**Analysis plan for preoperative cognitive dysfunction clinical outcomes (Updated SG 4/26/2021)**

**Aims of this study:**

1. Determine whether an abnormal SBT and/or AD8 screen is associated with an increase in readmission and/or discharge to a location other than home, length of stay, in-hospital mortality, and early postoperative complications.

2. Evaluate the frequency and etiology of early readmission in patients undergoing elective surgery with an abnormal SBT/AD8

**Primary Objective 1:** Evaluate the effect of abnormal preoperative cognitive screening (SBT > 5 or AD8 > 2) on clinical patient outcomes in patients presenting for inpatient surgery using a regression analysis

Inclusion criteria: Patients > 65 years of age undergoing elective surgery who were evaluated in CPAP clinic between January 2013 and June 2018 who underwent one of the following surgical procedures:

1. Cholecystectomy
2. Colectomy/APR/LAR/SB resection
3. Gastrectomy
4. Whipple
5. Pancreatectomy
6. Hysterectomy
7. TAH/BSO
8. Lumbar spine fusion
9. Total knee arthroplasty
10. Total hip arthroplasty
11. Total shoulder arthroplasty
12. Laparoscopic hiatal hernia repair
13. Lobectomy (robotic, VATS, or open)
14. Nephrectomy
15. Prostatectomy
16. Cystectomy
17. Arteriovenous fistula creation

Exclusions: Exclude all patients who do not have complete screening results for both the AD8 and SB. For analysis of discharge to location other than home, exclude patients not residing at home preoperatively. For patients who underwent multiple procedures within the study period, only include the first surgical procedure.

Analysis 1: Describe the demographics and comorbidity rates of patients in the control (normal cognitive screen) and abnormal cognitive screening group (SBT > 5 and/or an AD8 > 2). Preoperative patient characteristics:

Age (mean/SD)

%Male

BMI (mean/SD)

Race (white if =9, black if =7, other if any other number)

Current or former heavy alcohol use (>16/week if male, >10/week if female or “former history of heavy use”)

Decreased exercise tolerance (Yes if <4 METS)

Barthel index <100

Hypertension (1)

Coronary artery disease (1)

Congestive heart failure (1)

Atrial fibrillation or flutter history (1)

COPD or asthma (Yes if COPD = 1 or asthma = 1)

ESRD on HD (Yes if dialysis history is present)

Cerebrovascular disease (Yes if Cerebrovascular disease, cerebrovascular disease stroke or TIA, CVA, or TIA column = 1)  
Peripheral artery disease (1)

Diabetes mellitus (1)

Current cancer (1)

Cirrhosis (yes if cirrhosis etiology = 107, 108, 109, 110, 111, 112, 113).

Analysis 2:

Comparison of the incidence of the primary outcomes for the study between patients with an abnormal cognitive screen and those with a normal cognitive screen:

1. Discharge to a location other than home
2. Hospital readmission after discharge within 30 days

Secondary outcomes:

1. Hospital length-of-stay (time in days to discharge from time of index surgery)
2. In-hospital mortality (defined as death prior to discharge from the hospital)

Exploratory outcomes:

1. Additional clinical outcomes: new arrhythmia, pneumonia, AKI (KDIGO-Cr only), UTI, sepsis, reoperation, stroke/TIA, ICU admission, respiratory failure, postoperative troponin elevation

Analysis 3:

1. Etiology of readmission in patients readmitted with abnormal cognitive screen vs those with a normal preoperative cognitive screen

Analysis 4:

1. Comparative predictive value of AD8 and SBT

Supplement:

* List of included surgical procedures
* AD8 vs SBT