

BACKGROUND

Multiple studies have demonstrated improved outcomes when a pharmacist is integrated directly in patient care and, as such, the American Society of Health System Pharmacists (ASHP) believes pharmacists should have a role in providing pharmaceutical care and enhanced drug therapy management.

OBJECTIVE

- The purpose of this study was to discover a statistically significant difference in diabetes outcome measures in patients with type 2 diabetes mellitus that are being managed collaboratively with a board-certified ambulatory care clinical pharmacist in a family medicine clinic at HSHS Medical Group Family Medicine Clinic in Shiloh, IL
- Primary outcome measure was decrease in Hemoglobin A1c% (HbA1c)
- Secondary outcomes included American Diabetes Association (ADA) recommended immunization status and ADA recommended labs pre- and post-PharmD Service care, including fasting lipid panel, urine albumin to creatinine ratio, TSH and vitamin B12

METHODS

Study design

- Retrospective, single-center, electronic health record review for dates of service 2/1/2017 to 11/20/2018
- Total of 75 patients were reviewed

Inclusion Criteria

- Age > 18 years
- Those with Type 2 diabetes
- Referred to PharmD services

Exclusion Criteria

- Patients < 18 years
- Those not referred to PharmD Services
- No existing baseline or post-PharmD Service laboratory values for HbA1c
- Type 1 diabetes mellitus

Data collected included:

- Age: 60.59 mean
- Race: 64.3% Caucasian, 33.9% African American (AA), 1.8% not specified
- Baseline and final:
 - HbA1c
 - Status of ADA recommended immunizations (PPSV23, Hep B Series, influenza) and ACIP-based PCV13 and Tdap/Td as appropriate
 - ADA recommended labs (fasting lipid panel, urine albumin creatinine ratio, TSH, Vitamin B12)

RESULTS

Average Hemoglobin A1c% Overall

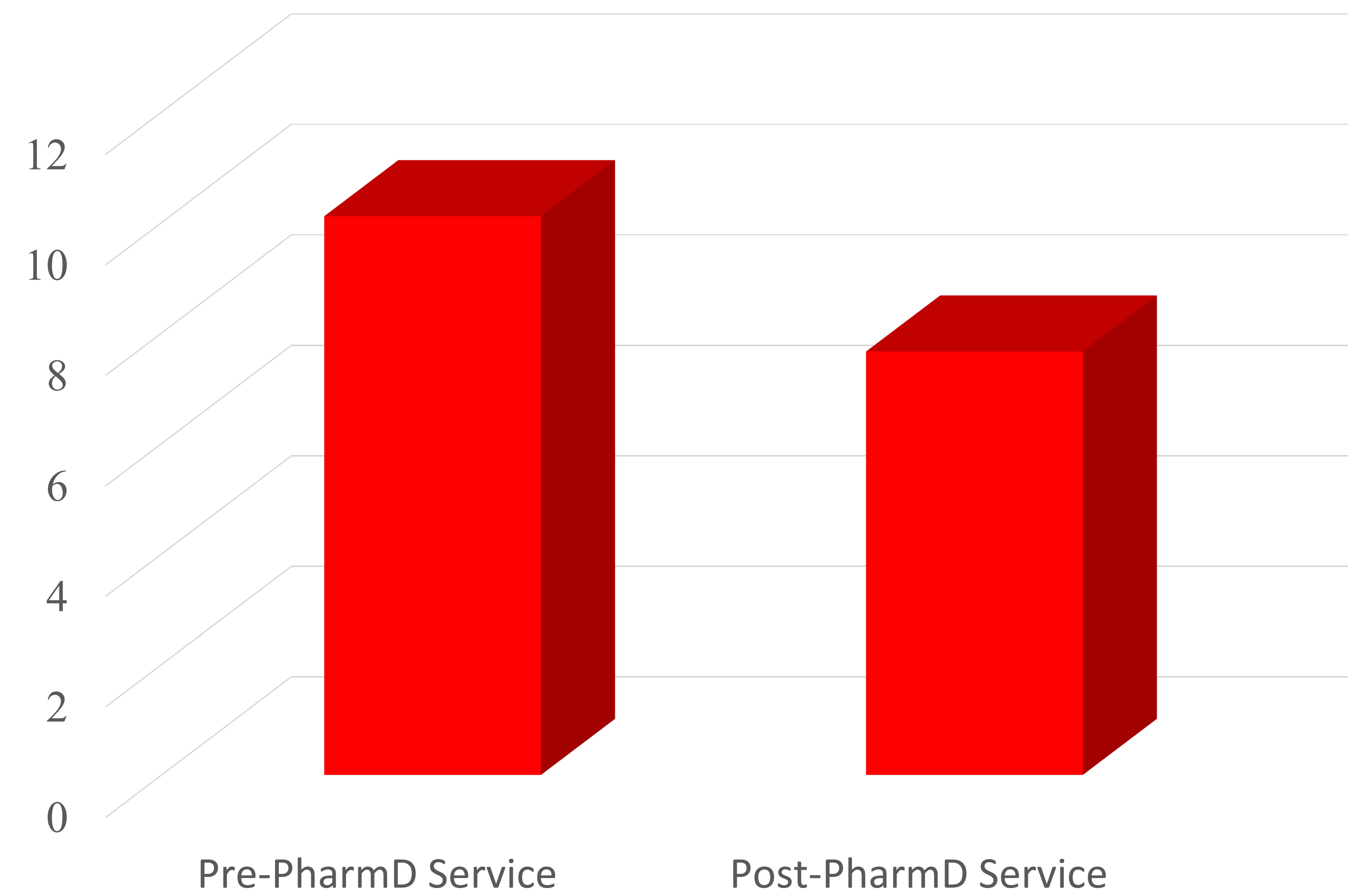
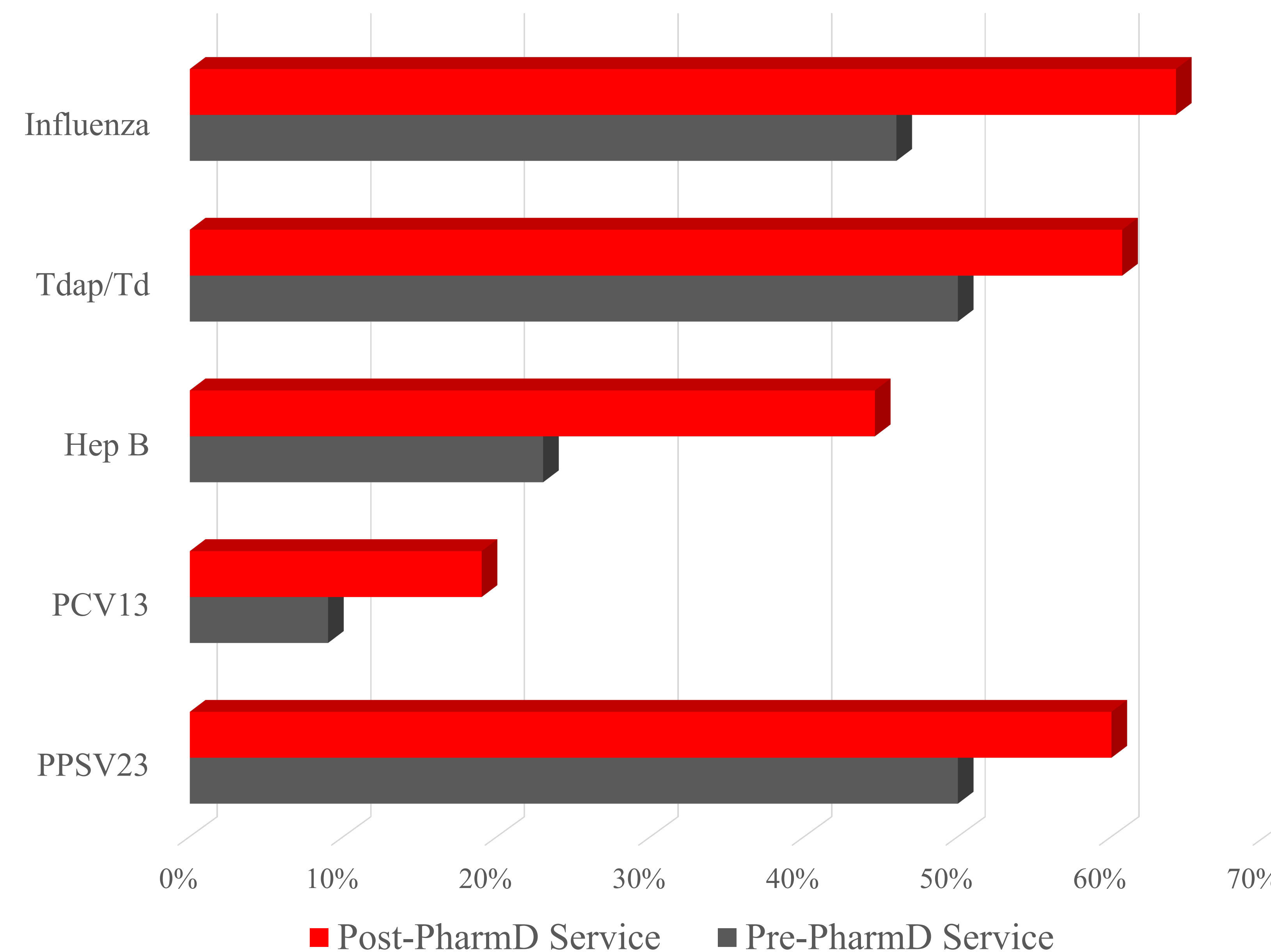


Table 1. Immunization Status pre- and post-PharmD Service



ACKNOWLEDGEMENTS

Thank you to HSHS Medical Group for allowing the use of their patient data for this project and thank you to Dr. Chris Herndon for assisting with the data analysis.

RESULTS

Lab Results

- Final A1c was significantly lower than baseline (p-value = 0.000) with mean decrease overall of 2.44935849% (10.113% to 7.66%)
- A1c was also significantly at a goal of 7% for more patients after PharmD Service (p=0.04)
- AA patients had a greater reduction in HbA1c (4.17%) than Caucasian patients (1.77%)
- AA patients' HbA1c was higher at baseline than Caucasian patients' (11.11% vs. 9.603%)
- Total Cholesterol was significantly lower than baseline (p-value = 0.034)
- Obtaining UACR and TSH were not significant, however, Vitamin B12 was (p = 0.025)

Immunization Results

- PPSV23, PCV13, Hep B, Tdap/Td, and influenza were all significantly increased. (p-value = < 0.05)

DISCUSSION

- Used most recent labs prior to first encounter for baseline laboratory values Attempted to obtain baseline labs 3 months prior to first visit, however, some labs are only obtained yearly (i.e. cholesterol levels, B12, etc.) so the baseline labs were obtained at the researcher's discretion
- Some of these labs were not necessary to obtain for all patients in this study due to the variation in timeline of their care
- Not all patients were able to continue care with the PharmD Service because insurance coverage changed for many patients

CONCLUSION

- A1c levels, and in turn, control of Type 2 Diabetes Mellitus, were significantly improved with continued intervention from a board-certified ambulatory care clinical pharmacist providing enhanced drug therapy management in cooperation with a primary care physician.
- Total Cholesterol was also significantly lowered with PharmD Service Intervention.
- Immunization adherence was also significantly increased
- This study shows that having a clinical pharmacist embedded in a family medicine clinic can also improve patient health outcome measures including improved ASCVD risk through controlling total cholesterol, preventing diseases through immunization adherence, and by preventing medication related complications through obtaining Vitamin B12 levels.
- Future studies could explore if there is a correlation between improved disease outcomes and number of times they were seen by the PharmD Service or the total amount of time they were under the PharmD Service care.