that will increase effectiveness.

This study has several limitations. First, data were drawn from the program's central database that was not intended specifically for research purposes. The data were prone to development of errors through potential missteps in gathering data and data entry.

Second, about a third of the diabetic patients enrolled in the Takeo program were excluded from the study due to missing data. This can introduce selection bias. Third, there is a lack of physician standardization of care in the MoPoTsyo program. Medications for DM and hypertension are prescribed at the discretion of the treating physician from a restrictive list of generic medications available in the program's revolving drug fund. Last, in this study we used FBG as an indicator of DM control due to the available data. Fasting was determined by patient report. HbA1c is a better predictor of management of control in many parts of the world.[13] Using FBG may have underestimated the proportion of patients within goal since HbA1c 7 translates to approximately a FBG level of 150 mg/dl.[13] Also, patients may have falsely reported fasting. Despite these limitations, this study's strengths include its large cohort size, long follow up duration, prospective data collection, and an assessment of community-based implementation study.

In conclusion, this study shows that MoPoTsyo offered an effective and feasible community-based program structure to improve glycemic and blood pressure control in DM care. Replication of and a broader implementation of MoPoTsyo' peer educator model could have substantial effects in improving DM management in LMICs.

Figure 1: Flow chart of included and excluded patient

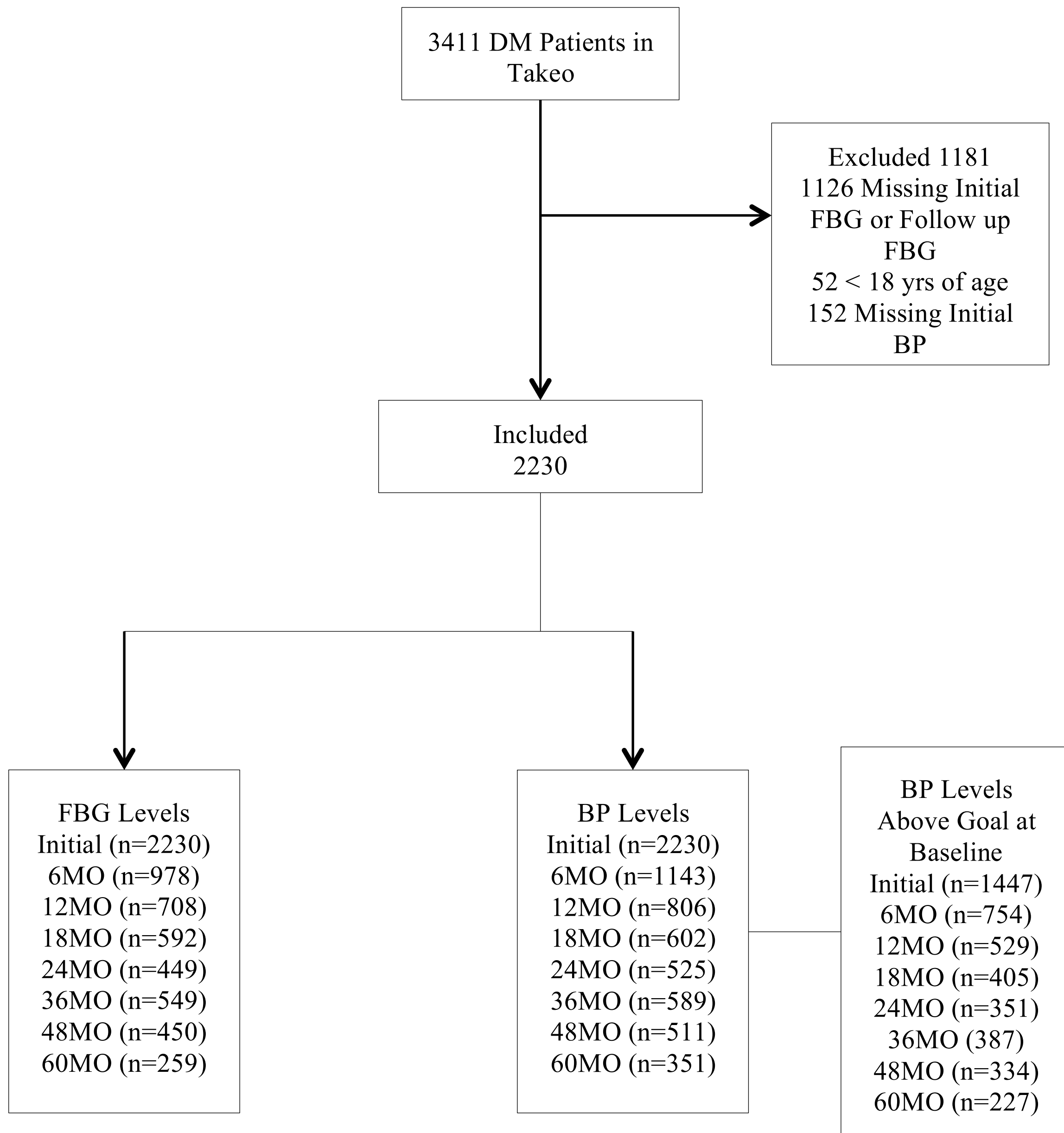

Table 1: Characteristic of the DM Patients at Initial Visits

Characteristic	
Total no. of patients with DM	2230
Sex – Women, n(%)	1538 (68.9%)
Age in years, median (IQR)	54.5 (46.3, 61.9)
Age Group in Years, n (%)	
18 - 39	233 (10.4%)
40 - 49	555 (24.9%)
50 - 59	758 (34%)
60 - 69	509 (22.8%)
≥ 70	175 (7.8%)
FBG (mg/dl), median (IQR)	195 (152, 255)
FBG < 126 mg/dl, n (%)	223 (10%)
Systolic BP (mm Hg), median (IQR)	130 (118, 146)
Diastolic BP (mm Hg), median (IQR)	82 (74, 91)
Systolic BP ≤ 130 mm Hg, n (%)	1129 (50.6%)
Diastolic BP ≤ 80 mm Hg, n (%)	970 (43.5%)
BMI (kg/m2), median (IQR) (n = 2229)	23.1 (20.6, 25.5) Missing 1
BMI < 23 kg/m2, n (%)	1091 (48.9%)
Treatment at Admission	
Diabetes Treatment, n (%) (n= 975)	218 (22.4%) Missing 1355
High Blood Pressure Treatment, n (%) (n = 489)	96 (19.6%) Missing 1741
Follow up Duration in months, median (IQR)	16.2 (4.9, 38.5)
Active, n (%)	2010 (90.1%)
Died, n (%)	27 (1%)
Lost, n (%)	193 (8.7%)

*missingness

Table 2: Characteristic of Included and Excluded DM Patients

Characteristic	ALL (n = 3411)	Included (n = 2230)	Excluded (n=1181)
Sex – Women, n(%)*	2266 (66.4%)	1538 (68.9%)	728 (61.6%)
Age in years, mean (IQR)	54.3 (11.9)	54.2 (11.2)	54.5 (13.1)
FBG Level (mg/dl), mean*	219.4 (90.8)	215.9 (89.2)	226.6 (93.7)
SBP (mm Hg), mean	133.7 (22.9)	133.5 (22.5)	134.1 (23.9)
DBP (mm Hg), mean	83.3 (13.1)	83.1 (12.8)	83.6 (13.9)

Results indicate mean values unless otherwise indicted.
Parentheses indicate standard deviation unless otherwise indicated.
*Indicates statistically significant association between Included and Excluded Patients ($p < 0.05$)

Figure 2.

Mean Fasting Blood Glucose Level Over Time

Fasting Blood Glucose Level (mg/dL)

100 120 140 160 180 200 220

215.9
169.6
153.1
166.5
166.2
179.6
178.2
158.13

0 6 12 18 24 36 48 60

Months In Program

FBG SD FBG Mean

Figure 3.

Mean Blood Pressure Over Time

Blood Pressure, mmHg

60 80 100 120 140 160

144.1 138.3 134.6 133.6 133.9 134.6 133.9 133

89.5 83.2 81.8 81 80.2 80.8 80.6 80.4

0 6 12 18 24 30 36 42 48 54 60

Month in Program

SBP SD SBP mean

DBP SD DBP mean

Only patients with elevated baseline BP (BP > 130/80) were included in the analysis.

Table 5. Mean Blood Pressure Over Time for All Patients

Month in Program	Mean Systolic BP (mm Hg)	Mean Diastolic BP (mm Hg)
0 (n = 2230)	133.5 (22.5)	83.1 (12.8)
6 (n = 1143)	133.3 (20.3)	80.9 (11.6)
12 (n = 806)	130.4 (18.8)	79.8 (10.7)
18 (n = 602)	130.9 (19.2)	79.4 (11.3)
24 (n = 525)	131.1 (18.2)	78.7 (10.9)
36 (n = 589)	131.3 (19.9)	79.2 (11)
48 (n = 511)	131.2 (18.1)	79.1 (10.6)
60 (n = 351)	129.8 (17.2)	78.7 (9.9)

Results indicate mean values unless otherwise indicted.
Parentheses indicate standard deviation unless otherwise indicated.

Table 6. Mean difference between paired observations at baseline and month 12 in patients with baseline and follow up values. For SBP, only patients with elevated SBP at baseline (SBP > 130 mmHg) were included in the analysis. For DBP, only patients with elevated DBP at baseline (DBP > 80 mmHg) were included in the analysis.

Variable	Mean Difference	95% CI	p-value
FBG (n=1325)	63.9 mg/dl	(58.5 to 69.3)	<0.001
SBP (n = 529)	10.9 mm Hg	(8.9 to 12.9)	<0.001
DBP (n= 529)	7.7 mm Hg	(6.4 to 8.8)	<0.001

Figure 4. Proportion of Patients Reaching Recommended Target

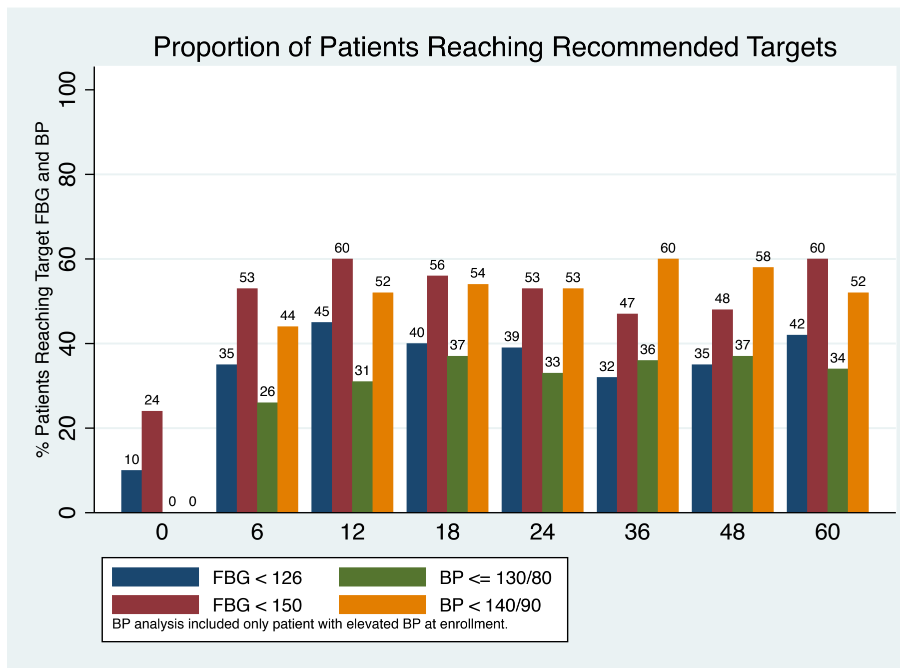

Table 7. Proportion of Patients within FBG Goal at Follow up Intervals; Using FBG goal of < 126 and < 150

Month in Program	Proportion of patients within FBG Goal (FBG <126)	Proportion of patients within FBG Goal (FBG < 150)
0 (n = 2230)	10%	24.1%
6 (n = 978)	35.1%	52.6%
12 (n = 708)	45.3%	60.1%
18 (n = 592)	40.4%	56.4%
24 (n = 499)	39.2%	53.4%
36 (n = 549)	32.4%	47.1%
48 (n = 450)	35.8%	47.5%
60 (n = 259)	41.7%	59.8%

Table 8. Proportion of Patients within BP goal at Follow up Intervals; Using BP of ≤ 130/80 and < 140/90.

Month in Program	Proportions of all patients within BP goal (≤130/80 mm Hg)	*Proportion of patients within BP goal (BP ≤ 130/80 mm Hg)	Proportions of all patients within BP goal (<140/90 mm Hg)	**Proportions of patients within BP goal (BP<140/90 mm Hg)
0	35.1% (n = 2230)	n/a	58.4% (n = 2230)	n/a
6	35.9% (n = 1143)	25.7% (n = 754)	61.2% (n = 1143)	44.1% (n = 519)
12	41.6% (n = 806)	30.8% (n = 529)	67.2% (n = 806)	51.5% (n = 355)
18	42.7% (n = 602)	36.5% (n = 405)	67.1% (n = 602)	53.6% (n = 252)
24	39.8% (n = 525)	33.3% (n = 351)	65.7% (n = 525)	52.8% (n = 214)
36	42.4% (n = 589)	36.4% (n = 387)	67.6% (n = 589)	60% (n = 235)
48	42.1% (n = 511)	37.4% (n = 334)	66.9% (n = 511)	58.3% (n = 211)
60	44.4% (n = 351)	34.4% (n = 227)	70.7% (n = 351)	52.2% (n = 132)

*This analysis only includes patients with elevated BP at baseline (BP > 130/80 mm Hg)
** This analysis only includes patients with elevated BP at baseline (BP ≥140/90 mm Hg)

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