Homework 1

Research in Health Economics, Spring 2024

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Enrollment Data

Answer the following based on the enrollment data:

1. How many observations exist in your current dataset?

In the current dataset, there are 13,276,162 total observations.

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

There are 18 total different plan types.

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

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resized.
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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.

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resized.
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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.
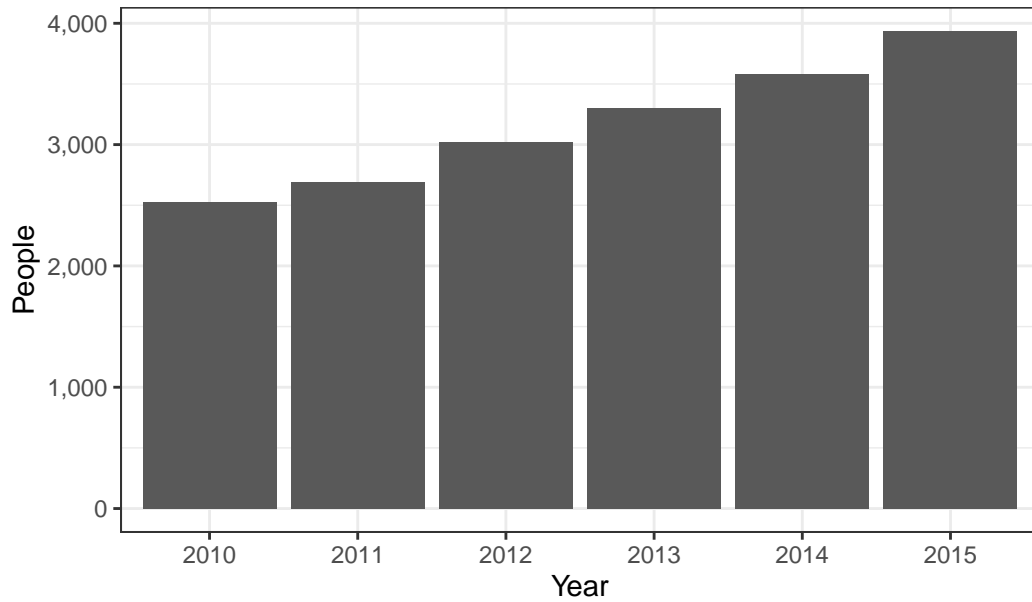

Figure 1: Average Enrollment

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!
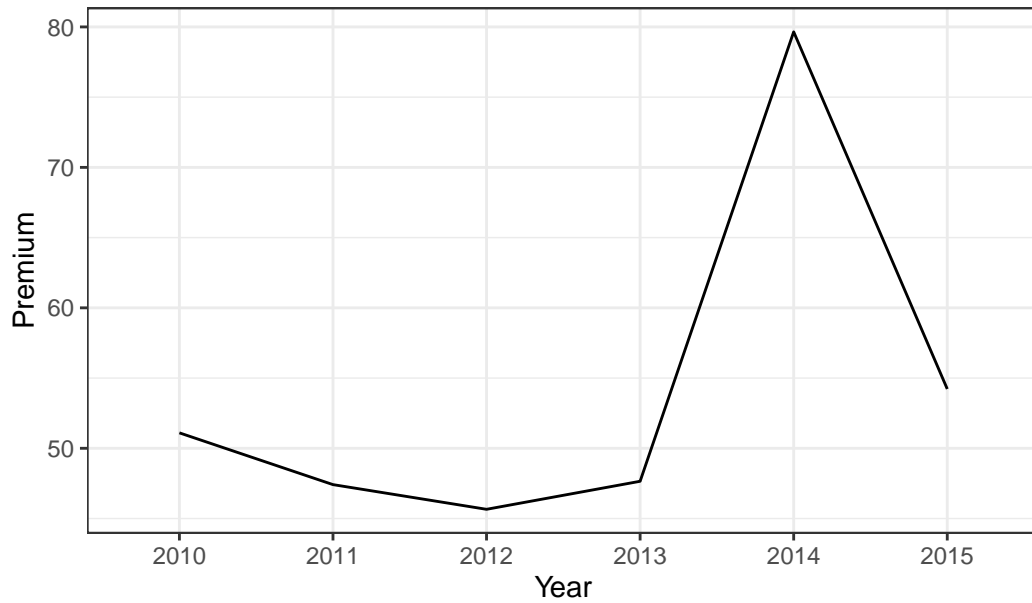

Figure 2: Average Premiums

7. Provide a graph showing the percentage of $0 premium plans over time. Also...remember to format things.
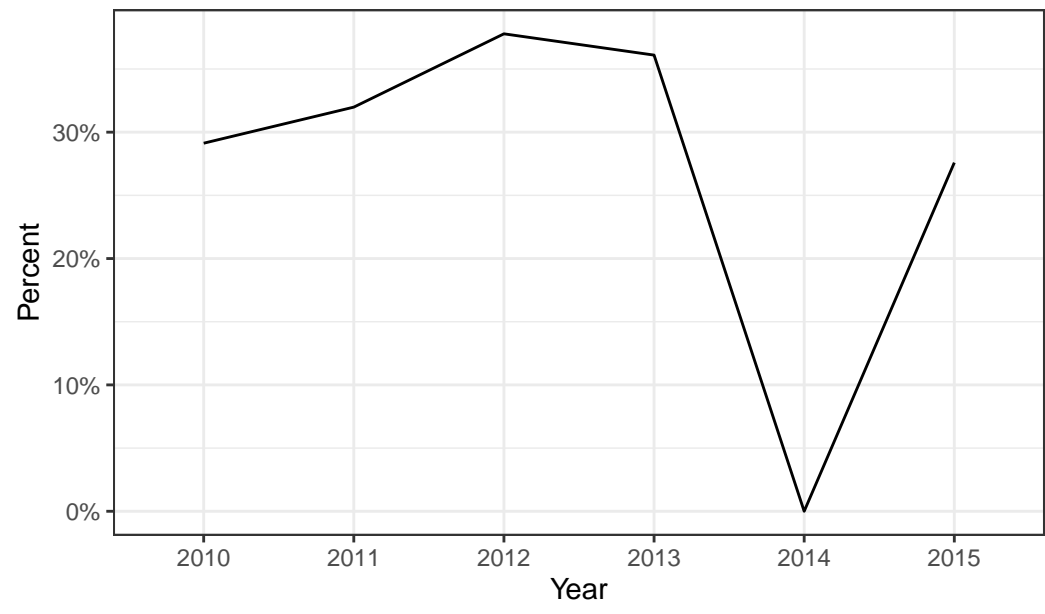

Figure 3: Share of 0 premium plans

Summary Questions

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

The 800-series plans may have been dropped because they are not in the average peron's choice set, meaning they are not accessible to all Medicare Advantage enrollees due to them being Employer Group Waiver Plans. Since they are not available to all enrollees, we don't want them reflected in our summary of MA enrollment.

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

Many plans charge a $0 premium for a couple reasons, firstly that Medicare advantage plans try to attract beneficiaries by having (or appearing to have) lower upfront costs, with premiums being one of the biggest upfront costs. Another reason is that these plans might have higher deductibles and copays, and finally that the government sometimes subsidizes $0 premium plans. What this means for the beneficiary is that they still have to pay a premium for Part B, so they essentially are not paying an additional premium but will still have up front costs.

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 had a better experience working with the data the third time around, but still had setbacks here and there which made it a very long process. One thing I learned is how to work in a quarto file and the process of creating a pdf that pulls in data from our analysis. One thing that aggravated me is that I could not figure out how to edit the figures (such as font size on a graph) after saving the image and putting it in the Quarto file, which became an issue when I wanted to make some formatting changes.

Link to my Github Repository: https://github.com/riadharnidharka/Econ470HW1/tree/master