

Homework Assignment: bae-j-hwk-1-3

2023-01-30

Enrollment Data

1. How many observations are in your current dataset?

There are 19126783 observations in my dataset full.ma.data

2. How many different plan_types are there?

There are 26 different plan_types in full.ma.data

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

| plan_type | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|--------|--------|--------|--------|--------|--------|--------|---------|--------|
| Medicare Prescription Drug Plan | 920058 | 963478 | 945794 | 893609 | 771694 | 815223 | 826907 | 1122209 | 991457 |
| PFFS | 364285 | 630756 | 683361 | 385733 | 45781 | 36423 | 31919 | 24905 | 13658 |
| HMO/HMOPOS | 60012 | 70176 | 479978 | 506802 | 528473 | 507272 | 530909 | 523304 | 479275 |
| Employer/Union Only Direct Contract PDP | 32358 | 29113 | 25860 | 28700 | 28697 | 28669 | 25526 | 25528 | 25630 |
| Regional PPO | 26402 | 27990 | 25943 | 24442 | 22773 | 21602 | 19970 | 19773 | 17578 |
| Local PPO | 17427 | 38470 | 405197 | 417551 | 515700 | 636701 | 633884 | 664716 | 704993 |
| 1876 Cost | 5855 | 5459 | 5825 | 6035 | 6851 | 7633 | 7731 | 7069 | 7157 |
| MSA | 4422 | 16515 | 12267 | 135 | 6421 | 6416 | 6431 | 6449 | 6518 |
| MSA Demo | 3274 | NA | NA | NA | NA | NA | NA | NA | NA |
| Employer Direct PFFS | 3247 | NA | NA | NA | NA | NA | NA | NA | NA |
| SHMO | 1125 | NA | NA | NA | NA | NA | NA | NA | NA |
| MN Senior Health Options | 968 | NA | NA | NA | NA | NA | NA | NA | NA |
| PSO (State License) | 421 | 535 | 87 | 123 | 176 | 171 | NA | NA | NA |
| National PACE | 405 | 548 | 616 | 717 | 781 | 858 | 953 | 1118 | 1216 |
| PSO (Federal Waiver of State License) | 162 | NA | NA | NA | NA | NA | NA | NA | NA |
| Continuing Care Retirement Community | 95 | 122 | 158 | 142 | NA | NA | NA | NA | NA |
| ESRD I | 75 | 122 | 123 | 117 | NA | NA | NA | NA | NA |
| MA Health Senior Care Options | 73 | NA | NA | NA | NA | NA | NA | NA | NA |
| WI Partnership Program | 42 | NA | NA | NA | NA | NA | NA | NA | NA |
| MN Disability Health Options | 21 | NA | NA | NA | NA | NA | NA | NA | NA |
| Pilot | 15 | 12 | 201 | 53 | 3 | 3 | 2 | 2 | 2 |
| HCPP - 1833 Cost | 13 | 13 | 3938 | 3604 | 11 | 11 | 10 | 9 | 9 |
| ESRD II | 12 | 12 | 7 | 8 | NA | NA | NA | NA | NA |

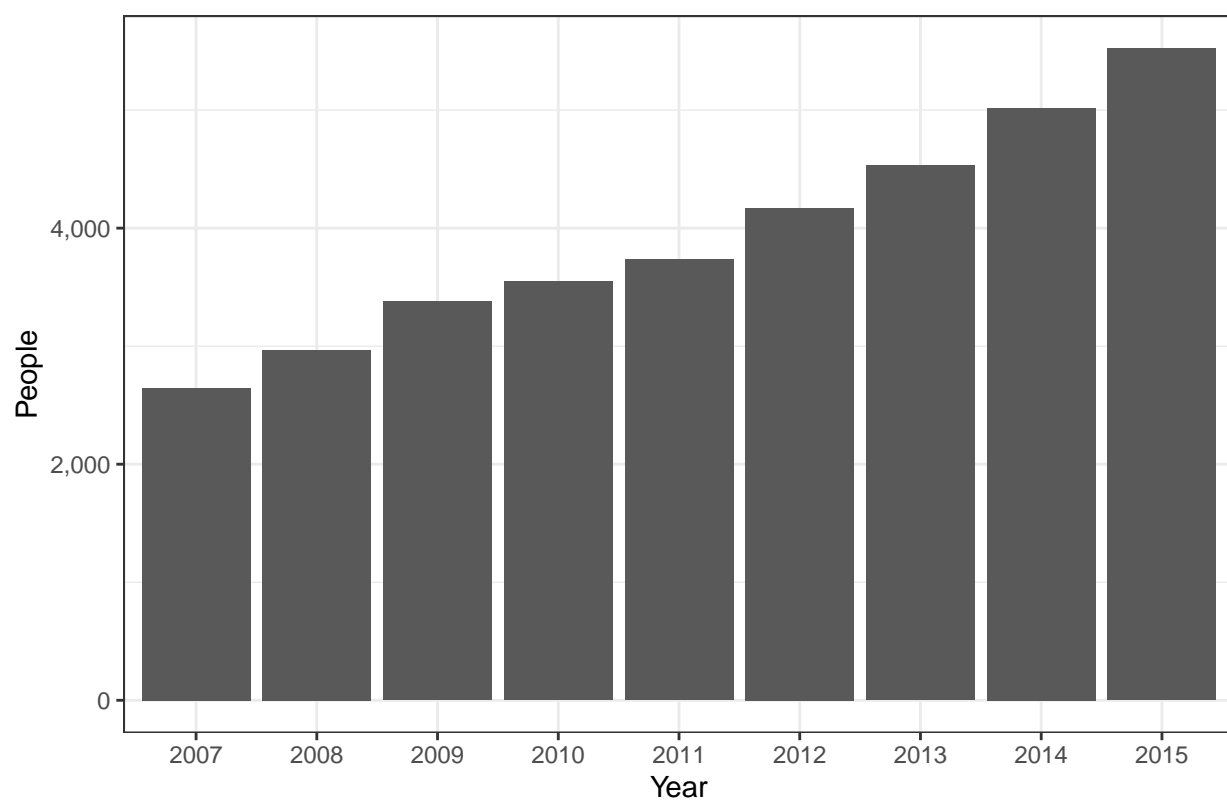
| plan_type | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|--|------|------|------|------|------|------|------|------|------|
| Employer/Union Only Direct Contract PFFS | NA | 3332 | 3335 | 3332 | 3329 | 3323 | NA | NA | NA |
| RFB PFFS | NA | NA | 3006 | NA | NA | NA | NA | NA | NA |
| Medicare-Medicaid Plan HMO/HMOPOS | NA | NA | NA | NA | NA | NA | 265 | 1319 | 4130 |

4. Remove all special needs plans (SNP), employer group plans (eghp), and all “800-series” plans. Provide an updated version of Table 1 after making these exclusions.

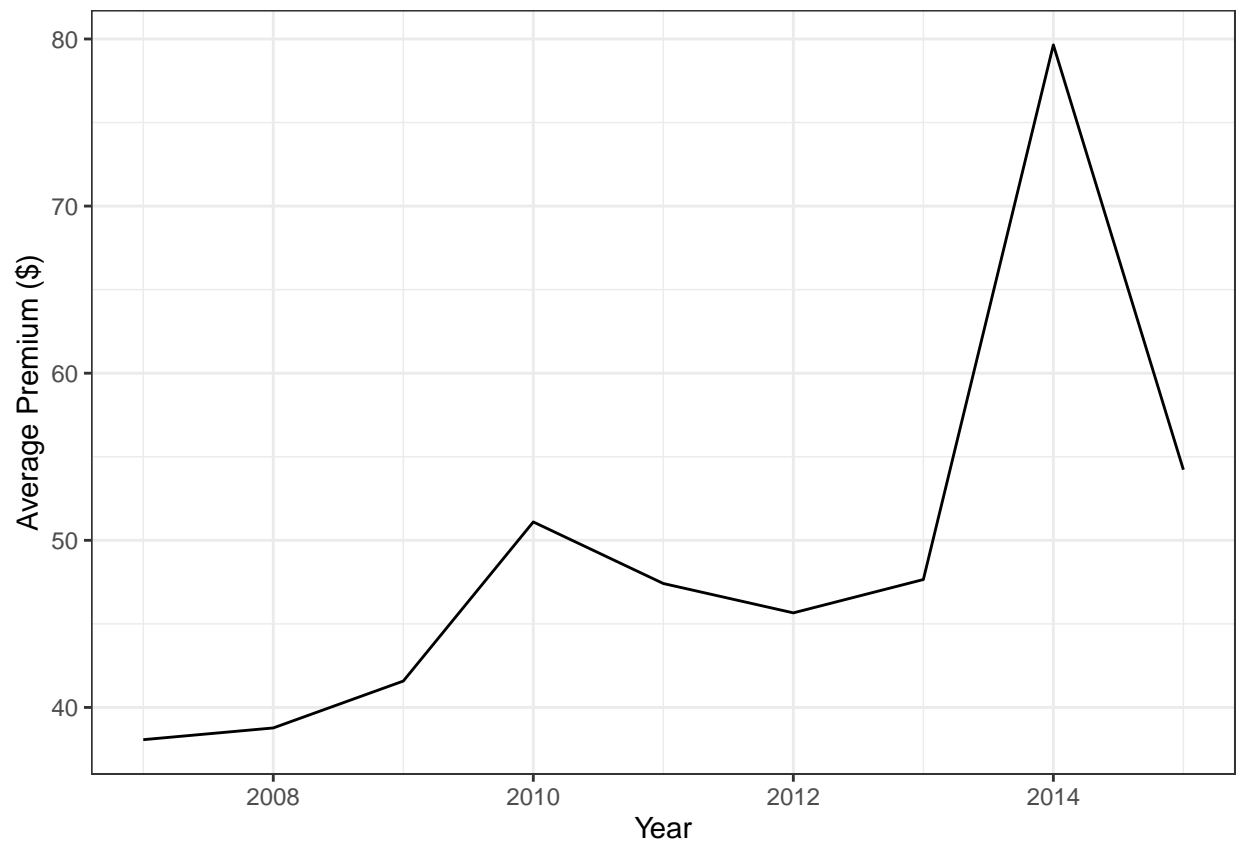
| plan_type | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Medicare Prescription Drug Plan | 398167 | 428936 | 415027 | 391205 | 295458 | 289044 | 278091 | 301082 | 269153 |
| PFFS | 51987 | 105859 | 89586 | 54119 | 22038 | 17449 | 12945 | 6053 | 4232 |
| HMO/HMOPOS | 30670 | 34545 | 36166 | 34460 | 33931 | 37551 | 37179 | 38893 | 36588 |
| Regional PPO | 7254 | 7794 | 8470 | 10659 | 10995 | 11279 | 9660 | 10420 | 8531 |
| Local PPO | 6116 | 7612 | 9929 | 11652 | 13874 | 17030 | 17089 | 17169 | 16728 |
| 1876 Cost | 5048 | 4577 | 4781 | 4923 | 5829 | 6647 | 6759 | 6207 | 6329 |
| MSA | 2177 | 3303 | 2459 | 68 | 131 | 132 | 145 | 163 | 232 |
| SHMO | 458 | NA | NA | NA | NA | NA | NA | NA | NA |
| National PACE | 395 | 548 | 615 | 717 | 781 | 858 | 953 | 1118 | 1216 |
| PSO (State License) | 376 | 394 | 75 | 97 | 141 | 143 | NA | NA | NA |
| MSA Demo | 129 | NA | NA | NA | NA | NA | NA | NA | NA |
| PSO (Federal Waiver of State License) | 110 | NA | NA | NA | NA | NA | NA | NA | NA |
| ESRD I | 75 | 122 | 123 | 117 | NA | NA | NA | NA | NA |
| Continuing Care Retirement Community | 68 | 66 | 60 | 64 | NA | NA | NA | NA | NA |
| NA | NA | NA | 13619 | 29733 | NA | NA | NA | NA | NA |
| RFB PFFS | NA | NA | 3006 | NA | NA | NA | NA | NA | NA |
| Medicare-Medicaid Plan HMO/HMOPOS | NA | NA | NA | NA | NA | NA | 265 | 1319 | 4130 |

5. Provide a graph showing the average number of Medicare Advantage enrollees per county from 2008 to 2015

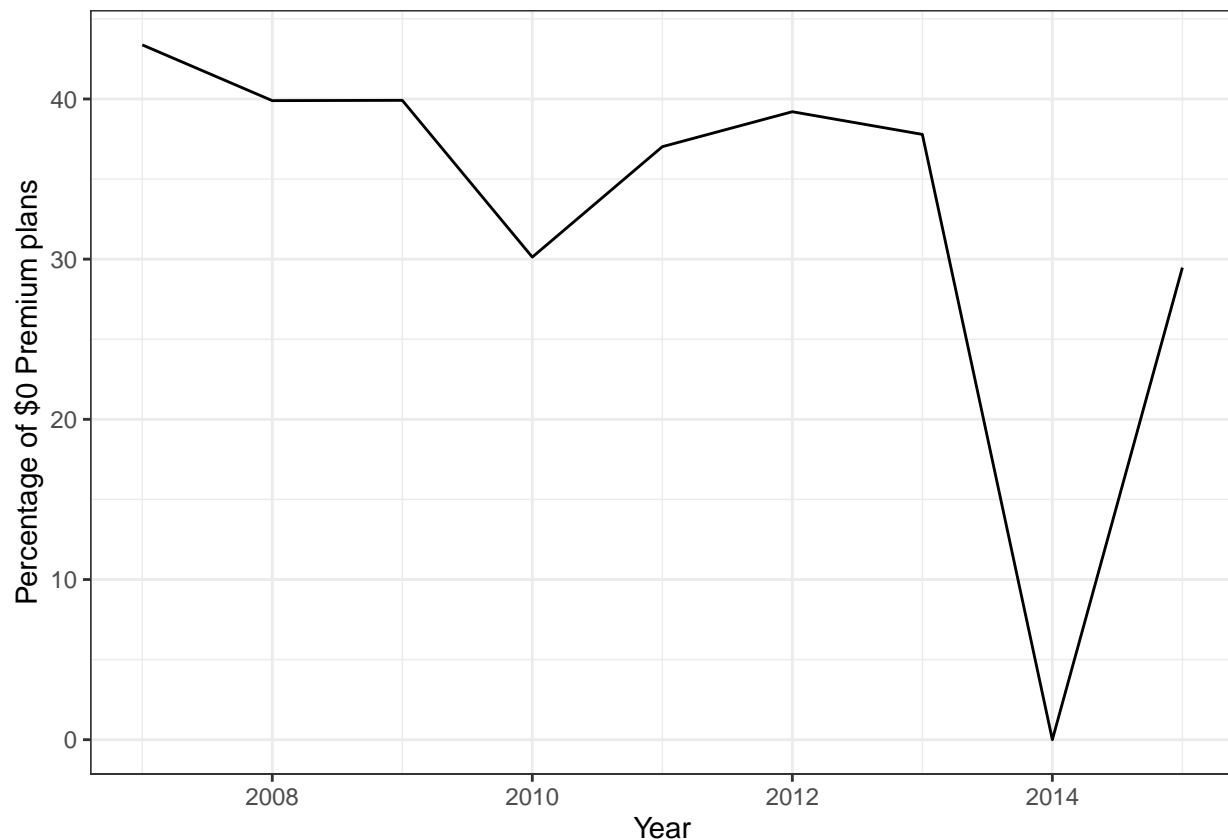
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## 'summarise()' has grouped output by 'fips'. You can override using the
## '.groups' argument.
```



6. Provide a graph showing the average premium over time



7. Provide a graph showing the percentage of \$0 premium plans over time



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

800 series plans are Employer Group Waiver Plans (EGWPs), offered by third parties to employers and union group sponsors. Therefore, the beneficiaries don’t actually have a contract with CMS in these plans, which is why we dropped them.

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

Many plans charge a \$0 premium because it is an appealing factor to attract a huge pool of healthy, low-cost beneficiaries. However, this could mean that their out of pocket costs, such as co-pay, co-insurance, and deductibles could be much higher than plans with higher premiums.

10. Briefly describe your experience working with these data. Tell me one thing you learned and one thing that really aggravated you.

It was super challenging to work with so many datasets, especially since I’ve never dealt with data this big before. It took my laptop forever to load and sort through data, which made me frustrated at times. From this homework assignment, I learned how to code, make tables & graphs, and organize/merge datasets in R.