

The State of Individual Health Insurance
Policies Sold on the Federal Exchange
Pursuant to the Affordable Care Act

Seth J. Chandler¹

December 4, 2014

¹Foundation Professor of Law, Director, Health Law and Policy Institute, University of Houston Law Center. The views expressed here are those of the author and do not necessarily reflect those of the University of Houston.

Introduction

The Federally Facilitated Marketplace (FFM) serves over 27 states in selling individual and small group health insurance policies pursuant to section 1321(c) of the Affordable Care Act. This document engages in data mining on government documents to examine the state of that market in some depth. It focuses on the premiums of individual policies sold on that market¹ as disaggregated by the amount of cost sharing demanded by the policy (“metal level”) and the choice offered by the policy in selecting one’s health care providers (“plan type”). It compares the premiums for policies effective in 2014 with those effective in 2015. It pays particular attention to “persistent” policies, those plans that were available in both 2014 and 2015, which amounts to about one third of those policies sold during either year. In addition, the document explores the changes in cost sharing that occurred between 2014 and 2015 and the premiums for the second lowest “silver” policies. These premiums are particularly important because they determine the size of the subsidies the federal government pays to purchasers of policies sold on the FFM. Finally it explores competition through a look at the number of sellers of various types of policies as disaggregated by the county in which they are sold.

Executive summary

The key initial findings from this examination of the data on with respect to plans sold to individuals.

- The change in premiums between 2014 and 2015 depends significantly on the metal level of the plan and whether it is a PPO or HMO.
- Gross premiums for platinum plans are up significantly in price, 21%, whereas bronze plans and catastrophic plans are down over 11%.² The

¹A separate document will perform a similar analysis on the small group market and compare, insofar as practicable, the premiums and features of small group policies to individual policies.

²See Table 3.

high increase in gross premiums for platinum plans creates a serious potential for an adverse selection death spiral in that segment of the market.

- Net premiums will show larger percentage increases and decreases than gross premiums for many individuals. This is so because substantial parts of the premiums are paid via subsidies from the federal government.
- PPO plans are up substantially in price, 8%, whereas HMO plans are down substantially, -18%.³
- The combination of increases in the more generous platinum and PPO plans and decreases in the less generous bronze and HMO plans may start to divert Americans into healthcare plans that offer lower benefits and somewhat less choice, albeit at a lower price than was paid this past year.
- Among plans that persisted between 2014 and 2015, the premium variations are less extreme: persistent bronze plans increased in price by 9.5% whereas persistent platinum plans increased in price by 14%.⁴ The larger variation in gross premiums overall is thus likely due to the exit of carriers who priced at extremes and low pricing by new entrants for bronze plans but very high prices for the more generous plans.⁵
- Cost sharing for the plans has increased somewhat, but many cost sharing arrangements have remained largely the same.
- If the number of distinct issuers in a rating area within a state is a measure of competition, the markets on healthcare.gov are marginally more competitive in 2015 than they were in 2014.⁶
- Competition, as measured by the number of unique issuers offering plans in each county, has increased substantially since 2014, but a market in which three or more insurers are actively competing is still a

³See Table 5.

⁴See Tables 10 and 12.

⁵See Tables 14 through 17.

⁶See Tables 21 and 22.

rarity, particularly for the plans that give consumers a greater amount of choice in selecting their doctor.⁷

Technical Preliminary

It is critically important that research, particularly on subjects of public controversy, be as widely reproducible as possible. This document attempts to meet that goal by basing its analysis on analysis conducted using open-source public domain software and data sources created by the federal government⁸ The analysis is done using the R language⁹ and produced using public domain software called RStudio¹⁰ and Sweave¹¹ that facilitate integration of code and text to create Latex and PDF files.¹²

The data used in the analysis comes from “zip” files available at health-

⁷See Table 29.

⁸ Healthcare.gov, the federal government’s website created pursuant to sections 1103 and 1311 of the Affordable Care Act, contains a large database of information on individual and small group health insurance plans offered by various states. It is currently available at the following URL: <https://www.healthcare.gov/health-and-dental-plan-datasets-for-researchers-and-issuers/>. When one combines the datasets from 2014 and 2015 on the individual marketplace, one ends up with approximately 134,000 observations of about 257 variables.

⁹R is a public domain software programming language and software environment widely used for statistical computing and graphics. It’s base version is augmented by various similarly licensed packages produced by various individuals and subject to extensive review. This analysis makes extensive use of several R packages: *dplyr*, *ggplot2*, *xtable* and *tidyr* packages.

¹⁰RStudio, available for non-commercial use for free at <http://www.rstudio.com> is an “integrated development environment” that facilitates production of R code and integration of such code with text.

¹¹Sweave is a public domain package available for users of R. It is well described at <https://www.stat.uni-muenchen.de/~leisch/Sweave/> and <https://stat.ethz.ch/R-manual/R-devel/library/utils/doc/Sweave.pdf>.

¹²At times, this software will defer printing of tables until later in the document when they “fit better.” Thus, if readers do not immediately see a table under discussion, look forward a page or two in the document and it should be present.

care.gov that decompress into an Excel file (XLSX format) and that were converted using Excel into a CSV file.¹³

Various steps were taken to clean up the data and improve its susceptibility to analysis.¹⁴

Premiums

I begin with a look at gross premiums and their changes between 2014 and 2015.

¹³Although R has some ability to read in XLSX files, it does considerably better at this point in time with CSV files. I have set the optional argument *stringsAsFactors* to TRUE to reduce the memory footprint of the resulting data.frame. I wrap the data.frame in dplyr's *tbl_df* function in order to make various printouts of the dataset more readable.

¹⁴This process first involves cleaning up the column names. As it stands, they have a lot of annoying periods in them. I use *gsub* to take every sequence of periods and replace them with the null string. Finally, healthcare.gov annoyingly stores a lot of numeric values as a string with dollar signs and commas. And I've read these strings in as factors in order to conserve space. R needs to be able to understand that these factors are actually numbers in order to perform appropriate arithmetic operations such as taking a mean or finding the second lowest value. I thus create a function *factoredCurrencyColumnToNumeric* that uses the *extract_numeric* function from the *tidyr* package to address this issue. I now use dplyr's *mutate_each* function and my *factoredCurrencyColumnToNumeric* function to create a new database healthcare.gov that contains the data in an appropriate format. The function *mutate_each* takes a list of functions (wrapped in *funcs*) and applies them to a list of columns. The columns contain information on premiums and deductibles. The cleansed data has been saved in both CSV and RData formats and is available to other researchers on request (schandler@uh.edu). All the code used to generate this document is similarly available on request.

Discussion

The change in premiums is a bit difficult to analyze because healthcare.gov still has not provided enrollment information on a plan-by-plan basis for 2014.¹⁵ Thus, some policies may be listed in the healthcare.gov dataset but are, in some sense, less relevant than others since very few people have purchased them.¹⁶ Despite this lack of transparency, we can scour the data that has been released. I first create some tables showing how mean premiums have changed by year for each metal level, by year for each plan type and by year for each metal level and plan type. In this segment of the analysis, I do not restrict myself to plans that persisted between 2014 and 2015. Rather, I look at all plans in 2014 and all plans in 2015.

By Metal Level

I first look at the premiums by metal level for each year. (Table 1 for 2014 and Table 2 for 2015.)

MetalLevel	Adult27_2014	Adult40_2014	Adult60_2014	Child_2014	Couple2Kids_2014
Catastrophic	202.02	245.84	521.74	122.22	734.47
Bronze	242.81	295.41	626.88	147.02	883.31
Silver	262.75	319.44	677.74	158.81	954.29
Gold	310.47	377.67	801.42	187.77	1129.86
Platinum	318.70	388.62	825.27	193.22	1163.43

Table 1: Mean Premiums for 2014 among different metal levels and purchaser types

I then look in Table 3 at the fractional changes in gross premiums by metal level for several types of purchasers.

¹⁵Indeed, HHS has not released much information on enrollment at all since . See discussions of this issue at <http://www.cnbc.com/id/102208522> and <http://acasignups.net/14/05/21/hhs-stop-issuing-monthly-reports>.

¹⁶In later analyses I may attempt to compensate for this problem by using “quantile weighting” in which I obtain a weighted average of premiums in which lower priced plans are weighted more heavily.

MetalLevel	Adult27_2015	Adult40_2015	Adult60_2015	Couple2Kids_2015
Catastrophic	176.83	215.18	456.64	644.42
Bronze	215.36	262.00	555.98	784.69
Silver	263.12	319.95	678.85	958.34
Gold	311.30	378.49	803.02	1133.70
Platinum	384.70	469.11	996.20	1404.39

Table 2: Mean Premiums for 2015 among different metal levels and purchaser types

MetalLevel	Adult27_change	Adult40_change	Adult60_change	Couple_2Kids_change
Catastrophic	-0.12	-0.12	-0.12	-0.12
Bronze	-0.11	-0.11	-0.11	-0.11
Silver	0.00	0.00	0.00	0.00
Gold	0.00	0.00	0.00	0.00
Platinum	0.21	0.21	0.21	0.21

Table 3: Fractional premium changes among different metal levels and purchaser types

The picture here is quite clear. Bronze and catastrophic plans generally decline in gross premiums of about 11-12%. Gold and Silver premiums remained largely unchanged. And Platinum plans, likely due to a combination of moral hazard (higher-than-anticipated utilization) and serious adverse selection (sick insureds pick this plan), increased their gross premiums an average of almost 21%. There is, I would say, a serious threat of a death spiral with respect to platinum plans, particularly if individuals base decisions on net premiums rather than gross ones.

It is important to note, however, that changes in the net premiums – premiums that purchasers actually end up paying after subsidy pursuant to 26 U.S.C. §36B – are likely to be considerably larger than shown in the table above. If, for example, an individual adult age 40 purchased a platinum policy 2014 with a gross premium of \$389 per month but had a subsidy for 60% of that amount such that their net premium was only 155.6, that purchaser’s new gross premium of \$469 per month, though “only” a 21% increase, would create a new net premium of of about 235.6 which is an increase of 51% from its prior value. This effect is of course affected by what

has happened in the interim to the price of the second lowest silver plan in the purchaser’s rating area because, under 26 U.S.C. §36B(b)(2)(B)(i) it is this amount which, after subtracting an amount based on the household income of the purchaser, becomes the basis for the subsidy. The pricing of the second lowest silver plan is discussed below in this report.

The other clearly observable phenomenon is that the percentage changes in premium prices are largely independent of age. This is likely because various provisions in the ACA make it difficult for insurers to alter the premium trajectory from younger insureds to older insureds¹⁷ and, perhaps, because experience in 2014, did not differ on an age basis from what was anticipated. Further examination of the data shows that the pretty constant relationship of percentage change to the type of purchaser exists throughout the database. This fact permits me to simplify further analysis by frequently presenting the data simply for a representative type of purchaser, the individual adult age 40. Table 4 thus shows mean premiums and the fractional change for 40 year old adults purchasing an individual policy.

MetalLevel	Adult40_2014	Adult40_2015	Adult40_change
Catastrophic	245.84	215.18	-0.12
Bronze	295.41	262.00	-0.11
Silver	319.44	319.95	0.00
Gold	377.67	378.49	0.00
Platinum	388.62	469.11	0.21

Table 4: Fractional premium changes among different metal levels and Adult Individuals Age 40

By Plan Type

I now look at the data by plan type, i.e. HMO, PPO, etc, for the representative 40 year old individual adult for 2014 and 2015. I create, as before, a table (Table 5) showing the percentage change for each plan type.

Again, because the rate of decrease and increase and premiums appears invariant to the type of purchaser, I can produce a simplified table (Table 6)

¹⁷See section 1201 of the ACA.

PlanType	Adult27_change	Adult40_change	Adult60_change	Couple_2Kids_change
HMO	-0.18	-0.18	-0.18	-0.18
POS	-0.01	-0.01	-0.01	-0.01
EPO	0.05	0.05	0.05	0.08
PPO	0.08	0.08	0.08	0.08

Table 5: Fractional premium changes among different plan types and purchaser types

showing the figures for a representative 40 year old individual adult.

PlanType	Adult40_2014	Adult40_2015	Adult40_change
HMO	365.24	298.97	-0.18
POS	314.57	312.20	-0.01
EPO	316.78	334.17	0.05
PPO	302.97	328.33	0.08

Table 6: Fractional premium changes among different plan types and Adult Individuals Age 40

The data shows that there has been a significant decline in the price of HMO plans (about 18%) but increases in the prices of PPOs (8%) and EPOs (5%). POS plans have not seen much change in premiums.

By metal level and plan type together

I now look at changes by plan type and metal level together. As before, I first produce a table (Table 7) showing absolute levels of gross premiums and then produce a second table (Table 8) that shows fractional changes. The information displayed in these tables is quite telling. Bronze HMO plans see their premiums decline 31% on average from 2014 levels. On the other hand, Platinum PPO plans see their gross premiums increase 30%. For the reasons outlined earlier, this is likely to result in many cases in net premium increases of well over 50%. This picture would be consistent with insureds sorting themselves into plans based on their expected health. Silver and Gold plans see their rates change either negatively for bronze plans or positively for PPO plans. Those in the best health went for lower-value plans with

less freedom of choice in provider. Those in the worst health likely went for higher-value plans with greater freedom of choicer in provider.

MetalLevel	PlanType	Adult40_2014	Adult40_2015
Catastrophic	HMO	326.16	216.31
Catastrophic	POS	191.42	201.34
Catastrophic	EPO	234.07	240.29
Catastrophic	PPO	215.67	214.21
Bronze	HMO	358.68	248.26
Bronze	POS	272.47	251.79
Bronze	EPO	270.51	285.69
Bronze	PPO	258.31	271.80
Silver	HMO	341.05	307.68
Silver	POS	323.02	322.56
Silver	EPO	317.09	328.66
Silver	PPO	307.14	326.37
Gold	HMO	411.94	358.64
Gold	POS	375.23	372.23
Gold	EPO	358.99	387.70
Gold	PPO	361.28	390.61
Platinum	HMO	407.08	437.26
Platinum	POS	402.52	469.13
Platinum	EPO	389.65	465.49
Platinum	PPO	374.70	487.14

Table 7: Mean Premiums for 2014 and 2015 among different metal levels and plan types

Implications for an adverse selection death spiral

Observers of these statistics may see the infrequency of large positive increases in the premiums for various policies as evidence that the feared “death spiral” has not materialized and that the individual insurance market established by the Affordable Care Act is more stable than its critics have asserted. Such a conclusion would be a bit premature. Although it is true that the figures are better than many have anticipated, they evidence the seeds of a problem. Platinum plans of all sorts, but particularly PPO plans, are seeing the sort of hefty premium increases that should raise concern. While

MetalLevel	EPO	HMO	POS	PPO
Bronze	0.06	-0.31	-0.08	0.05
Catastrophic	0.03	-0.34	0.05	-0.01
Gold	0.08	-0.13	-0.01	0.08
Platinum	0.19	0.07	0.17	0.30
Silver	0.04	-0.10	-0.00	0.06

Table 8: Fractional premium changes among different metal Levels and plan types for adult individuals age 40

these plans do not form the majority of the market, there is a problem of contagion. As the gross price of these platinum policies increase – and the net price increases yet more – the healthier purchasers of these policies are likely disproportionately to shift their purchases to gold policies. But this will leave the Platinum pool populated by the most sick. If, in response, yet fewer insurers offer Platinum plans, because they fear the market for them is unstable, the sick former purchasers will likely shift their purchases to more available Gold policies. But this potentially sparks an adverse selection problem with Gold policies and begins the unraveling of a market. The disaggregation of premium increases shows that it is still not possible to assert with any confidence that the adverse selection problem endemic to systems of “community rating” has gone away.¹⁸

Premium Changes by persistency

The databases created as part of this project also permits comparison of premiums for persistent plans – those that were in effect in 2014 and 2015 – withdrawn plans – those that were in effect in just 2014 – and new entrants – those that were in effect in just 2015.¹⁹ Again, because premium change

¹⁸There must also be concerned that as transitional reinsurance further declines and as risk corridors no longer insulate insurers from risk, there will be further upward pressures on premiums.

¹⁹Determining what counts as the “same” plan is not a simple matter. There are some plans, for example, that have the same marketing name in 2014 and 2015 but have a different “plan id.” There are other plans that have the same “plan id” in 2014 and 2015 but have a different marketing name. There are plans that existed

rates do not appear to be affected substantially by purchaser type, I can simplify my analysis without much loss of generality by confining myself just to adults age 40.

By Metal Level and Persistency

We first look at metal level, persistency and premiums. In Table 9 we consider gross premiums. Table 10 shows changes in premiums.

MetalLevel	persistence	Adult40_2014	Adult40_2015
Bronze	persistent	241.28	256.41
Bronze	withdrawn	360.60	
Catastrophic	persistent	203.56	213.05
Catastrophic	withdrawn	290.55	
Gold	persistent	348.37	375.73
Gold	withdrawn	420.70	
Platinum	persistent	387.87	440.60
Platinum	withdrawn	389.80	
Silver	persistent	292.42	313.01
Silver	withdrawn	358.21	
Silver	new entrant		324.85
Platinum	new entrant		492.71
Gold	new entrant		381.33
Catastrophic	new entrant		218.04
Bronze	new entrant		265.96

Table 9: Mean Premiums for 2014 and 2015 among different metal levels and persistency

The data shows that, in the persistent plans, all plan types experienced a mean increase in gross premiums. The rate ranged from 5% in the catastrophic plans up to 14% for the premium plans. The data also shows that new in one rating area or one state in 2014 but then go on to expand to another rating area or state in 2015. Ultimately, after some experimentation and examination of the data, I have selected to define a plan as “the same” if it shares the same state, county, rating area, metal level, plan type and plan id. This methodology results in our database being populated 55,347 new entrant plans, 44,708 persistent plans and 33,677 withdrawn plans.

MetalLevel	persistent
Bronze	0.06
Catastrophic	0.05
Gold	0.08
Platinum	0.14
Silver	0.07

Table 10: Fractional premium changes for persistent plans among different metal Levels for adult individuals age 40

entrants seem to be pricing their policies on average somewhat higher than those who also sold policies in 2014. Troublingly this is most seriously the case with respect to Platinum Plans. It may well be that the rates charged by the new entrants are better reflections of the risk than those charged by those who were in the market in 2014 and thus have regulatory difficulties in massively raising their prices. The data also shows that the premiums charged by plans that withdrew from the market following 2014 tended to be higher priced on average than those that persisted. It may be that these plans simply got too little business to justify their continuation as they were then structured.

By Plan Type and Persistency

We can also consider what has happened to premiums for persistent plans broken down by plan type. Table 11, shows gross premiums. Table 12 shows fractional changes in gross premiums among the persistent plans broken down by plan type.

The story told from disaggregating the premium changes of persistent plans when broken down by plan type is similar to that just told with respect to disaggregation of premium changes when broken down by metal level. The more generous plans – the PPOs – experienced considerably higher price increases of 10% than did the more constricted HMO’s, which actually experienced no change in mean premiums. Moreover, newly entering PPOs appear to be pricing their policies at rates higher than those of plans that persisted. To the extent this is a function of a combination of experience and the regulatory retardation of premium prices increases by existing plans,

PlanType	persistence	Adult40_2014	Adult40_2015
EPO	persistent	312.18	333.13
EPO	withdrawn	322.08	
HMO	persistent	297.11	298.42
HMO	withdrawn	412.93	
POS	persistent	289.16	313.00
POS	withdrawn	339.35	
PPO	persistent	286.89	315.36
PPO	withdrawn	338.33	
PPO	new entrant		344.80
POS	new entrant		311.63
Indemnity	new entrant		155.53
HMO	new entrant		299.19
EPO	new entrant		335.05

Table 11: Mean Premiums for 2014 and 2015 among different metal levels and persistency

PlanType	persistent
EPO	0.07
HMO	0.00
POS	0.08
PPO	0.10

Table 12: Fractional premium changes for persistent plans among different metal Levels for adult individuals age 40

it augurs poorly for the future of the plans that offer insureds the greatest choice in providers. In short as will be discussed further, the plan pricing trends are likely to shunt purchasers into the cheapest plans that offer the least choice. This may or may not be a bad thing, but it is a trend to which attention needs to be given.

By Metal Level, Plan Type and Persistency

The narrative above in which the more generous plans experience the highest rates of premium increases is confirmed by further disaggregation of the data. A cluster of tables (Tables 13-17 show the absolute changes in premiums among both in absolute and fractional terms for all combinations of metal level, plan type and persistency.

MetalLevel	PlanType	persistence	Adult40_2014	Adult40_2015
Catastrophic	EPO	persistent	235.56	241.24
Catastrophic	EPO	withdrawn	231.02	
Catastrophic	HMO	persistent	212.90	216.78
Catastrophic	HMO	withdrawn	403.79	
Catastrophic	POS	persistent	193.98	201.75
Catastrophic	POS	withdrawn	189.58	
Catastrophic	PPO	persistent	196.51	209.01
Catastrophic	PPO	withdrawn	241.16	
Catastrophic	PPO	new entrant		227.50
Catastrophic	POS	new entrant		200.76
Catastrophic	Indemnity	new entrant		155.53
Catastrophic	HMO	new entrant		216.07
Catastrophic	EPO	new entrant		223.87

Table 13: Mean Premiums for 2014 and 2015 among different metal levels, plan types and persistency

The results show the new entrants tending to come in higher than the persistent plans. This may be the result of limits on the deterrents in the ACA on increases in premiums greater than 10% per year.²⁰ There is thus

²⁰A summary of this regulation is provided at

MetalLevel	PlanType	persistence	Adult40_2014	Adult40_2015
Bronze	EPO	persistent	272.95	288.61
Bronze	EPO	withdrawn	267.02	
Bronze	HMO	persistent	251.08	246.48
Bronze	HMO	withdrawn	427.49	
Bronze	POS	persistent	238.79	252.01
Bronze	POS	withdrawn	309.90	
Bronze	PPO	persistent	234.04	257.59
Bronze	PPO	withdrawn	304.14	
Bronze	PPO	new entrant		287.20
Bronze	POS	new entrant		251.66
Bronze	HMO	new entrant		248.94
Bronze	EPO	new entrant		283.01

Table 14: Mean Premiums for 2014 and 2015 among different metal levels, plan types and persistency

MetalLevel	PlanType	persistence	Adult40_2014	Adult40_2015
Silver	EPO	persistent	314.24	330.61
Silver	EPO	withdrawn	321.24	
Silver	HMO	persistent	301.83	303.09
Silver	HMO	withdrawn	369.60	
Silver	POS	persistent	301.02	319.60
Silver	POS	withdrawn	341.81	
Silver	PPO	persistent	285.88	313.63
Silver	PPO	withdrawn	357.36	
Silver	PPO	new entrant		340.51
Silver	POS	new entrant		324.19
Silver	HMO	new entrant		309.33
Silver	EPO	new entrant		327.43

Table 15: Mean Premiums for 2014 and 2015 among different metal levels, plan types and persistency

MetalLevel	PlanType	persistence	Adult40_2014	Adult40_2015
Gold	EPO	persistent	368.40	386.67
Gold	EPO	withdrawn	353.62	
Gold	HMO	persistent	357.37	358.75
Gold	HMO	withdrawn	453.02	
Gold	POS	persistent	325.09	362.30
Gold	POS	withdrawn	420.19	
Gold	PPO	persistent	346.56	381.93
Gold	PPO	withdrawn	402.04	
Gold	PPO	new entrant		405.80
Gold	POS	new entrant		379.56
Gold	HMO	new entrant		358.58
Gold	EPO	new entrant		388.32

Table 16: Mean Premiums for 2014 and 2015 among different metal levels, plan types and persistency

MetalLevel	PlanType	persistence	Adult40_2014	Adult40_2015
Platinum	EPO	persistent	393.40	463.98
Platinum	EPO	withdrawn	385.66	
Platinum	HMO	persistent	408.89	468.32
Platinum	HMO	withdrawn	405.83	
Platinum	POS	persistent	397.06	448.91
Platinum	POS	withdrawn	413.74	
Platinum	PPO	persistent	377.74	423.96
Platinum	PPO	withdrawn	366.76	
Platinum	PPO	new entrant		543.49
Platinum	POS	new entrant		525.57
Platinum	HMO	new entrant		428.31
Platinum	EPO	new entrant		468.72

Table 17: Mean Premiums for 2014 and 2015 among different metal levels, plan types and persistency

some possibility of continued “catch up” increases in premiums charged by plans that persist into 2016.

We then look in Table 18 at fractional changes in gross premiums among the persistent plans broken down by both metal level and plan type. Again, both metal level and plan type are factors in premium changes among the persistent plans. Basically, the greater the cost sharing and the more tightly controlled the network, the lower the increase in premiums. The lesser the cost sharing and the less tightly controlled the network, the greater the increase in premiums. This is evidence of some moral hazard and some adverse selection operating in the insurance markets.

MetalLevel	persistence	EPO	HMO	POS	PPO
Bronze	persistent	0.06	-0.02	0.06	0.10
Catastrophic	persistent	0.02	0.02	0.04	0.06
Gold	persistent	0.05	0.00	0.11	0.10
Platinum	persistent	0.18	0.15	0.13	0.12
Silver	persistent	0.05	0.00	0.06	0.10

Table 18: Fractional premium changes for persistent plans among different metal levels and plan types for adult individuals age 40

The distribution of premium changes among persistent plans

Thus far, I have considered various mean figures, averages. But this averaging process potentially masks the variety of price changes experienced by plans that persisted from 2014 to 2015.

Table 19 summarizes these distributions of fractional changes in premiums for each of the persistent plans. It does so by computing statistics such as mean, median and various percentile ranks. The statistics are broken down for each of the persistent plans broken down by metal level, plan types, and combinations thereof.

<http://healthaffairs.org/blog/2011/05/20/implementing-health-reform-the-preview-review-final-rule/>).

feature	mean	median	q10	q90
Bronze	0.07	0.08	-0.08	0.20
Platinum	0.14	0.15	-0.03	0.22
Catastrophic	0.05	0.06	-0.06	0.16
Gold	0.08	0.10	-0.04	0.20
EPO	0.07	0.04	-0.07	0.22
Silver	0.08	0.09	-0.06	0.20
HMO	0.01	0.04	-0.17	0.15

Table 19: Statistics on premium changes for persistent plans by metal level

This data shows that the upper 10% of persistent plans (“q90”) are experiencing high rates of growth in premiums regardless of the metal level and regardless of the plan type. The top 10% of persistent plans in the Bronze, Silver, Gold, Platinum, EPO and PPO categories all saw increases of 20% or more. Of course, the lower 10% of persistent plans (“q10”) are likewise seeing noteworthy premium declines. This latter trend is most pronounced with HMOs, where the lowest 10% of plans saw a 17% decline in gross premiums.

The Second Lowest Silver Plan

An important aspect of the insurance Exchanges created by the Affordable Care Act is the price of the second lowest silver plan in each state rating area. This is so because the premiums for this plan determine the size of the subsidies the federal government pays out and the amount of the subsidies eligible purchasers can receive. If the amount of the second lowest silver plan in a state rating area increases, and the household’s expected contribution based on their income remains the same, the tax expenditure of the federal government will increase. Moreover, the fractional change in the tax expenditure will be greater than the fractional change in the amount of the second lowest silver plan. To see this, consider a state rating area in which the second lowest silver plan monthly premium for a given purchaser type was \$300. And suppose the amount an individual could contribute based on their

income was 24% of this amount²¹ The policyholder is obliged to contribute \$72 per month. If the premium of the second lowest silver plan now goes up, say, 13%, in 2015 to \$339, the difference between the new premium and the purchaser’s expected contribution is now \$267, which is a 17% increase.

And, indeed, a study of the data shows that 13% was the mean increase. Table 20 below shows various statistics on the distribution of changes in premiums for the second lowest silver plan in each state rating area combination.²² The data indicates that the “worst” 10% of silver plans experienced a 29% premium increase, and the “best” 10% experienced just a 1% increase. This variation in the rates of increase reinforces the needs for consumers to shop for plans on the Exchange carefully each year and not blindly renew, notwithstanding any additional continuity of care that may result. It also shows, however, that the ACA often requires a fairly sharp tradeoff between keeping low net premiums and keeping one’s doctor.

	value
percent of state/ratings areas that had a decrease	0.09
mean change	0.13
median change	0.09
10% quantile of change	0.01
90% quantile of change	0.29

Table 20: Statistics on changes in second lowest silver policy premiums

²¹According to research conducted by HHS, the average subsidy was 76% of the premium or \$228 per month. <http://aspe.hhs.gov/HEALTH/REPORTS/2014/PREMIUMS/2014MKTPLACEPREMBRF.PDF>

²²The term mean and median are likely familiar to readers. A value at the nth quantile means that n% of the values are below that value. Thus, saying that the 90% or 0.90 quantile of the GPA at the University of Houston Law Center is 3.5 means that 90% of students have a GPA of 3.5 or less.

Cost Sharing

All plans

People are also interested in cost sharing provisions. This is a bit trickier to do using a quick and dirty look at the data because some of the data is not encoded as a number. Nonetheless we can look at a few of the columns that are encoded numerically: those for the medical deductible and those for the medical out of pocket limit. I first show the data for 2014 and then for 2015.

A quick look at the data shows mean cost sharing increasing somewhat for almost all of the metal levels and plan types. The tables below show some of the key cost sharing figures. Table 21²³ looks at 2014; Table 22 looks at 2015. The tables confirm that for many plans, the level of cost sharing is quite significant in absolute terms.

We can likewise look at fractional changes in the cost sharing parameters broken down by metal level. Table 23 shows little particularly dramatic to report in this regard. Deductibles went up slightly for most metal levels except for Gold plans, which saw a significant decline. Out of pocket limits saw small increases for all metal levels.

²³The columns in these tables are as follows:

Dedind2014 The deductible on individual policies in 2014 for medical expenses

Dedfam2014 The deductible on family policies in 2014 for medical expenses

MaxOOPind2014 The maximum out of pocket limit on individual policies in 2014 for medical expenses

MaxOOPfam2014 The maximum out of pocket limits on individual policies in 2014 for medical expenses

Similar abbreviations are used in the following table for 2015 cost sharing limits. Also, “medical” is a term of art. It omits drug expenses for which separate deductibles and limits may exist.

MetalLevel	Dedind2014	Dedfam2014	MaxOOPind2014	MaxOOPfam2014
Catastrophic	6348.89	12697.69	6349.68	12699.34
Bronze	5079.10	10382.22	6267.23	12569.12
Silver	2905.45	6076.81	5730.60	11491.73
Gold	1275.95	2844.97	4079.09	8644.68
Platinum	346.77	698.32	1855.02	3710.04

Table 21: Mean Cost Sharing for 2014 among different metal levels

MetalLevel	Dedind2015	Dedfam2015	MaxOOPind2015	MaxOOPfam2015
Catastrophic	6584.72	13169.44	6584.72	13168.27
Bronze	5195.34	10569.10	6373.56	12745.72
Silver	2932.36	6012.83	5772.23	11548.74
Gold	1200.49	2623.70	4270.29	8914.73
Platinum	239.79	483.14	1933.63	3867.26

Table 22: Mean Cost Sharing for 2015 among different metal levels

MetalLevel	Dedindchange	Dedfamchange	MaxOOPindchange	MaxOOPfamchange
Catastrophic	0.04	0.04	0.04	0.04
Bronze	0.02	0.02	0.02	0.01
Silver	0.01	-0.01	0.01	0.00
Gold	-0.06	-0.08	0.05	0.03
Platinum	-0.31	-0.31	0.04	0.04

Table 23: Fractional cost sharing changes among different metal levels

Competition

Discussion

Also potentially important to consumers is the degree of choice in the Exchange. A low premium may be fine, but if the plan does not contain the sort of benefits desired by the consumer, the market may not be performing ideally. Moreover, one of the issues under the Affordable Care Act has been the extent of competition in the various health insurance markets and the premiums charged purchasers. The healthcare.gov database constructed here permits this issue to be examined.

Competition in the various counties by metal level and plan type after collapse of categories

Although we could look at competition at a very fine grained level and count, for example, the number of counties in which there were Platinum EPOs, to do so would paint a very unfavorable picture for competition. To simplify and to put the matter in a more favorable light, I collapse categories. HMOs and POS plans, for example, are somewhat rough substitutes; PPOs and EPOs are similar too. So, I collapse those categories. Gold plans and Platinum plans could be treated as separate entities, but I decide to treat both of them as “high-value plans” and Bronze and Catastrophic policies as “low-value plans.”²⁴ I now create a set of tables showing the level of competition with categories collapsed in this fashion.

Table 24 shows the mean number of unique issuers of each type of plan (after collapse) by county. Table 25 shows the median number of unique issuers of each type of plan by county. Tables 26 through 29 as before show the number of counties each year with the specified number of unique issuers.

A pattern that emerges when the data is viewed in this manner is that

²⁴The few “Indemnity” plans that became available for 2015 are treated as higher-choice.

the FFM markets are seeing more issuers but that the markets are still not one could clearly call highly competitive. On the positive side, the mean number of issuers has increased and has done so in every category. Moreover, the median number of issuers in each county has grown from one to two in three categories: low-value/higher-choice plans such as Bronze PPOs, silver/higher-choice plans, and high-value/higher choice plans such as Gold PPOs. And the number of counties in which there are no issuers of various types has declined: in 2014, for example, 27-29% of the counties had no issuers of low-choice plans of various metal levels; the corresponding figure for 2015 is 16%. In 2014, 15% of the counties lacked high choice plans; now 5% have none.

Still, vigorous competition, even when viewed at this favorable level, could be higher. About 41% of the counties still have just one issuer of most of the higher-choice plans. You may be able to pick your doctor, but only from the choices available in the network provided by a single insurer. And, if the purchaser can afford only a low value plan, in only 22-29% or so of the counties will the purchaser find three or more insurers competing for a policy. In sum, 2015 shows an improvement over 2014, and, of course, even in counties with a low number of purchasers, potential competition may keep premiums down, but universal, competition among participating insurers has yet to emerge.

cMetalLevel	cPlanType	2014	2015
low_value	lower_choice	1.22	1.68
low_value	higher_choice	1.51	1.98
silver	lower_choice	1.26	1.81
silver	higher_choice	1.51	2.07
high_value	lower_choice	1.26	1.75
high_value	higher_choice	1.51	2.07

Table 24: Mean unique issuers per county broken down by collapsed metal level and collapsed plan type

cMetalLevel	cPlanType	2014	2015
low_value	lower_choice	1.00	1.00
low_value	higher_choice	1.00	2.00
silver	lower_choice	1.00	1.00
silver	higher_choice	1.00	2.00
high_value	lower_choice	1.00	1.00
high_value	higher_choice	1.00	2.00

Table 25: Median unique issuers per county broken down by collapsed metal level and collapsed plan type

cMetalLevel	cPlanType	2014	2015
low_value	lower_choice	0.29	0.16
low_value	higher_choice	0.15	0.05
silver	lower_choice	0.27	0.16
silver	higher_choice	0.15	0.05
high_value	lower_choice	0.27	0.16
high_value	higher_choice	0.15	0.05

Table 26: Percent of counties with zero issuers broken down by collapsed metal level and collapsed plan type

cMetalLevel	cPlanType	2014	2015
low_value	lower_choice	0.37	0.35
low_value	higher_choice	0.39	0.41
silver	lower_choice	0.37	0.34
silver	higher_choice	0.39	0.41
high_value	lower_choice	0.37	0.34
high_value	higher_choice	0.39	0.41

Table 27: Percent of counties with one issuer broken down by collapsed metal level and collapsed plan type

cMetalLevel	cPlanType	2014	2015
low_value	lower_choice	0.22	0.27
low_value	higher_choice	0.30	0.26
silver	lower_choice	0.22	0.21
silver	higher_choice	0.29	0.22
high_value	lower_choice	0.22	0.23
high_value	higher_choice	0.29	0.22

Table 28: Percent of counties with two issuers broken down by collapsed metal level and collapsed plan type

cMetalLevel	cPlanType	2014	2015
low_value	lower_choice	0.13	0.22
low_value	higher_choice	0.16	0.29
silver	lower_choice	0.14	0.29
silver	higher_choice	0.16	0.32
high_value	lower_choice	0.14	0.27
high_value	higher_choice	0.16	0.32

Table 29: Percent of counties with three or more issuers broken down by collapsed metal level and collapsed plan type

Conclusion

The Obama administration has not been forthcoming with a great deal of data about the operation of the Exchanges. We still do not know, for example, how many individuals enrolled each month or even each year in the various plans sold on the Exchanges.²⁵ Estimates of aggregate numbers of purchasers have been beset by double counting.²⁶ The databases released by HHS, assuming they are accurate, do contain valuable information on the state of the insurance market created by the Affordable Care Act. That data suggests that the market is performing better than the most pessimistic had feared but still hardly as well as proponents of the plan had touted. Although there have been some premium decreases, particularly with the less generous Bronze plans and by HMOs that offer patients less choice, there have been increases that belie the more exaggerated claims made by proponents of the ACA before it was enacted. The sharp increases in Platinum Plans are disturbing, not because there are so many individuals in those plans, but because it foreshadows an adverse selection dynamic in which, as those more lavish plans shrink away, the high risk purchasers migrate to plans of lesser generosity with the troublesome pricing dynamic following.

Of course, all of such prognostications depend on the legislative, administrative and judicial stability provided the ACA markets. If, for example, the Supreme Court were to rule that subsidies were illegal in the many jurisdictions serviced by the federal exchange²⁷ and states did not establish their own exchanges in response, the trends discussed in this document here would likely change drastically.

²⁵See *Cat got your tongue, HealthCare.gov? Obamacare's secrets* at <http://www.cnbc.com/id/102208522> (comparing failure of federal exchange to release numbers with information provided by several state exchanges.)

²⁶See. See also <http://acassignups.net/14/11/23/my-own-estimates-have-now-been-proven-more-accurate-hhs-depttwice> (ACA supporter reviews evidence as to whether double counting was more likely deliberate lie or more likely a serious mistake.)

²⁷Order list, Nov. 7, 2014, *King v. Burwell*, U.S. Supreme Court, case no. 14-114 (certiorari granted).