

Homework 1 - Research in Health Economics

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Question 1

```
paste0("There are ", total_obs , " observations in the dataset")
```

```
## [1] "There are 19126783 observations in the dataset"
```

Question 2

There are 26 different plans in the dataset.

Question 3

```
options(knitr.kable.NA = 0)
knitr::kable(pe.year1,
              col.names=c("Plan Type","2007", "2008", "2009", "2010","2011","2012","2013"
                          ,"2014","2015"),
              format.args = list(big.mark=","), caption = "Plan Count by Year")
```

Question 4

```
options(knitr.kable.NA = 0)
knitr::kable(pe.year2,
              col.names=c("Plan Type","2007", "2008", "2009", "2010","2011","2012","2013"
                          ,"2014","2015"),
              format.args = list(big.mark=","), caption = "Plan Count by Year")
```

Question 5

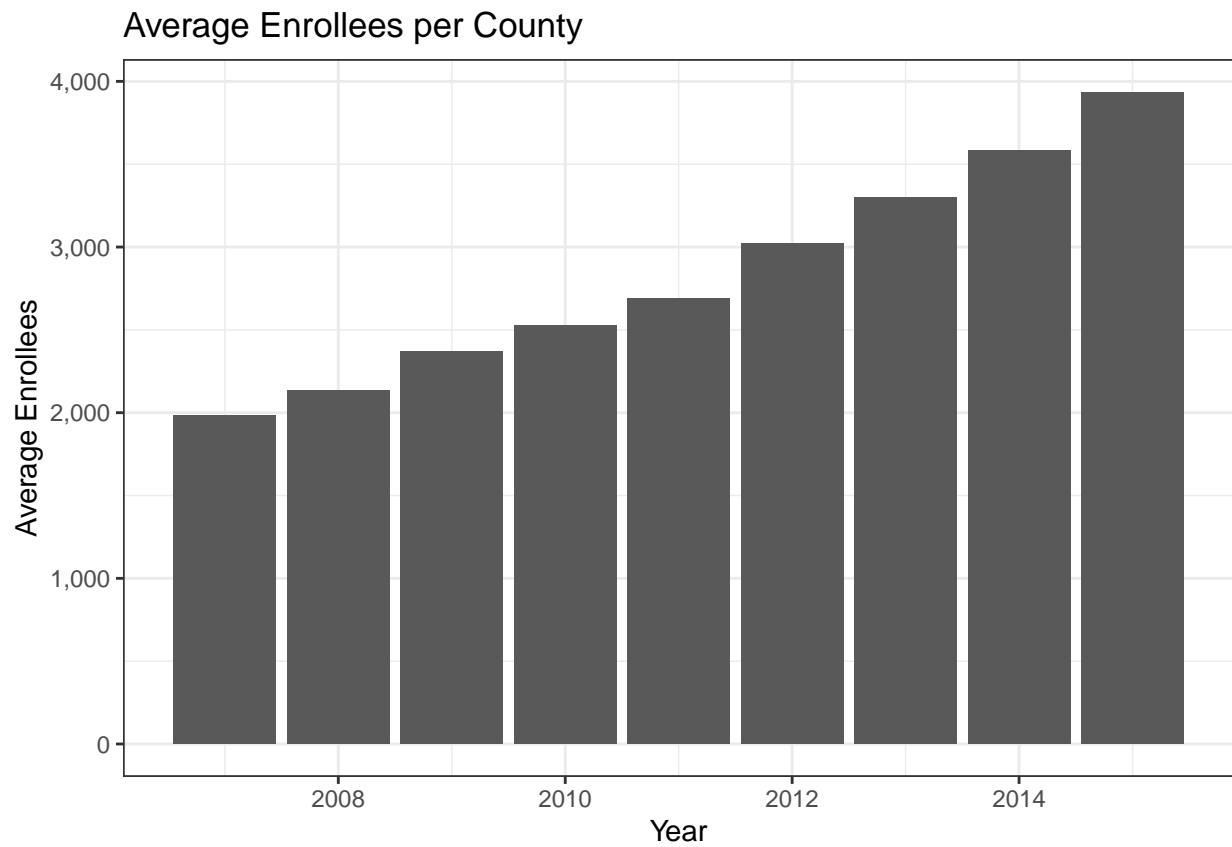
```
fig.avg.enrollment
```

Table 1: Plan Count by Year

Plan Type	2007	2008	2009	2010	2011	2012	2013	2014
Medicare Prescription Drug Plan	920,058	963,478	945,794	893,609	771,694	815,223	826,907	1,000,000
PFFS	364,285	630,756	683,361	385,733	45,781	36,423	31,919	0
HMO/HMOPOS	60,012	70,176	479,978	506,802	528,473	507,272	530,909	0
Employer/Union Only Direct Contract PDP	32,358	29,113	25,860	28,700	28,697	28,669	25,526	0
Regional PPO	26,402	27,990	25,943	24,442	22,773	21,602	19,970	0
Local PPO	17,427	38,470	405,197	417,551	515,700	636,701	633,884	0
1876 Cost	5,855	5,459	5,825	6,035	6,851	7,633	7,731	0
MSA	4,422	16,515	12,267	135	6,421	6,416	6,431	0
MSA Demo	3,274	0	0	0	0	0	0	0
Employer Direct PFFS	3,247	0	0	0	0	0	0	0
SHMO	1,125	0	0	0	0	0	0	0
MN Senior Health Options	968	0	0	0	0	0	0	0
PSO (State License)	421	535	87	123	176	171	0	0
National PACE	405	548	616	717	781	858	953	0
PSO (Federal Waiver of State License)	162	0	0	0	0	0	0	0
Continuing Care Retirement Community	95	122	158	142	0	0	0	0
ESRD I	75	122	123	117	0	0	0	0
MA Health Senior Care Options	73	0	0	0	0	0	0	0
WI Partnership Program	42	0	0	0	0	0	0	0
MN Disability Health Options	21	0	0	0	0	0	0	0
Pilot	15	12	201	53	3	3	2	0
HCPP - 1833 Cost	13	13	3,938	3,604	11	11	10	0
ESRD II	12	12	7	8	0	0	0	0
Employer/Union Only Direct Contract PFFS	0	3,332	3,335	3,332	3,329	3,323	0	0
RFB PFFS	0	0	3,006	0	0	0	0	0
Medicare-Medicaid Plan HMO/HMOPOS	0	0	0	0	0	0	265	0

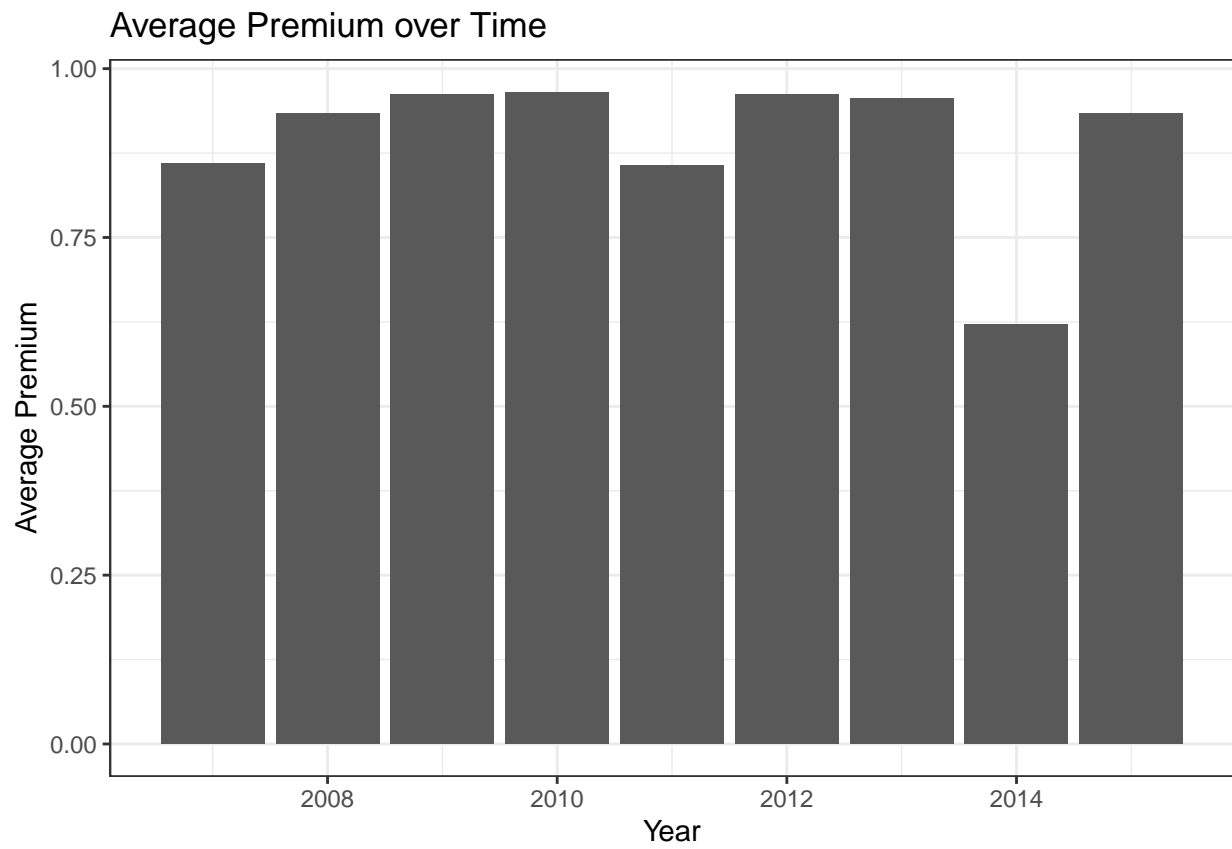
Table 2: Plan Count by Year

Plan Type	2007	2008	2009	2010	2011	2012	2013	2014
Medicare Prescription Drug Plan	398,167	428,936	415,027	391,205	295,458	289,044	278,091	301,000
PFFS	51,987	105,859	89,586	54,119	22,038	17,449	12,945	6,000
HMO/HMOPOS	30,670	34,545	36,166	34,460	33,931	37,551	37,179	38,800
Regional PPO	7,254	7,794	8,470	10,659	10,995	11,279	9,660	10,400
Local PPO	6,116	7,612	9,929	11,652	13,874	17,030	17,089	17,100
1876 Cost	5,074	4,595	4,845	4,952	5,838	6,650	6,761	6,200
MSA	2,177	3,303	2,459	68	131	132	145	100
SHMO	458	0	0	0	0	0	0	0
National PACE	405	548	616	717	781	858	953	1,100
PSO (State License)	376	394	75	97	141	143	0	0
MSA Demo	129	0	0	0	0	0	0	0
PSO (Federal Waiver of State License)	110	0	0	0	0	0	0	0
ESRD I	75	122	123	117	0	0	0	0
Continuing Care Retirement Community	68	66	60	64	0	0	0	0
Pilot	15	12	201	53	3	3	2	0
HCPP - 1833 Cost	13	13	3,938	3,604	11	11	10	0
RFB PFFS	0	0	3,006	0	0	0	0	0
Medicare-Medicaid Plan HMO/HMOPOS	0	0	0	0	0	0	265	1,300



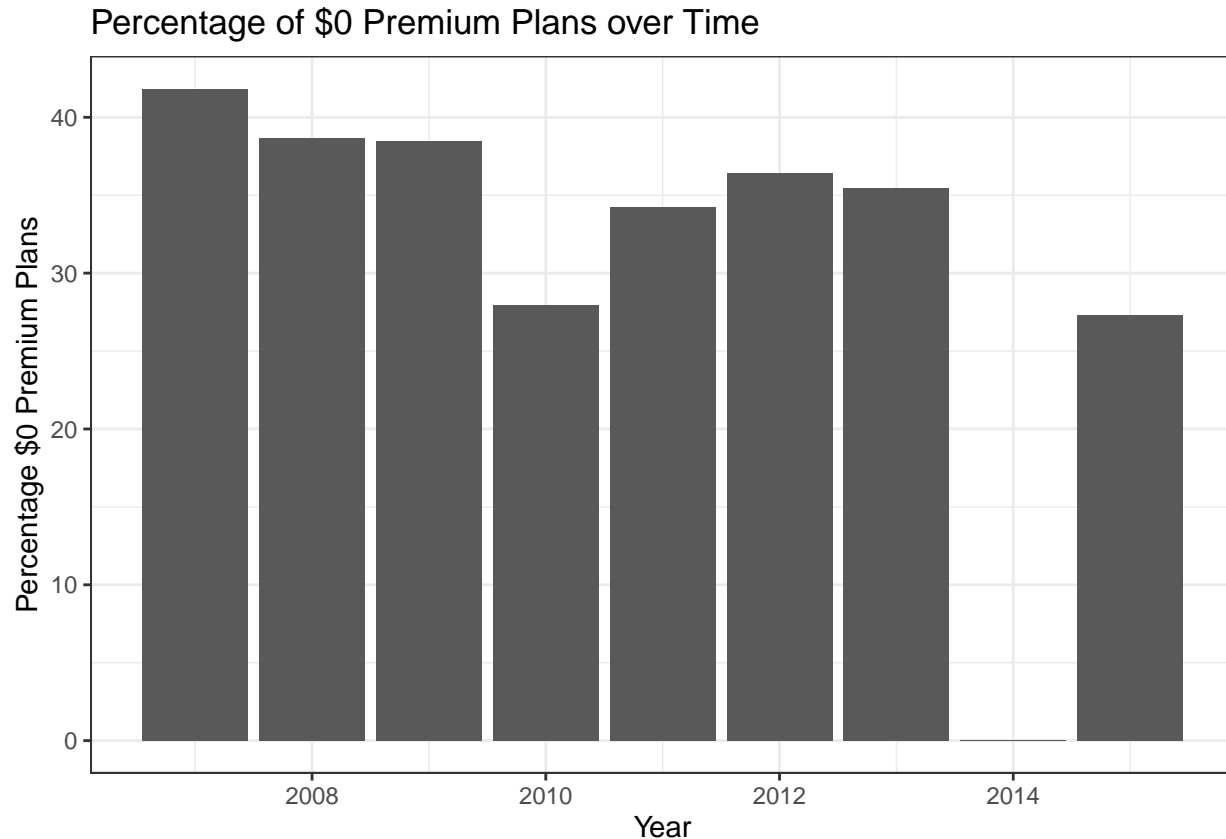
Question 6

```
fig.avg.premium
```



Question 7

`fig.0.premium`



Question 8

We dropped the “800-series” plans as those represent people who are part of a union and thus do not represent the regular Medicare Advantage user.

Question 9

Many Medicare Advantage plans offer \$0 premiums as the insurance plans may have private contracts with certain health care providers to save costs and may provide preventative care leading to healthier patients who are likely to have lower health costs. While the premium may be \$0, the patients may have other out-of-pocket payments such as copays or deductibles. Also, beneficiaries are likely to be restricted to the health care providers covered by the plan as they will have to pay more to visit doctors outside the plan.

Question 10

Working with this data was a little difficult as I was not familiar with the dataset and some of the terms used. I am also not as familiar with R so there is a steep learning curve for me. It was frustrating when the codes would not run or take a long time to learn as it made it difficult to understand what I did wrong.