Evaluation of patient follow-up and medication adherence after initiation of a free medication formulary at a student-run free medical clinic

Purpose:
A student-run free clinic implemented a new formulary to provide free medications to the patient population in an underserved county. According to the U.S. Census Bureau, the county has a poverty level of 18.4%, which is high compared to a neighboring county at 5.3%. This level of poverty creates risk for patients to be non-adherent to preventative medications for fatal cardiovascular events. Patient adherence after receiving the formulary medications has not been recorded. The purpose of this study was to evaluate the clinic patients' follow-up to confirm adherence and clinical outcomes with the free formulary medications.

Methods:
The institutional review board approved this retrospective evaluative study of pharmacy services at the student-run free clinic. Patients were seen by medical students and pharmacy students under the supervision of licensed physicians. Medical students chart progress notes without set standards for scheduling follow-up appointments or retesting labs. Eligible patients were defined as any person who had an appointment at the clinic between February 1, 2019 and September 5, 2019 and were dispensed a 30 day supply of Lisinopril 10 mg, Amlodipine 10 mg, Atorvastatin 40 mg, Glipizide 5 mg, Hydrochlorothiazide 25 mg, Metformin 500 mg, or Metformin 1000 mg from the formulary after stating they would have trouble affording their medications. Chart reviews were performed to assess follow-up for these medications on whether or not further appointments or laboratory testing were completed after receiving the formulary medication. The data collected included age, sex, medication prescribed, baseline laboratory tests (if applicable: blood pressure, A1c %, blood glucose level, lipid panel), follow-up laboratory tests results (if applicable: blood pressure, A1c %, blood glucose, lipid panel), and time (in weeks or months) elapsed between appointments. Descriptive statistics were used to describe patient demographics.

Results:
Twenty-one patients were analyzed in this study. Twelve (57.1%) patients were male and nine (42.9%) were female. The median age was 46 years. Sixteen (76.2%) patients were scheduled for follow-up appointments after receiving the formulary medications, however, only eight patients (38.1%) received follow-up care. Of these eight patients, two received medications for hypertension, five received diabetes treatment, and one received medications for hypertension, diabetes, and hyperlipidemia. Blood pressure was decreased in two of the three patients (66.7%). Only two of the six patients (33.3%) receiving diabetes medication had baseline A1c% and blood glucose levels drawn. During follow-up, neither of these patients' labs were retested. Of those who received follow-up, only two out of eight patients (25%) showed clinical success from formulary intervention, while the remaining six patients (75%) received inadequate follow-up that could not establish whether formulary medications were beneficial. Of the other eight patients who had scheduled follow-up, six (75%) did not show up for appointments and the other 2 patients' (25%) follow-ups were past the study time frame. This means six out of 14

(42.9%) patients who were scheduled for follow-up during the study time frame were non-adherent to appointments.

Conclusion:
This study was helpful in identifying limitations and gaps in care provided by a student-run free clinic. A large portion of patients are missing follow-up appointments. Confounding problems to adherence should be identified as free medications are not sufficient to improve clinical outcomes. Of the patients who did receive follow-up care, accurate clinical outcomes could not be obtained because baseline and follow-up testing was insufficient. This data will assist in creating new standards within the clinic for follow-up requirements when dispensing not only free formulary medications, but all prescriptions.