

Statistical Analysis for the MedStar Diabetes Pathway Ongoing Chart Review Protocol. (June 1, 2016).

The study was powered to detect a difference of 0.5 in the change in HbA_{1c} with SD=2 with 80% power at alpha=0.05 with a sample size of 128 in each group (paired t-test). The study reaches 100% power to detect this observed difference (1.6, SD=2.25, post-hoc) with an alpha level of 0.01. Data were summarized using means and standard deviations for continuous variables and frequencies and percentages for categorical variables. Differences in patient characteristics and the unadjusted differences in the outcome measures between the intervention and control groups were tested using linear mixed models, McNemar tests, and conditional logistic models due to matching (Tables 2 and 3). The significance of the comparison between the groups of their respective within group risk change from pre to post-intervention was determined by longitudinal Poisson models that include time and group interactions. Multivariable Poisson regression models adjusted for pre-intervention utilization, baseline HbA_{1c}, age, and sex were used to estimate post-intervention 30-day and 90-day hospital admission and ED visit risk for participants compared to controls (Table 3). The average decrease in HbA_{1c} among men compared to women was examined using a mixed model that included an interaction with sex and group.

Pre-intervention differences between the groups in utilization outcomes were computed and tested using unadjusted Poisson regression models. Analyses were conducted in R 3.1.0 (R Core, Vienna, Austria) (31) and Stata 14 (StataCorp, College Station, TX) (32).

We also conducted an analysis to examine potential for monetization of the intervention benefits from reduced inpatient services to the health system. Based on the expected times of hospitalization per patient in 90 days for both the intervention group and comparison group, estimated by the Poisson regression model, we projected the annual difference in usage of inpatient services between a patient with and without the intervention. The projected change in usage was then multiplied by the expense per diabetes associated hospitalization, which was calculated from the actual claims data of the health system's employee health plan in Year 2017 to be \$25,162.95 per hospitalization.