Plan Selection in the Non-Group Market in the First Year of the Health Insurance Marketplace

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Background—The Non-Group Market Under the Affordable Care Act

To standardize plans and help individuals more easily understand plan value, QHPs were assigned a metal level (platinum, gold, silver, or bronze) according to the plan’s actuarial value [1]. The actuarial value represents the amount of expected health care costs the insurer will pay; for example, in a plan with 90% actuarial value the beneficiary would, on average, pay 10% of health care costs. Table 1 presents a graphical summary of the metal levels.

Modified Community Rating

Medical underwriting, a common practice used by insurers to set premiums based on an individual’s age, sex, past utilization, and expected health status, tend to generate higher premiums for individuals who are female, older, or less healthy because these individuals are expected to incur higher costs [2]. QHP premiums are generated through modified community rating, meaning they are a function only of actuarial value, region, age (with limits), number of dependents on the policy, and smoking status [3].

Federal Assistance Programs

There were 2 main types of financial assistance to increase affordability of QHPs: the advance premium tax credit (APTC) for individuals with income between 100%
and 400% of the federal poverty level (FPL) and cost sharing reductions (CSR) for individuals with income between 100% and 250% FPL who enrolled in a silver plan. The APTCs reduce the monthly premium while the CSRs increase the actuarial value of silver plans.

**Regulations on QHP Generosity and Plan Benefits**

In 2014, all QHPs were required to have an out-of-pocket (OOP) maximum—an upper limit on expenditures paid by the member within a year—after which the plan pays 100% of the cost of additional services [1]. The ACA prohibited QHPs from denying coverage to individuals because of pre-existing conditions and required issuers to cover a set of essential health benefits, including a maternity rider, which was added on all QHPs at no extra cost regardless of a member’s sex [4].

**Grandfathered/Transitional Plans**

The ACA allowed individuals enrolled in a non-group plan as of March 10, 2010 (when the law passed) to remain in that plan (grandfathered plans) rather than switching to a QHP. Additional legislation allowed individuals enrolled in a non-group plan as of October 1, 2013 to remain on that plan (transitional plans) [5]. Individuals in grandfathered or transitional plans could stay in their 2013 plan or switch to a QHP; however, non-QHP plans were not available for purchase beginning in 2014 (with the exception of supplemental insurance plans). Grandfathered/transitional plans were not subject to the same regulations required of QHPs.

**Data and Methods**

**Data and Sample**

The data came from a large insurer, which allowed for direct observation of the true cost of premiums and federal assistance. In 2014, this insurer was 1 of only 2 companies offering QHPs in the Federally Facilitated Marketplace and the only insurer offering QHPs in every county in North Carolina; in 2013, it had 86% of the non-group market [6]. The analytical sample included individuals who met the following criteria: they were enrolled in the non-group market with the insurer for at least 6 months of 2013 (to ensure information was known about each individual’s health status and 2013 plan benefits); they were aged 19-64 years as of January 1, 2014 (working-age adults who do not transition to Medicare); and they were enrolled as individuals in a non-group health plan with this insurer as of May 1, 2014 (the policy start date for individuals who enrolled on the final day of open enrollment in 2014). We excluded individuals in plans exclusively serving American Indians, catastrophic plans (criteria for enrollment were subject to additional qualifications), and family plans or plans in which an individual was enrolled with a dependent or spouse (decisions made for a family unit may have differed from decisions made for an individual). When modeling plan selection among those who switched to a QHP, we excluded individuals with CSRs. Qualified individuals were required to enroll in a silver plan in order to receive CSRs, which meant the decision making process for metal level selection was different for these individuals. Claims and plan enrollment data were used for information about individuals and their 2013 and 2014 plan benefits.

**Outcome Variable**

The outcome variable of interest was metal level, representing the actuarial value of the selected plan: platinum (90% actuarial value), gold (80% actuarial value), silver (70% actuarial value), and bronze (60% actuarial value).

**Key Independent Variables**

**Health Risk.** Risk scores have been used to represent health status [7, 8]. We used an episode-based health risk score generated by an Ingenix Symmetry algorithm accounting for age, sex, and health care claims from the previous 12 months [9]. Our model utilized the prospective risk score, which combines demographics and claims data from the past 12 months to calculate a risk score that predicts an individual’s risk of being high cost in the subsequent year [9]. The risk score was standardized to mean = 1.0 (indicating average health risk with >1.0 at higher risk of being high cost compared to the rest of the sample) and standard deviation = 1.0.

**Characteristics of Individuals and Policies.** Age, sex, and details of plan benefits came from claims and plan enrollment data. Age on May 1, 2014 was categorized into 3 age groups (19-35, 36-50, 51-64). We also included a binary variable for receipt of APTC in 2014 as well as a continuous variable for the amount of the APTC (0 if no tax credit was received).

### Table 1. Metal Level Summary

| Metal level                  | Platinum | Gold  | Silver | Bronze | Grandfathered/Transitional |
|------------------------------|----------|-------|--------|--------|-----------------------------|
| Actuarial value              | 90%      | 80%   | 70%    | 60%    | Varies                      |
| Average % beneficiary is responsible | 10%      | 20%   | 30%    | 40%    | Varies                      |
| Premiums costs               | $$$$     | $$$   | $      | $      | Varies                      |
| Cost sharing subsidies available? | No      | No    | Yes    | No     | No                          |
| Modified community rated premium | Yes     | Yes   | Yes    | Yes    | No                          |
| Advance premium tax credit available? | Yes     | Yes   | Yes    | Yes    | No                          |
| Coverage minimums/essential health benefits | Yes | Yes | Yes | Yes | No |
| Out-of-pocket (OOP) maximum | Yes      | Yes   | Yes    | Yes    | Varies                      |
Analysis
The sample was comprised of 2 types of individuals: those who chose to remain in a grandfathered/transitional plan in 2014 and those who chose to switch to a QHP. We included only this second set of individuals (those who enrolled in a QHP) in our multinomial logit model, which we used to estimate the effects of characteristics on selection of a metal level. The multinomial model for this analysis included only high-risk and low-risk individuals (see Figure 1): high-risk individuals were expected to have costs in the top 25th percentile of the sample while low-risk individuals were expected to have costs in the bottom 25th percentile. A graphic depiction of our sample inclusion criteria can be found in Figure 1. We presented odds ratios (OR) and 95% confidence intervals (CI). All analyses were conducted in SAS 6.1 [10].

Results
Switching
Of the 96,106 individuals who met eligibility criteria, 81,187 (84%) remained in the same plan in which they were enrolled in 2013 (grandfathered or transitional) (see Figure 1). Table 2 presents unadjusted, descriptive statistics stratified by QHP enrollment. Individuals who switched to a QHP were more likely to have been female (64% v. 42%, \( P < 0.0001 \)), older (average age 47.3 v. 44.6, \( P < 0.0001 \)), and at greater risk of having higher health care costs in 2014 (mean risk score 1.168 v. 0.969, \( P < 0.0001 \)).

Less Costly—Modified Community Ratings and Premium Costs. Without tax credits, QHP premiums were, on average, more expensive than 2014 premiums for grandfathered/transitional plans. Without APTCs, the average monthly QHP premium in this sample was $472.36. However, with APTCs, the average QHP premium was $205.23, lower than the average 2014 grandfathered/transitional plan premium ($328.13) (see Table 2).

More Generous—QHP Regulations and Plan Generosity. The same subgroups most likely to benefit from modified community rating, individuals for whom underwritten premiums would be higher—women, older individuals, and individuals with higher predicted costs—would also have been most likely to benefit from ACA regulations on QHP benefits. A higher percentage of individuals in less generous 2013 plans switched to QHPS in 2014. Individuals who switched to QHPS had higher 2013 OOP maximums (50% of those in QHPS had OOP maximums >$6,000 in 2013 v. 39% of individuals in grandfathered/transitional plans in 2014, \( P < 0.0001 \)) and higher deductibles (82.5% of those in QHPS had 2013 deductibles between $1,000 and $6,000 and 4.5% had 2013 deductibles >$6,000 v. 79% and 2.7% for those in 2014 grandfathered/transitional plans, \( P < 0.0001 \)) (see Table 2).

Decision-Making among Beneficiaries who Switched Plans: Choice of Metal Level
Summary Statistics. Table 3 presents unadjusted percentages of high- and low-risk individuals by metal type and descriptive characteristics. Plan selection was modeled separately for 1,692 high-risk (cut-off risk score = 1.287) and 1,691 low-risk individuals (cut-off risk score = 0.392) (see Figure 1). Compared to their low-risk counterparts, high-risk individuals were older (51.0 v. 40.4, \( P < 0.0001 \)), more...
likely to be female (69% v. 61%, P<0.0001), and had higher average APTCs ($153.75 v. $124.97, P<0.0001). High-risk individuals were less likely than low-risk individuals to select bronze plans (15.2% v. 35.7%, P<0.0001) and more likely to select platinum (22.1% v. 10.4%, P<0.0001) and gold plans (28.5% v. 20.8%, P<0.0001) (Table 3).

Effect of APTC on Metal Level. Odds ratios (OR) from the multinomial logit model are displayed in Table 4. Both high- and low-risk individuals with APTCs had lower odds of selecting a platinum or gold plan over a silver plan compared to individuals without APTCs (high-risk, platinum: OR = 0.25, CI: 0.19-0.33; high-risk, gold: OR = 0.45, CI: 0.35-0.57; low-risk, platinum: OR = 0.44, CI: 0.30-0.63; low-risk, gold: OR = 0.98, CI: 0.77-1.26). Compared to high-risk individuals without APTCs, high-risk individuals with APTCs had lower odds of selecting a bronze plan over a silver plan (OR = 0.40, CI: 0.30-0.55). The opposite was true for low-risk individuals: compared to those without APTCs, low-risk individuals with APTCs had higher odds of selecting a bronze plan over a silver plan (OR = 1.35, CI: 1.09-1.66) (Table 4).

Discussion

The Health Insurance Marketplace reduced barriers to enrollment in non-group health plans; nationally in 2013 there were 8.5 million individuals in the non-group market and by 2015 that number had grown to 17.9 million [11]. Using claims from an insurer with high market share in the non-group market, we provide evidence to support our hypothesis that receipt of APTCs was associated with selecting more generous plans for high-risk individuals and less generous plans for low-risk individuals. Contrary to prior studies that found older individuals to be less price sensitive,

### Table 2. Unadjusted Summary Statistics by 2014 Plan Type

| Sample size     | 14,919 | 81,187 |
|-----------------|--------|--------|
| Average 2014 premium (without the application of APTC) | $472.36*** | $328.13 |
| Average 2014 premium (with the application of APTC) | $205.23*** | $328.13 |
| Average actuarial value of 2014 plan | 0.875*** | 0.603 |
| Established with a primary care provider in 2013 | 76%*** | 66% |
| Health risk score (standardized) | 1.168*** | 0.969 |
| Average age | 47.3*** | 44.6 |
| Percent female | 64%*** | 42% |
| Competition from other insurers in the region | 29%*** | 32% |
| Median household income (census) | $533.39*** | $554.95 |
| Deductible between $1,000 and $6,000 (2013) | 82.5%** | 79% |
| Deductible over $6,000 (2013) | 4.5%** | 2.7% |
| Out-of-pocket maximum above $6,000 (2013) | 49.5%** | 39% |

QHP = qualified health plan
APTC = advance premium tax credit
* = P<0.05
** = P<0.01
*** = P<0.0001

### Table 3. Summary Statistics by Health Risk and Metal Level

| Metal level | High-risk | Low-risk |
|-------------|-----------|----------|
| Platinum    | 22.1%     | 10.4%    |
| Gold        | 28.5%     | 20.8%    |
| Silver      | 34.2%     | 33.1%    |
| Bronze      | 15.2%     | 35.7%    |
| Total       | 1,692     | 1,691    |

| Metal level | High-risk | Low-risk |
|-------------|-----------|----------|
| Platinum    | 22.8%     | 15.0%    |
| Gold        | 29.0%     | 25.6%    |
| Silver      | 34.4%     | 33.4%    |
| Bronze      | 14.6%     | 26.1%    |
| Total       | 769       | 763      |

APTC = advance premium tax credit
our results found that older individuals were more likely to select less costly plans. This finding may suggest that there are unintended consequences to age-based pricing.

**Effect of APTCs on Metal Level**

Low-risk individuals with APTCs had higher odds of selecting a bronze plan than a silver plan compared to low-risk individuals who did not receive APTCs. As hypothesized, healthier individuals who expected to use fewer health care services selected plans with lower actuarial value and lower premiums. This finding suggests that low-risk individuals were more likely to switch health plans because QHPs were less costly. Rather than applying their tax credit towards the purchase of a more generous health plan, they used the APTC to save money on health insurance, which they could then spend on other goods and services. Individuals who qualify for an APTC would be lower income and therefore may be more concerned about the premium price than the actuarial value of the plan.

High-risk individuals with APTCs had lower odds of selecting a bronze plan over a silver plan compared to high-risk individuals without APTCs; this suggests that these individuals are using their tax credit on more generous health insurance, prioritizing that choice over spending their income on other goods. The APTCs would make the silver plans affordable so these individuals would be more likely to choose silver over bronze plans; however, without APTCs, some high-risk individuals may have been priced out of plans with actuarial values above bronze.

**Age and Metal Level**

Older individuals had lower odds of selecting a platinum or gold plan over a silver plan when we controlled for receipt of APTCs and being at risk of higher expenditures. This is surprising given prior work suggesting that older individuals are less price sensitive than younger individuals [12]. However, without tax credits, premiums for more generous plans may have been too high for older individuals; premiums for older individuals can be up to 3 times as large as those for younger individuals [3]. Older individuals, and those predicted to have incurred more costs, were more likely to switch to a QHP in 2014, but perhaps without tax credits the premiums on gold and platinum QHPs were high enough to deter older individuals, even those who are high risk [13, 14].

**Limitations**

Our study has several limitations. First, it lacks a good proxy measure for income. Income for individuals in a 2014 QHP could be roughly imputed from receipt of various levels of federal assistance, but eligibility was unknown for individuals who did not switch to a QHP. We explored income variables at the census tract level [15, 16, 17]; however, these variables did not correlate with what we knew about income for individuals in our sample with CSR and APTC. Without adequate indicators of income, we were unable to estimate who was eligible for federal assistance but declined to take advantage of these programs by not switching to a QHP. Additionally, the dataset only included tax credits received

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**TABLE 4. Multinomial Model Results (Referent Outcome is Silver)**

|                | High-risk (N = 1,692) | Low-risk (N = 1,691) |
|----------------|-----------------------|----------------------|
|                | Odds ratios (95% confidence intervals) | Odds ratios (95% confidence intervals) |
| Female         |                       |                      |
| Platinum       | 0.900 (0.777–1.042)   | 0.798 (0.664–0.959)  |
| Gold           | 1.023 (0.893–1.172)   | 0.971 (0.839–1.124)  |
| Bronze         | 0.888 (0.758–1.040)   | 0.755 (0.666–0.856)  |
| Age 18–35      |                       |                      |
| Platinum       | 1.453 (1.181–1.787)   | 1.997 (1.629–2.448)  |
| Gold           | 1.273 (1.038–1.562)   | 1.419 (1.211–1.662)  |
| Bronze         | 0.842 (0.621–1.139)   | 1.070 (0.922–1.243)  |
| Age 36–50      |                       |                      |
| Platinum       | REF                   | REF                  |
| Gold           | REF                   | REF                  |
| Bronze         | REF                   | REF                  |
| Age 51+        |                       |                      |
| Platinum       | 0.321 (0.268–0.385)   | 0.029 (0.017–0.049)  |
| Gold           | 0.475 (0.402–0.561)   | 0.129 (0.096–0.174)  |
| Bronze         | 1.221 (0.991–1.506)   | 0.707 (0.579–0.863)  |
| APTC (binary)  |                       |                      |
| Platinum       | 0.254 (0.194–0.333)   | 0.436 (0.303–0.627)  |
| Gold           | 0.449 (0.354–0.570)   | 0.984 (0.767–1.264)  |
| APTC (binary)  |                       |                      |
| Bronze         | 0.403 (0.296–0.548)   | 1.345 (1.088–1.664)  |
| APTC amount    |                       |                      |
| Platinum       | 1.006 (1.005–1.007)   | 1.010 (1.009–1.012)  |
| Gold           | 1.004 (1.004–1.005)   | 1.006 (1.005–1.007)  |
| Bronze         | 1.003 (1.002–1.004)   | 1.004 (1.004–1.005)  |
| Sample size    |                       |                      |
| Platinum       | 374                   | 176                  |
| Gold           | 482                   | 352                  |
| Bronze         | 258                   | 603                  |

APTC = advance premium tax credit
REF = referent category
at the time plans were purchased (APTCs); tax credits that individuals opted to defer until the income tax filing date were not included. Second, generalizability was limited because we studied beneficiaries enrolled with 1 insurer in both 2013 and 2014; however, this insurer had a significantly large market share of the state’s non-group health insurance beneficiaries [6]. In a minority of counties this insurer faced competition from other insurers in the Marketplace; however, as we only had data from 1 insurer, we were unable to observe the influence of brand recognition and insurer reputation on plan selection. Finally, individuals who were new to the insurance market in 2014 may have exhibited different behaviors than those behaviors we observed in our sample. Individuals with CSR also may have behaved differently, but they were excluded from the sample. The focus of this analysis was the effect of the APTC on metal level. A majority of individuals eligible for CSR would have selected silver plans because, had they selected another metal level, they would have been ineligible for the subsidy. Additionally, CSR recipients are very low income (100%-250% FPL), which also may also have affected plan selection.

Conclusions

Receipt of APTCs influenced behavior in the 2014 plan selection process and had effects that depended on predicted future health care expenditures. Plans with low actuarial value have been criticized for not offering individuals’ sufficient financial security and adequate access to care. However, considering consumers operate under a fixed budget for health insurance and all other goods, for some individuals who expect low health care spending over the following year, a plan with lower actuarial value may provide adequate benefits and access while allowing these individuals to purchase other needed and desired goods and services. For individuals at risk of high health care costs, APTCs allow individuals to purchase plans with higher actuarial value than would have otherwise been affordable.

In the years following 2014, health care premiums have been increasing. If average premiums increase more than the second lowest cost silver plan (on which APTCs are calculated), then the APTCs will be lower relative to the average premium, guiding low income individuals, and even less healthy individuals, into low cost silver or bronze plans [18]. Future studies should be conducted to determine how price sensitivity and plan selection affect utilization and health status; even within a metal level, plans can have different out-of-pocket costs [14].

Individuals on non-group plans in 2013 may have opted not to switch to a QHP in 2014 for a variety of reasons, one of which may have been overcoming the inertia of status quo bias. Considering that the number of uninsured individuals has been decreasing [11], studies examining why people switch plans and how status quo bias factors into their decisions will be of increasing importance as the consumer-driven Marketplaces for non-group health insurance continue to grow.

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