**Sh PQHS 515: Health Care Analytics**

**Fall 2023**

**Homework 5**

**Due Date: November 10**

*Please submit via Canvas*

Total knee arthroplasty (TKA) is also known as total knee replacement. This is a surgical option for patients who are unable to continue walking with non-surgical options. Manipulation under anesthesia (MUA) is a first-line treatment to help manage some of the stiffness that occurs after TKA. As TKAs and MUAs are usually done inpatient, but sometimes done in ambulatory settings, to be able to study these we need to combine multiple sources of data.

In this homework, your task will be to link data from the 2017 and 2018 Florida State Inpatient Database (SID) and State Ambulatory Surgery Database (SASD) to answer the questions below.

These data are located at:

/meta/databases/HCUP/FL\_SIDC\_2017

/meta/databases/HCUP\_SASD/FL\_SASDC\_2017\_CORE

/meta/databases/HCUP/FL\_SIDC\_2018/FL\_SIDC\_2018\_CORE

/meta/databases/HCUP\_SASD/FL\_SASDC\_2018\_CORE

**Questions**

1. How many unique patients are there overall between the four datasets across two years? (2 pts)  
     
   5,110,446
2. How many unique patients had TKA? While most TKAs are done inpatient, some may be done in outpatient, ambulatory settings. TKA can be identified using the following procedure codes: 0SRD069, 0SRD06A, 0SRD06Z, 0SRD0J9, 0SRD0JA, 0SRD0JZ, 0SRD0KZ, 0SRC069, 0SRC06A, 0SRC06Z, 0SRC0J9, 0SRC0JA, 0SRC0JZ, 0SRC0KZ. (4 pts)  
     
   78,947
3. How many of those with TKA had MUA? This is typically done in an ambulatory setting but may be found in inpatient data as well. MUA is documented with CPT code “27570”. (4 pts)  
     
   1,996

Extra Credit Challenge (Q4 & Q5 may be completed for optional extra credit – must submit code):

1. What is the average time elapsed between TKA and MUA? Report the mean, standard deviation, median, and interquartile range. (3 pts)  
     
   Mean: 74.5

Standard Deviation: 97.0

Median: 63.0

IQR: 93 - 49 = 44  
  
  
  
/\* Question 4 \*/

DATA q4\_elapsed;

SET q3\_merged;

eTime = muaDate - tkaDate;

RUN;

PROC MEANS DATA = q4\_elapsed MEAN STDDEV MEDIAN Q1 Q3;

VAR eTime;

RUN;

1. How many individuals had more than 1 MUA? (2 pts)  
     
   107

/\* Question 5 \*/

DATA q5\_data;

SET fullData\_wVisit;

hadMUA = 0;

ARRAY muaVars(31) CPT1-CPT31;

DO i = 1 to 31;

IF muaVars(i) = "27570" THEN hadMUA = 1;

END;

DROP i;

RUN;

DATA q5\_wMUA;

SET q5\_data;

WHERE hadMUA = 1;

RUN;

/\* Get people with multiple MUAs \*/

PROC SORT DATA = q5\_wMUA NODUPKEY DUPOUT = multiMUA;

BY VISITLINK;

RUN;

/\* Get unique people with multiple MUAs \*/

PROC SORT DATA = multiMUA NODUPKEY;

BY VISITLINK;

RUN;