CONNECT FOR HEALTH COLORADO

MARKETPLACE DATA ANALYSIS

PERFORMED BY SPARK POLICY INSTITUTE

MARKETPLACE EVALUATION

The Spark Evaluation team utilized a subset of marketplace data pulled from the larger collection of data gathered during the website enrollment process. For all individuals signing up for private health coverage through the Connect for Health Colorado (C4HCO) website, data was collected by C4HCO at each step of the process. For example, each activity on the website was tracked, time stamped, and provided a unique identifier for tracking purposes. Additional data was collected to complete a user profile, including personal information such as social security numbers, date of birth, gender, membership in a federally recognized tribe, and household size. Some demographic variables such as race and ethnicity were optional to complete at the time of enrollment. Others, such as income as a percent of the federal poverty level, were used to determine eligibility for subsidies and cost sharing alternatives and are reported in our dataset. Data was also collected on the selection of health coverage plans, whether medical or dental, as well as the costs of premiums, amount of subsides received, and employer contributions made for SHOP customers.

In the tables below, we offer a brief introduction to the dataset used for this analysis of the marketplace. Data was downloaded via the encrypted file sharing server in April 2014, more than a month prior to the closure of the first open enrollment period, following the extension until May 31st for outstanding cases. While there were additional enrollments after the data was analyzed, the initial sample downloaded totaled 130,807 cases. In order to focus our analysis on individual medical health coverage, we parsed out those cases that were dental only (the vast majority of dental enrollees were also medical) and those that were SHOP. A more complete list of SHOP enrollees were included in a separate dataset and were, therefore, removed from this portion of the analysis.

Table 1: Breakdown of Enrollees in Database

All Individuals	Individual Dental	Individual Medical	SHOP	Total used for Analysis
128,446	28,634	102,173	2,361	99,783

Of the 99,783 enrollees included in the analysis:

- 52,200 (52%) were female, 47,583 (48%) were male,
- The average household size was 2 members,
- 6,063 reported they are smokers,

- 383 were members of a federally recognized Tribe, and
- 29,960 reported being uninsured in the past six months.

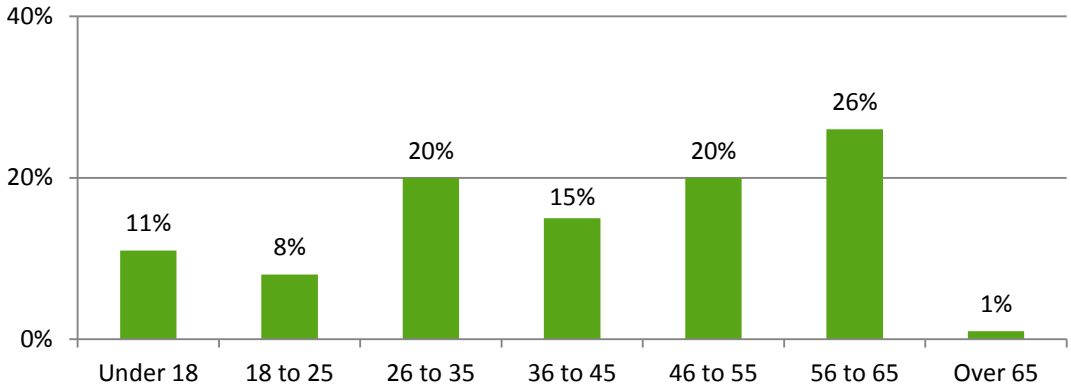
Demographically, the dataset of individual enrollees included a variety of racial and ethnic groups. Reporting race or ethnicity was optional during enrollment and 27% of enrollees chose not to report their racial or ethnic background. As compared to the Census.gov QuickFacts estimates, the racial and ethnic demographics of enrollees are representative of the general population in some categories but not in others. For example, the percentage of enrollees that are White or Asian reflects the percentages in Colorado overall. Hispanics and African Americans are significantly underrepresented in the enrollee population relative to their overall populations across the state.

Table 2: Racial/Ethnic background of Enrollees who reported Race/Ethnicity

	Frequency	Percent	Census Population Estimates[i]
African American	1,787	2%	13%
Asian	4,654	6%	5%
Hispanic	4,315	6%	17%
White	58,834	80%	63%
Mixed Ethnic/Racial Background	2,260	3%	2%
All Others	1,349	2%	1%
Total	73,199	100%	100%

Enrollees were also representative of a broad range of ages, with the highest number of enrollees in the 56 to 65 years old range. With the exception of those over 65 years old who already qualify for Medicare, the smallest numbers of enrollees fell between 18 and 25 years old. Dubbed the 'young invincibles, 'anecdotally health coverage guides suggested that these were the hardest target group to reach. However, many within this age category are still eligible to be enrolled on their parents' health plans. This population, therefore, represents both a challenge for the 2014-2015 open enrollment period in terms of finally reaching those young people that do not feel they need coverage and this group also includes a population of soon-to-be-consumers coming into the marketplace in the near future.

Figure 1: Enrollees by Age Category



Finally, our initial analysis of the data indicates that the largest percentage (46%) of enrollees signed up for silver health plans. Bronze plans were the second most popular, with 41% of enrollees. Catastrophic coverage accounted for 3% of plans, gold plans were chosen by 9% of enrollees, and platinum by just 1%.

Table 3: Enrollees by Metal Plan

Level of Coverage	Frequency	Percent
Catastrophic	3,007	3%
Bronze	40,738	41%
Silver	45,823	46%
Gold	9,419	9%
Platinum	659	1%
Total	99,646	100%

MULTIVARIATE ANALYSIS

The purpose of the multivariate analysis is two-fold. First, the data analysis will reveal trends and differences among enrollees who participated in the first round of open enrollment. For example, the results outline which demographic groups enrolled with the assistance of a health coverage guide, what plans they chose and what their premiums were relative to groups that had different or no experience with assistance. Second, the analysis provides indicators of what factors contribute most to plan selection, and more specifically, selecting a silver plan with cost sharing reductions. Variables of interest to be utilized in the multivariate analysis, therefore, include the cost sharing reduction levels and federal poverty levels and total subsidies.

For individuals who enrolled in a silver plan, these cost sharing reductions offered lower out-of-pocket payments for deductibles, coinsurance and copayments depending on your income level and household size. Not all those individuals that were eligible for cost-sharing reductions enrolled in silver plans, therefore not availing of the benefits. Thirty-four percent of the total C4HCO enrollees

were eligible for the standard plan, with no cost sharing reduction; only one third of those individuals ultimately signed up for a silver plan. Nearly 20% of eligible individuals were in the 73% actuarial value category, meaning that their family income and household size put them between 201-250% of the federal poverty level. About half of those individuals choose silver plans. Of the 28% that were eligible for the 87% level for cost sharing reductions – those between 151-200% of the federal poverty level – nearly two-thirds enrolled in silver plans. Finally, while just 18% qualify for the maximum cost sharing reduction, earning just 150% of the FPL, more than 80% of those individuals enrolled in silver plans. Overall, a greater percentage of those in lower income categories were enrolling in silver plans at rates disproportionate to their relative population size within the pool of all enrollees[ii].

Table 4: Enrollees in Silver plans by CSR Level

CSR Level	Frequency of Eligible Enrollees	Percent of CSR Eligible Enrollees	Percent of Eligible that Enrolled in Silver Plan
CSR_94_Level	11,346	17%	80%
CSR_87_Level	17,996	28%	70%
CSR_73_Level	12,762	20%	50%
Standard CSR Level	21,742	34%	35%
Total CSR Eligible	63,846	100%	56%
Not Eligible for CSR	35,937	36% of All Enrollees	22%[iii]

Similar results hold for the percentage of enrollees in silver plans relative to their income status as a percentage of the federal poverty level. While this follows logically given that CSR levels are determined in part by income level, we observe some slight variations in the categories that individuals found themselves in. Overall, the lower the percent of the federal poverty level one's income represents, the more likely they are to have enrolled in a silver plan[iv].

Table 5: Enrollees in Silver plans by Federal Poverty Level

Federal Poverty Level	Frequency	Percent of FPL Enrollees	Percent Enrolled in Silver Plan
0-150% of FPL	12,008	18.89	77%
151-200% of FPL	18,178	28.59	70%
201-250% of FPL	12,821	20.17	50%
More than 250% of FPL	20,566	32.35	35%
Total	63,573	100	56%
% FPL Not Calculated	36,210	36% of All Enrollees	22%[v]

Finally, our initial analysis reveals differences in average premium amounts for those within each level of the CSR categories and the FPL categories. Overall, those in the lowest income categories, therefore eligible for the highest CSR level, have the lowest average annual premium after subsidies. In general, the subsidy amounts available to individual enrollees follow the same logic in terms of

providing relief to the lower income earners. Higher incomes brackets are generally eligible for lower amounts of individual subsidies for their health coverage plans[vi]. The result overall is that premium levels across all groups tend to fall within a relatively narrow range.

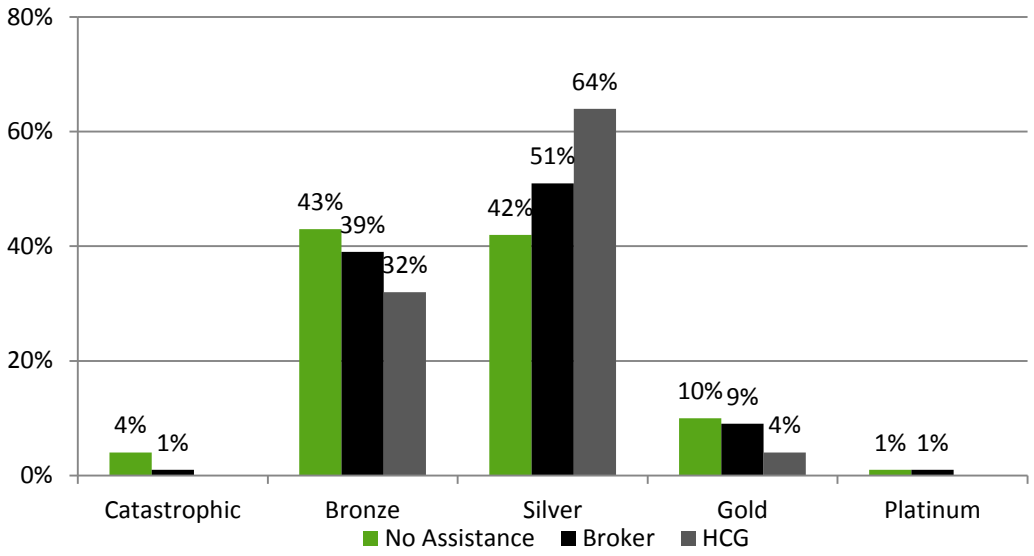
Table 6: Average premium amounts by CSR Level and Federal Poverty Level

CSR Level	Average Premium	Federal Poverty Level	Average Premium
CSR_94_Level	$6168	0-150% of FPL	$6075
CSR_87_Level	$6622	151-200% of FPL	$6611
CSR_73_Level	$6707	201-250% of FPL	$6680
Standard CSR Level	$6959	More than 250% of FPL	$7111
All Enrollees	$6093	All Enrollees	$6093

Having specified these variables relative to plan type and premium amounts, the multivariate analysis considers the effect of assistance on an individual's enrollment choices. From the enrollee dataset, a sample emerges of 4,712 (~5% of all enrollees) people that specifically worked with a health coverage guide during enrollment and another sample of 30,822 (~31%) people that worked with a broker. Technical difficulties with the website meant that many health coverage guides were unable to enter their identification numbers during the enrollment process. Therefore, we know that the 4,712 people assisted by HCGs are likely a vast undercount of the total enrollee population that received assistance. The remaining population of 64,249 (64%) reported having no assistance during enrollment. However, it is also important to note that there were no variables included in the dataset to indicate an individual having received support from a Connect for Health representative on the phone or online during the enrollment process.

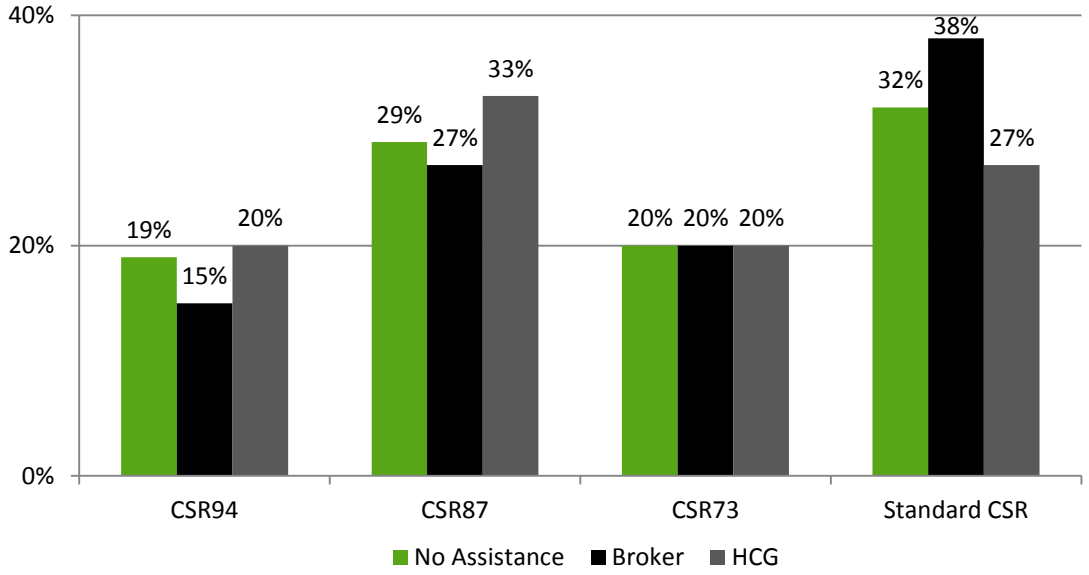
Controlling for the vast differences in the group sizes, the analysis used Chi-Square tests and logit regression models to evaluate the different outcomes of individuals that worked with a health coverage guide, a broker, or who had no recorded assistance. Findings indicate that statistically significant differences exist between each group in terms of the plan choices and the demographic characteristics of who received which type of assistance. Charts and tables below outline the findings in more detail.

Figure 2: Metal Plan by Assistance Type



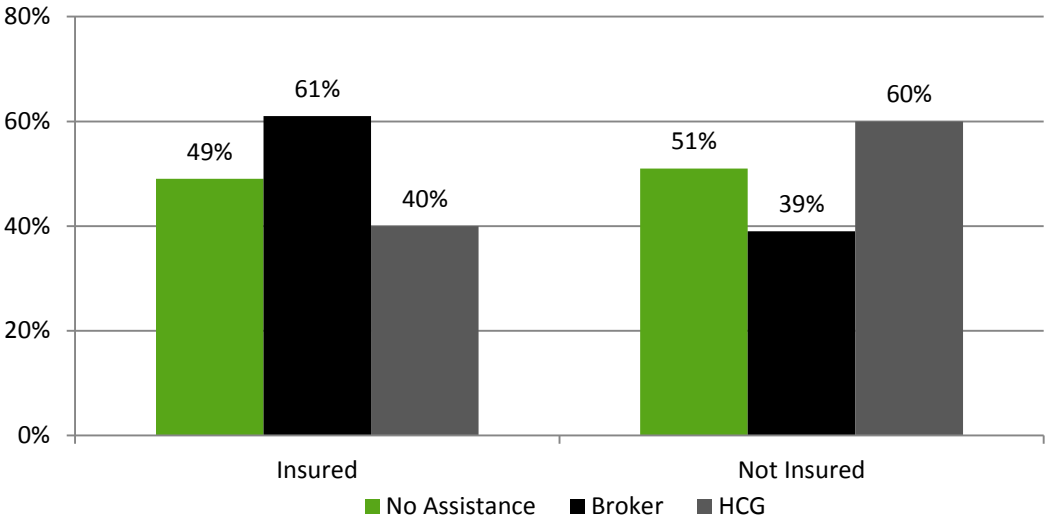
There were significant differences in metal plan chosen based on type of assistance received[vii]. The strongest statistical relationship exists for individuals enrolling in silver plans. When comparing *within* the sample of only those that enrolled in a silver plan, individuals that worked with a health coverage guide were nearly twice as likely to enroll in a silver plan as compared to those that worked with a broker or received no assistance[viii]. Also, individuals that had no assistance were also statistically significantly more likely to enroll in Catastrophic or Bronze plans as compared to those that had assistance (either broker or health coverage guide). These results align with anecdotal reports from health coverage guides that they encouraged their clients to choose silver plans in order to take advantage of the additional cost sharing reduction.

Figure 3: CSR Level by Assistance Type



In support of the interpretation above, there were also significant differences in level of cost-sharing reduction based on assistance type[ix]. Individuals who were helped by a health coverage guide received a greater proportion of plans with CSR's of 87 and 94, particularly as compared to brokers. Though an indirect measure, this result may suggest that health coverage guides were helping a greater proportion of individuals who close to the federal poverty line, but did not qualify for Medicaid.

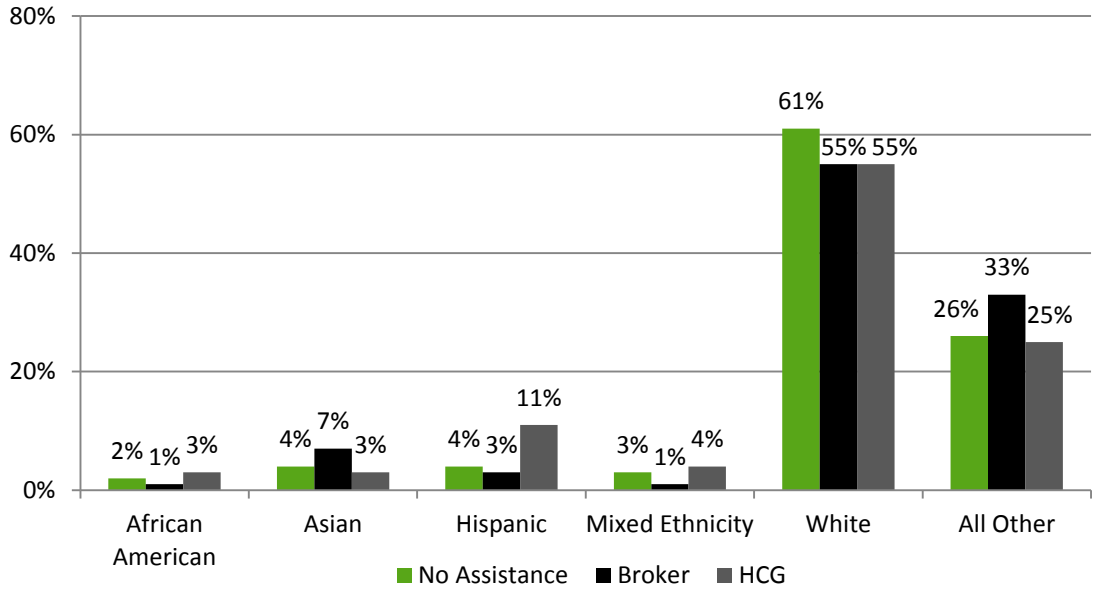
Figure 4: Insurance in the Past Six Months by Assistance Type



Health coverage guides also helped a greater proportion of individuals who had not had insurance within the past six months.[x] These results suggest that the previously uninsured may be a population in particular need of help in navigating the health care system, possibly due to lack of experience and

knowledge. Conversely, brokers assisted a greater proportion of individuals who had previously been insured, suggesting that individuals who were already insured may have elected to continue with their same brokers.

Figure 5: Ethnic background by Assistance Type



There were significant differences in the ethnic backgrounds of individuals based on assistance type.[xi] While there was a greater proportion of White individuals who enrolled in health plans overall, regardless of assistance type, it is important to note that within the Hispanic community, a population focus for many assistance sites, health coverage guides assisted statistically significantly more people than brokers and those without assistance.

Additional analysis was conducted using logistic regression. Logit is appropriate when testing the different effects of variables such as federal poverty level, CSR level, age, race/ethnicity, premium amount, and assistance type on the choice of a specific level of health coverage plan. Controlling for all other plan types, the models below test the effects of the variables listed above on the decision to enroll in a Silver plan. Given results from the above analysis, it appears clear that some unique aspects of the Silver plan make it a more popular choice among particular groups across the State.

Table 7a: Logit model for Silver Plan Enrollees

Silver Plan Enrollee	Coefficient	Std. Error	z	P>z
Uninsured last 6 Months	-0.3515	0.01822	-19.29	0
CSR Level	-0.7672	0.00862	-88.97	0
Individual Premium Amount	0.0001	3.05E-06	30.13	0
Worked with HCG	0.4435	0.03601	12.32	0
Worked with Broker	0.2791	0.01895	14.73	0
Hispanic Population	-0.0327	0.04154	-0.79	0.431
Age Levels	-0.1366	0.00806	-16.96	0

Silver Plan Enrollee	Coefficient	Std. Error	z	P>z
Constant	2.3868	0.03689	64.71	0
Number of Observations	62960			
LR Chi^2 (Prob > Chi^2)	10266.19 (0.000)			
Pseudo R^2	0.1190			

The table above outlines the results from the logit model for Silver plans. Controlling for all other factors, individuals that worked with a health coverage guide or broker were significantly more likely to select a Silver health plan. The results also indicate that those with a CSR level of 87 or 94 were statistically significantly more likely to choose a Silver plan. Having been uninsured in the past six months was significantly related to enrolling in a Silver plan as well, but the relationship is negative meaning that recent coverage makes you less likely to enroll.

Using logit models for Gold and Bronze plan enrollees, the evidence shows that those individuals who chose to enroll in a Silver plan were characterized by particular factors. For example, as compared to Silver plans, Gold and Bronze plan selectors were more likely to eligible for fewer cost sharing reductions, and were significantly less likely to have worked with a health coverage guides or brokers. Bronze plan enrollees were more likely to have been uninsured in the past six months, a figure also true of those enrolling in Catastrophic plans. Additionally, those that enrolled in Bronze plans were typically much older relative to Gold and Catastrophic plan selectors. Of those that enrolled in a Bronze plan, 47% were over forty-six years old, a figure comparable to Silver plan enrollees. Over 90% of catastrophic plan holders, not surprisingly, were between eighteen and thirty-five years old.

Table 7b: Logit model for Gold Plan Enrollees

Gold Plan	Coefficient	Std. Error	z	P>z
Uninsured last 6 Months	-0.5576	0.0366	-15.24	0
CSR Level	0.3956	0.0167	23.70	0
Individual Premium Amount	0.0001	4.68E-06	22.79	0
Worked with HCG	-0.6743	0.0864	-7.8	0
Worked with Broker	-0.2856	0.0360	-7.94	0
Hispanic Population	-0.05462	0.0903	-0.6	0.546
Age Levels	-0.2483	0.0121	-20.56	0
Constant	-3.2051	0.0704	-45.52	0
N	62690			
LR Chi^2 (Prob > Chi^2)	1765.24 (0.000)			
Pseudo R^2	0.0597			

Table 7c: Logit model for Bronze Plan Enrollees

Bronze Plan	Coefficient	Std. Err.	z	P>z
Uninsured last 6 Months	0.4903	0.0186	26.30	0
CSR Level	0.67224	0.0088	76.28	0
Individual Premium Amount	-0.0001	3.40E-06	-43.21	0
Worked with HCG	-0.2259	0.0367	-6.15	0
Worked with Broker	-0.1507	0.0194	-7.77	0
Hispanic Population	0.0221	0.0424	0.52	0.602
Age Levels	0.2970	0.0089	33.25	0
Constant	-2.9467	0.0395	-74.6	0
N	62690			
LR Chi^2 (Prob > Chi^2)	8937.54 (0.000)			
Pseudo R^2	0.1086			

Table 7d: Logit model for Catastrophic Plan Enrollees

Catastrophic Plan	Coefficient	Std. Err.	z	P>z
Uninsured last 6 Months	0.7566	0.0933	8.11	0
CSR Level	1.1008	0.0606	18.16	0
Individual Premium Amount	-0.0002	2.11E-05	-9.37	0
Worked with HCG	-1.6593	0.3839	-4.32	0
Worked with Broker	-1.0822	0.1191	-9.09	0
Hispanic Population	0.1846	0.1982	0.93	0.352
Age Levels	-0.3595	0.0397	-9.05	0
Constant	-6.3078	0.2481	-25.42	0
N	62690			
LR Chi^2 (Prob > Chi^2)	1342.97 (0.000)			
Pseudo R^2	0.2178			

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i Source: Source U.S. Census Bureau: State and County QuickFacts. http://quickfacts.census.gov/qfd/states/08000.html

ii Chi-square analysis was used to test the between group differences for categorical variables: CSR levels and Federal poverty levels. For the CSR levels, results indicate that there were statistically significant differences in the proportion of individuals in the highest CSR level (94% AV) enrolling in a silver plan. $\chi 2$ (3) = 81000, p<.000, Cramer's V= 0.3573). Cramer's V indicates the effect size and is interpreted like a Pearson's R correlation coefficient.

iii Chi-square tests of significance indicate that the relationship between non-eligible for CSR enrollees and the likelihood that they signed up for a silver plan to be statistically significantly negative $\chi 2$ (1) = 73000, p<.000, Cramer's V= -0.2711), meaning that individuals who were not eligible for cost sharing reductions were significantly less likely to enroll in silver plans.

iv Chi-square analysis confirms the relationship between federal poverty levels and enrollment in silver plans. For FPL levels, results indicate that there were statistically significant differences in the

proportion of individuals in the lowest FPL enrolling in a silver plan. $\chi 2$ (3) = 73000, p<.000, Cramer's V= 0.3386).

[v] Similar to the effect for CSR level, individuals who did not have a calculated percentage of the federal poverty line recorded in their account where statistically significantly less likely to enroll in a silver plan: $\chi 2$ (1) = 73000, p<.000, Cramer's V= -0.2713).

vi While subsidy amounts for individuals follow the general pattern of higher subsidies for lower income earners, there is some slight variation at the highest income levels. While individual subsidies continue to shrink as an individual earns more, the total household subsidy is actually somewhat higher for those within the 73% CSR level and those with 201-250% of the federal poverty level as compared to the standard level and those earning more than 250% of FPL.

vii To investigate differences in metal plans based on assistance group, a chi-square analysis was used. Results indicated that there were differences in proportion of metal plan chosen depending on whether enrollees received help from a health coverage guide, broker, or received no assistance, $\chi 2$ (8) = 17003, p<.000, Cramer's V= 0.093). Individuals that had no assistance were also statistically significantly more likely to enroll in Catastrophic or Bronze plans as compared to those that had assistance (either broker or health coverage guide): ($\chi 2$ (4)= 14000, p<.000 Cramer's V= 0.1195).

viii The strongest statistical relationship exists for individuals enrolling in silver plans. Those that worked with a health coverage guide were nearly twice as likely to enroll in a silver plan as compared to those that worked with a broker or received no assistance: $\chi 2$ (2) = 12000, p<.000, Cramer's V= 0.1114.

ix To investigate differences in cost-sharing reduction levels based on assistance group, a chi-square analysis was used. Results indicated that there were differences in proportion of CSR level depending on whether enrollees received assistance from a health coverage guide, broker, or received no assistance ($\chi 2$ (6)= 405.72, p<.000, Cramer's V= 0.056).

x To investigate what type of assistance people who had not previously had insurance in the past six months were more likely utilize a chi-square analysis was used. Results indicated that there were differences in proportion of people who had not previously had insurance depending on whether enrollees received assistance from a health coverage guide, broker, or received no assistance ($\chi 2$ (2)=1030.9, p<.000, Cramer's V= 0.13).

xi To investigate what type of assistance groups of individuals from different ethnic backgrounds were more likely to utilize a chi-square analysis was used. Results indicated that there were differences in proportion of enrollees from different ethnic backgrounds depending on whether they received assistance from a health coverage guide, broker, or received no assistance, $\chi 2$ (10) = 20003, p<.000, Cramer's V= 0.1001). Logistic regression confirmed that a greater proportion of silver plans were selected after receiving assistance from a health coverage guide.