# SAS Project

## Due: October 22, 2019 11:59pm

**Objective**: Create **three** tables using the %table1 macro found at (https://www.hsph.harvard.edu/donna-spiegelman/software/table1-for-windows/) and uploaded to the course website using the National Hospital Ambulatory Medical Care Survey (NHAMCS) **ED data** (http://www.cdc.gov/nchs/ahcd/ahcd_questionnaires.htm).

1. Table of characteristics (sex; race/ethnicity; type of pain; severity of pain; provider type) of the <mark>pain-related</mark> US ED visits for 2005 to 2009 by age category (18-34; 35-54; 55-74; ≥75).
2. Table of percentage prescribed a medication (any analgesic; opioid; nonsteroidal anti-inflammatory drug (NSAID); discharge opioid) for pain-related US ED visits for 2005 to 2009 by age category (18-34; 35-54; 55-74; ≥75).
3. Table of percentage prescribed any analgesic for pain-related US ED visits for 2005 to 2009 <mark>by pain category (no pain; mild pain; moderate pain; severe pain) and age category 18-34; 35-54; 55-74; ≥75).</mark>

## Some Helpful Information for Data Creation:

- All data and documentation (this includes data, formats, labels, the survey instruments, helpful information on getting the data into SAS, etc.) for this national survey can be found on the CDC website (link provided above).
- Coding and naming of some variables is not consistent across the five years (e.g. race/ethnicity and pain measure). The following are the names of the variables that you should be looking at for the given years:
  - SEX: *sex*
    - Categories for table(s): Male; Female
  - RACE/ETHNICITY
    - 2005-2006: *raceeth*
    - 2007-2009: *ethun* and *raceun*
    - Categories for table(s): Non-Hispanic white; non-Hispanic black; Hispanic; Asian/other
  - TYPE OF PAIN
    - Categories for table(s): Head; Neck; Chest; Abdomen; Back; Lower Extremity; Upper Extremity; Generalized; Other
  - SEVERITY OF PAIN
    - 2005-2008: <mark>*pain*</mark>
    - 2009: *painscale*
    - Categories for table(s): no pain; mild pain; moderate pain; severe pain
  - REASONS FOR VISITS: *RFV1-RFV3*
    - These are used to determine whether or not the visit was pain-related.
  - AGE: *age*
    - Categories for table(s): 18-34; 35-54; 55-74; ≥75
  - DRUGS: *med1-med8*
    - These are used to determine whether a prescribed medication qualified as an analgesic.
  - DISPENSING LOCATION: *gpmed1-gpmed8*
    - This is where the medication was prescribed (e.g. at discharge)
  - PROVIDER TYPE:
    - Physician/Attending: *staffmd, othphys, attphys, oncall*
    - Intern/Resident: *resint*
    - Midlevel: *physasst, nursepr, othprov* (and/or none of the above two)
    - Categories for table(s): Physician/attending; Intern/resident; Midlevel

HINT: Make sure to check the consistency of variables over the different years.

- The following values indicated reasons for visits that are pain related:
  **10500,10501,10550,10551,10552,10553,10554, 10600,10601, 12100, 12650, 13201, 13551,14101, 14552, 14851, 15002, 15101, 15151, 15450, 15451, 15452, 15453, 16051, 16101, 16500, 16651, 16701, 17001, 17151, 17452, 17651, 17751, 17901, 18000, 18701, 19001, 19051, 19101, 19151, 19201, 19251,19301, 19351, 19401, 19451, 19501, 19551, 19601, 19651, 19701, 23650, 50050, 50100, 50150, 50200, 50250,50300, 50350, 50400, 50450, 50500,57050, 57100, 57100, 57150, 57200, 57500**
- The following values are used to classify the drugs:
  Tylenol only: **00260, 02036, 02335, 32905, 60595, 99153**
  Opioid only: **21550, 96045, 00283, 02333, 04538, 07180, 08246, 09600, 14955, 15005, 18985, 19650, 22303, 25510, 29285, 29654, 34985, 60565, 92024, 94188, 95050, 96012, 96041, 96109, 98067, 99123**
  NSAID only: **35460, 92155, 94125, 00048, 00169, 00597, 01003, 01838, 02014, 02805, 03675, 10126, 12193, 12550, 15395, 15600, 18760, 19675, 20285, 20290, 27405, 61100, 92051, 92124, 92161, 93132, 93220, 93312, 94072, 94113, 94127, 96083, 96102, 99002, 99067**
  Opioid and Tylenol: **32945, 92180, 96028, 00251, 00280, 01124, 01268, 02340, 08470, 22305, 23385, 32915, 32920, 32925, 32930, 34110, 89039, 93089, 98036**
  Opioid and NSAID: **05040, 20210, 23390, 95178, 98043**
  Other: **01775, 61130**
- The following values indicated the specific type of pain:
  Head: **10554, 12100, 13201, 13551, 14101, 15002, 15101, 15151, 23650, 50050, 57050**
  Neck: **14552, 19001, 57050**
  Chest: **10500, 10501, 12650, 14851**
  Abdomen: **10551, 10552, 10553, 15450, 15451, 15452, 15453, 16051, 16101, 16500, 16651, 16701, 17001, 17151, 17452, 17651, 17751, 17901, 50150, 57100**
  Back: **19051, 19101, 50100**
  Lower Extremity: **19151, 19201, 19251, 19301, 19351, 50200, 50250, 50300, 57150**
  Upper Extremity: **19401, 19451, 19501, 19551, 19601, 50350, 50400, 50450, 57150**
  Extremity Fracture: **50200, 50250, 50300, 50350, 50400, 50450**
  Generalized: **10600, 10601**
  Other: **10550, 18000, 18701, 19651, 19701, 50500, 57200, 57500**

**Deliverable:**

- Well documented/commented code (I do not need the data since I should be able to run your code pulling the data from the website – <u>DO NOT CHANGE THE NAME OF ANY OF THE FILES</u>) that will create the three tables described above.

**Important Information for Submitting Project:**

- Save the file as LASTNAME_FIRSTNAME_SASPROJECTCODE.  This is the **ONLY** file that I will run. The **ONLY** modification that will be made to this file before I run it will be the changing of the pathname. You <u>do not</u> need to submit the %table1 macro, but your program needs to call this macro. If you need to create formats or write additional macros that should be done in separate files. You may submit up to two additional files: a macro file (containing any additional macros you may create) saved as LASTNAME_FIRSTNAME_MACROS and a format file saved as LASTNAME_FIRSTNAME_FORMATS.  Again, make sure that your main program calls these files, where appropriate.
- DO NOT create any permanent data set or formats.

**Grading**:

- Following of the instructions and code that runs without error after modification of the pathname
- Documentation of your code, including comments and titles
- Efficiency of your code (e.g. where appropriate to streamline analyses or data creation, please use a macro/array and macro variables)
- Make sure variable values are clear, either through variable creation or formats
- Make sure variable names are clear, either through definition or labels
- Correct creation of the three tables – contains the correct information and numbers.