The Continuity of Medication Management Sampling Plan

To identify the sample of patients with one or more ACSCs and to construct outcomes and covariates for Aim 1, we will rely on four VA datasets for FY2008-2011 from the Austin Information Technology Center (AITC) and Durham VA VistA: 1) data on medication use, 2) outpatient visit data that contain patient covariates, 3) death record data, and 4) DCG risk adjustment data. To identify all patients who are age 40 or over, obtained care at the Durham VA, and had diagnoses and medications for the four conditions, we will submit a data request to the MUMPS programmer at the Durham VA (Ms. McKay). Once we obtain this list of patients and their real SSNs, we will request access to the real-scrambled SSN crosswalk to enable linkage between these claims data and patient survey data to be collected under Aim 4. This linkage will enable us to obtain Durham VA patients' scrambled SSNs, which we will use to link to AITC datasets. First, outpatient pharmacy data will be obtained for all Durham patients who participate in the study to construct the unique number of prescribing providers in Aim 1. Second, VA outpatient claims that track outpatient visits will be obtained to construct claims-based patient covariates (e.g., age, gender, race, marital status, copayment exemption). We will also use these data to generate outpatient visits counts. Third, we will obtain the VA death record data that is referred to as the "mini-Vitals file" to identify veterans who have died during the study period. Fourth, we will collect a risk adjustment variable – Diagnostic Cost Groups (DCG) developed by Ellis on every veteran in our cohort to control for differences in overall comorbidity burden between patients. Dr. Maciejewski found in prior work that DCG predicts hospitalization, mortality and expenditures for veterans better than other measures.

To make the assessment of medication outcomes (number of medications, adherence) in Aim 2, the utilization outcomes (ER visits, admission) in Aim 3, and the survey-based medication beliefs in Aim 4 tractable in the limited timeframe of an R21, we propose to examine a subset of Durham VAMC patients with diagnosed dyslipidemia and diabetes. We chose dyslipidemia because the medication regimen involves one medication within a class at a time and polypharmacy within the same class (e.g., two statins) rarely or never occurs. In addition, therapeutic duplication can easily be differentiated from (inappropriate) intensification because two physicians prescribing two different statins simultaneously would be evidence of duplication. We chose diabetes because it is a concordant condition with dyslipidemia, adherence to oral hypoglycemic agents can be well assessed using administrative claims data, and patients may be managed by primary care physicians or endocrinologists. We expect our sample for Aims 2-4 to include 2,000 veterans with dyslipidemia and diabetes, of whom 500 will be randomly sampled for the patient survey. We expect our sample of patients with either dyslipidemia or diabetes to include 4,000 veterans, of whom 500 will be randomly sampled for the patient survey. With a sample of 6,000 based on claims data alone, an alpha of 0.05 and regression adjustment for 15 covariates, we will have 99% power to detect a small effect size (d=0.10) in medication adherence (Aim 2), in ER visits and in the probability of admissions (Aim 3). With a sample size of 1,000 survey respondents, we expect a 50% response rate to generate 500 patients whose survey and claims data can be linked. With a sample of 500 survey respondents, an alpha of 0.05 and regression adjustment for 15 covariates, we will have 83% power to detect a small effect size (d=0.10) in medication adherence (Aim 2), in ER visits and in the probability of admissions (Aim 3), and in self-reported medication beliefs (Aim 4).

To identify the sample of patients with one or more ACSCs and to construct outcomes and covariates for Aims 2-4, we will rely on the same four VA dataset discussed above (see section D.1.b.): 1) outpatient pharmacy data to construct the medication outcomes in Aim 2, 2) outpatient and inpatient VA claims data to construct patient covariates (e.g., age, gender, race, marital status, copayment exemption, conditions) and emergency room (ER) visit and inpatient admission outcomes in Aim 3, 3) death record data to identify veterans who have died during the study period, and 4) DCG risk adjustment data to adjust for comorbidity. The data on ER visits will be obtained from VA outpatient claims that track outpatient visits, including ER visits, via unique clinic identifiers referred to in VA as stop codes. Data on inpatient admissions will be obtained from VA inpatient claims that track all inpatient admissions at every VAMC in the VA system.