Homework 1

Part 3

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2/2/24

Enrollment Data

Answer the following based on the enrollment data:

1. How many observations exist in your current dataset?

There appears to be a yield of 13,276,162 total observations in the full dataset.

2. How many different *plan_types* exist in the data?

There are 18 total rows in the table when looking just at plan type, so there are 18 total plan types.

3. Provide a table of the count of plans under each plan type in each year.

Below is the table produced when grouping by plan type and year.

Table 1: Plan Types by Year

Plan Type	2010	2011	2012	2013	2014	2015
Medicare Prescription Drug Plan	893,609	771,694	815,223	826,907	1,122,209	991,457
HMO/HMOPOS	506,802	528,473	507,272	530,909	523,304	479,275
Local PPO	417,551	515,700	636,701	633,884	664,716	704,993
PFFS	385,733	45,781	36,423	31,919	24,905	13,658
Employer/Union Only Direct Contract PDP	28,700	28,697	28,669	25,526	25,528	25,630
Regional PPO	24,442	22,773	21,602	19,970	19,773	17,578
1876 Cost	6,035	6,851	7,633	7,731	7,069	7,157
HCPP - 1833 Cost	3,604	11	11	10	9	9
Employer/Union Only Direct Contract PFFS	3,332	3,329	3,323	0	0	0
National PACE	717	781	858	953	1,118	1,216
Continuing Care Retirement Community	142	0	0	0	0	0
MSA	135	6,421	6,416	6,431	6,449	6,518
PSO (State License)	123	176	171	0	0	0
ESRD I	117	0	0	0	0	0
Pilot	53	3	3	2	2	2
ESRD II	8	0	0	0	0	0
Medicare-Medicaid Plan HMO/HMOPOS	0	0	0	265	1,319	4,130

4. Remove all special needs plans (SNP), employer group plans (eghp), and all "800-series" plans. Provide an updated table after making these exclusions.

After removing the three different groups by filtering them out, the table appears as below.

Table 2: Revised plan types by year

Plan Type	2010	2011	2012	2013	2014	2015
Medicare Prescription Drug Plan	391,205	295,458	289,044	278,091	301,082	269,153
PFFS	54,119	22,038	17,449	12,945	6,053	4,232
HMO/HMOPOS	34,460	33,931	37,551	37,179	38,893	36,588
0	29,733	0	0	0	0	0
Local PPO	11,652	13,874	17,030	17,089	17,169	16,728
Regional PPO	10,659	10,995	11,279	9,660	10,420	8,531
1876 Cost	4,923	5,829	6,647	6,759	6,207	6,329
National PACE	717	781	858	953	1,118	1,216
ESRD I	117	0	0	0	0	0
PSO (State License)	97	141	143	0	0	0
MSA	68	131	132	145	163	232
Continuing Care Retirement Community	64	0	0	0	0	0
Medicare-Medicaid Plan HMO/HMOPOS	0	0	0	265	1,319	4,130

5. Merge the the contract service area data to the enrollment data and restrict the data only to contracts that are approved in their respective counties. Limit your dataset only to plans with non-missing enrollment data. Provide a graph showing the average number of Medicare Advantage enrollees per county from 2008 to 2015.

After merging the two datasets, the following graph is produced. I was unable to use pre 2010 data due to the code in Plan Data filtering from 2010 onwards it seems.

Average Enrollment per Year
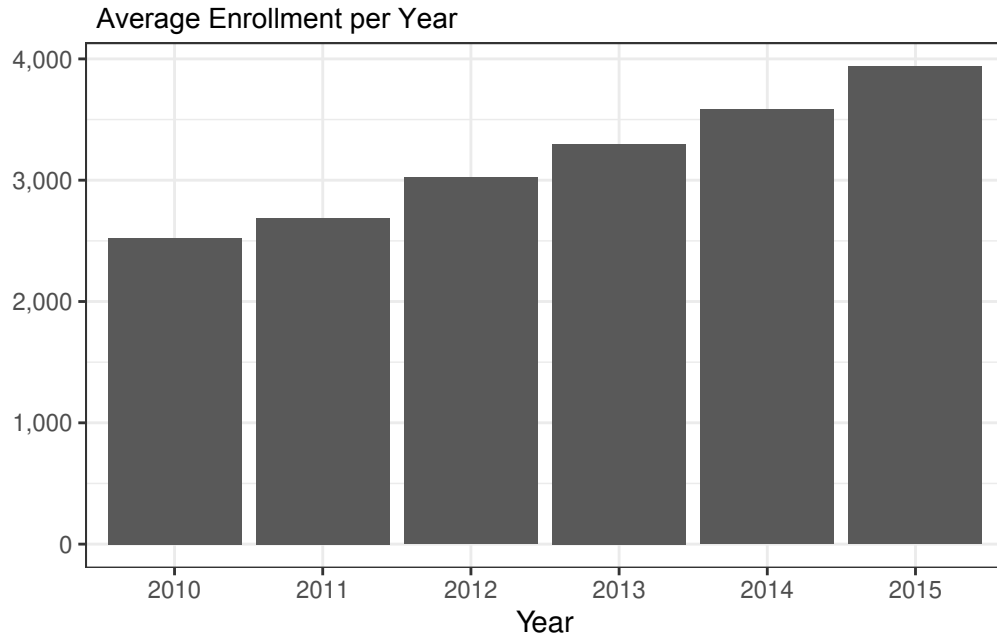
Premium Data

6. Merge the plan characteristics data to the dataset you created in Step 5 above. Provide a graph showing the average premium over time. Don't forget about formatting!

After merging the market penetration data, the graph below is displayed. 2014 data appears missing based on the spike.
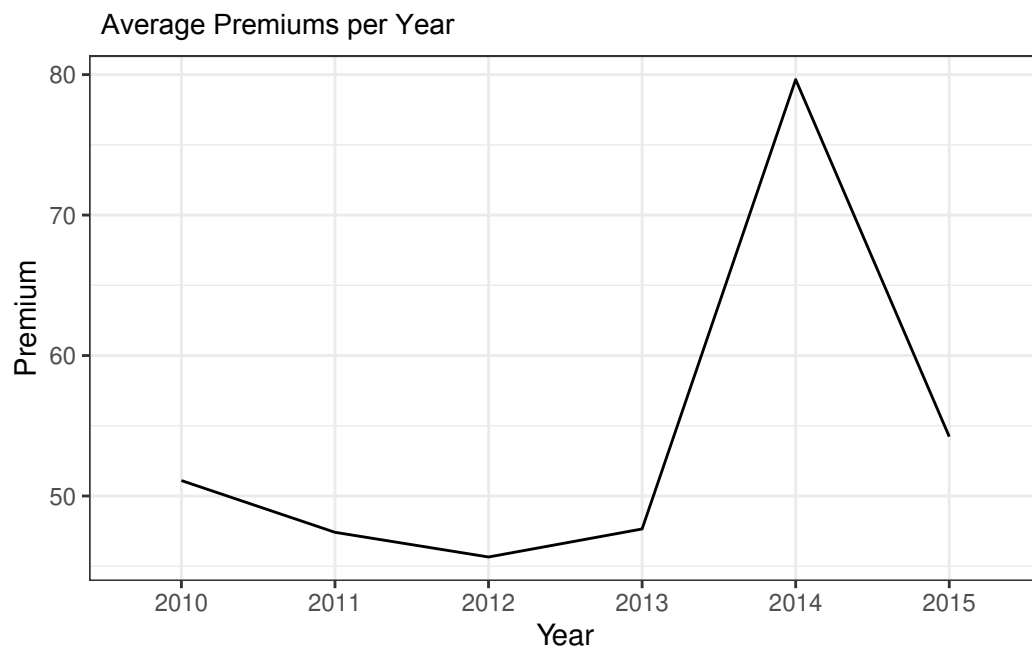
7. Provide a graph showing the percentage of $0 premium plans over time. Also...remember to format things.

The graph of zero premium plans is below, where the same spike in 2014 due to seemingly missing data appears.

Percentage of $0 Premium Plans by Year
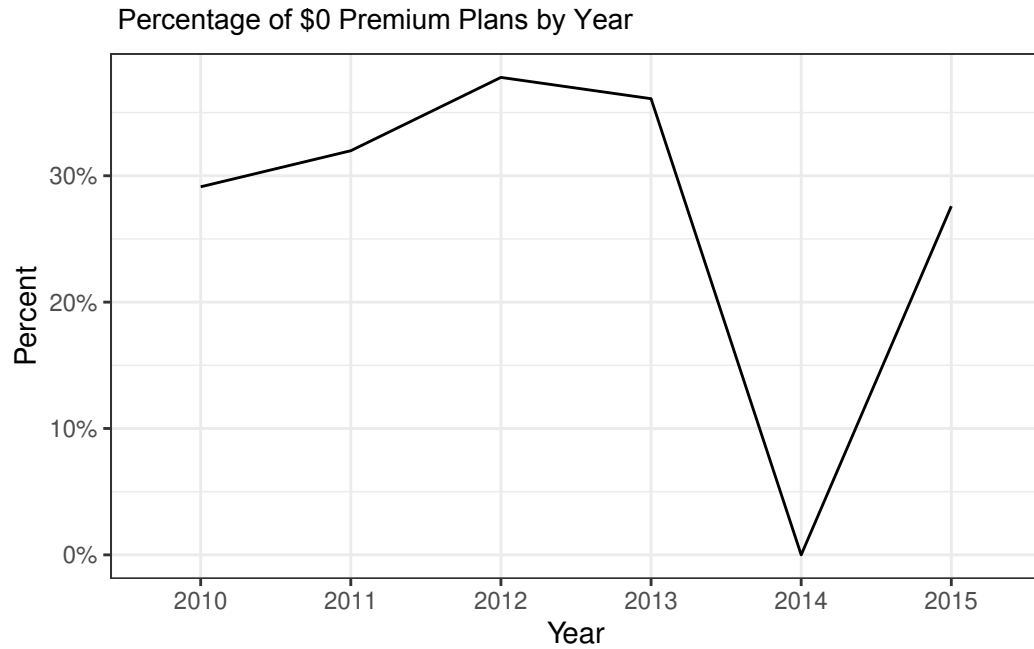
Summary Questions

8. Why did we drop the "800-series" plans?

The 800 series plans are most likely excluded because they are employer or union sponsored enrollments, and this probably often sidesteps the general requirement of being 65 or older to qualify, or a US resident for at least 5 years; this means they are not truly reflective of how most people will engage with the medicaid program.

9. Why do so many plans charge a $0 premium? What does that really mean to a beneficiary?

Costs are managed when plans charge a $0 premium, as it is likely that the provider has entered into a contract with a network of hospitals or physicians, and the savings that come with this are passed onto enrollees. This does not mean the beneficiary actually pays $0, as they may have to pay deductibles and other fees beyond the no-cost premium.

10. Briefly describe your experience working with these data (just a few sentences). Tell me one thing you learned and one thing that really aggravated you.

I was actually able to load the code this time and begin picking away at it, although I still encountered many difficulties. I was able to consolidate much of my difficulties after understanding how to properly use Quarto with the file that was provided, and was able to move my work that I did in the separate analysis file over. I am still getting conmfortable using everything, but I feel a bit better than when class first started.