OBESITY UNCOVERED: DIAGNOSIS WITHOUT TREATMENT IN PLANS OFFERED ON THE 2015 HEALTH INSURANCE MARKETPLACE

by

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ABSTRACT

Background: Obesity is a public health problem that currently affects more than one-third of American adults. The Patient Protection and Affordable Care Act (ACA) requires all private health plans to cover diagnostic screening and counseling for obesity. However, the ACA does not guarantee access to effective treatment for obesity.

Objective: To examine the health plans sold on the 2015 Health Insurance Marketplace (Marketplace) by describing the coverage and access barriers for surgical and non-surgical treatments for obesity.

Methods: Using data from the 2015 Marketplace Public Use Files that consist of a census of all health plans sold on the 2015 Marketplace in 37 states, which excludes plans sold on the 14 State-based Marketplaces. Descriptive statistics are employed to characterize the plans' coverage, exclusions, limitations, and out-of-pocket costs for bariatric surgery (surgical category), dietician services, nutritional counseling, gym access, gym membership, gym membership reimbursement, and weight loss programs (non-surgical category).

Results: Bariatric surgery was covered by 30.4% of plans. Of these plans, over one-third applied a limit on the coverage amount. Of the plans covering bariatric surgery with a copayment, 60.3% of these plans had a copayment of $1,000 or more. In contrast, the non-surgical treatments were covered by more than 80% of plans. Of these plans with a copayment, 71.6% had a copayment between $1 and $49. Of the plans covering treatments in the surgical or non-surgical categories,

coinsurance rates were more prevalent than copayments, with almost two-thirds of plans having a coinsurance rate of 50% or more.

Conclusions: A majority of plans on the 2015 Marketplace covered non-surgical obesity treatments. However, bariatric surgery, the treatment that results in the greatest amount of weight loss, was covered by less than one-third of plans. Furthermore, bariatric surgery, even when covered, may be less accessible to patients with a Marketplace plan due to high cost sharing and limits on the coverage amount. This study is significant to public health because it provides an early description of the coverage and access barriers to obesity treatments available to Marketplace enrollees, highlighting the importance of promoting policy that expands coverage of and access to obesity treatments given the high prevalence of obesity in the U.S.

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PREFACE

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Lastly, I thank my family for the many supportive phone calls. And to my husband, thank you for encouraging me to follow my dreams.

1.0 INTRODUCTION

Obesity is a public health problem in the United States. One of every three U.S. adults is obese[1] (Ogden, Carroll, Kit, & Flegal, 2014). One of every five dollars spent on U.S. healthcare is spent on obesity (Cawley & Meyerhoefer, 2012). Because obese persons are at greater risk of many serious health conditions, specifically heart disease, stroke, type 2 diabetes and certain types of cancer, obesity costs billions of U.S. dollars annually (Cawley & Meyerhoefer, 2012; CDC). In 2015, over ten million U.S. persons were insured under health plans purchased on the U.S. Government's Health Insurance Marketplace (Marketplace), established by the 2010 Patient Protection and Affordable Care Act (ACA) (HHS, 2014a; "The Patient Protection and Affordable Care Act," 2010). Under the ACA, all Marketplace plans are required to fully cover diagnostic screening and counseling for obesity (HHS, 2010). Moreover, Marketplace plans fully cover state-defined "essential health benefits," (EHBs) which could include obesity treatment ("The Patient Protection and Affordable Care Act," 2010). However, not all states define obesity treatment as an EHB and, thus, are not required to cover obesity treatment in their Marketplace plans (Weiner & Colameco, 2014). Even in states that do consider obesity treatment as an EHB, their Marketplace plans may not cover the most effective obesity treatment. Furthermore, Marketplace plans may have access barriers in place such as exclusions and limitations on

[1] The CDC defines obesity as "a body mass index (BMI) of 30 or higher. BMI is a measure of an adult's weight in relation to his or her height, specifically the adult's weight in kilograms divided by the square of his or her height in meters" (CDC, 2010).

coverage and high out-of-pocket costs. Therefore, patients whose screening and diagnosis for obesity is covered under their Marketplace plans still might have difficulty obtaining treatment for obesity.

The objective of this study is to assess the variability in coverage and access for the following seven obesity treatments: bariatric surgery, dietician services, gym access, gym membership, gym reimbursement, nutritional counseling, and weight loss programs. A descriptive analysis of health insurance plans offered on the 2015 Marketplace was conducted using data made available by the Centers for Medicare & Medicaid Services (CMS). The **specific aim** is to investigate two questions. First, do Marketplace plans cover treatment for obesity? Second, if Marketplace plans cover treatment for obesity, then are there any access barriers, which are defined as exclusions, limits, and out-of-pocket costs (copayments, coinsurance, and deductibles)?

1.1 BACKGROUND

Obesity is a national epidemic that affects 78.6 million U.S. adults (Ogden et al., 2014). The prevalence of adult obesity steadily increased from 1990 to 2002. In 1990, no state had a prevalence of obesity equal to or greater than 15%. By 2010, no state had a prevalence of obesity less than 20%, and twelve states had a prevalence greater than 30% (CDC, 2015b). While overall adult obesity prevalence has been steady since 2003, it remains high. Moreover, the prevalence is still rising for some race, age, and socioeconomic groups more than others, i.e., non-Hispanic blacks and Hispanics, middle-age adults, as well as women with lower education and income (HSPH, 2011). Health organizations, such as the American Medical Association and the World

Health Organization, have declared obesity a disease in part to increase the public's awareness of the adverse health and economic consequences of the obesity epidemic (AMA, 2013; WHO, 2000). Obesity is associated with an increased risk of serious health conditions, including heart disease, stroke, type 2 diabetes, and certain types of cancer (CDC). Health economists have estimated that 20.6% of annual health expenditures are spent treating obesity-related illnesses, approximately $190.2 billion (Cawley & Meyerhoefer, 2012). In short, obesity affects the health and finances of many Americans.

1.1.1 Obesity and the Role of Health Insurance Coverage

The overarching goal of the 2010 ACA was to achieve near-universal health insurance coverage for U.S. citizens. Notably, the ACA requires all U.S. citizens to obtain health insurance coverage. The Health Insurance Marketplace was created to serve as a source for this expansion of coverage. Implemented in 2013, the Marketplace allows individuals and small businesses to shop, compare, and buy health insurance. Each state must participate in the Marketplace by running their own state-based Marketplace, partnering with the federal government, or allowing the federal government to facilitate its Marketplace (CMS, 2015c). At the end of the 2016 enrollment period, 12.7 million Americans had selected a health plan through one of the available Marketplaces (HHS, 2016).

Assessing this new Marketplace and the U.S.'s public health problem, how does the ACA's Marketplace affect obesity? There are two regulatory policies regarding the plans sold on the Marketplace that directly affect obesity.

1.1.2 Preventive Services

First, the ACA includes a mandate requiring all private health insurance plans[2] to cover, with no cost sharing, any preventive health service[3] that is rated 'A' or 'B' by the United States Preventive Services Task Force (USPSTF) ("The Patient Protection and Affordable Care Act," 2010). In relation to obesity, the USPSTF recommends, with a B rating, that 1) clinicians screen all adults for obesity, and 2) clinicians should offer or refer adult patients with a BMI of 30kg/m^2 or higher to intensive, multicomponent behavioral interventions (USPSTF, 2016). The task force describes intensive, multicomponent behavioral interventions as "behavioral management activities, such as setting weight-loss goals, improving diet and physical activity, addressing barriers to change, self-monitoring, and strategizing how to maintain lifestyle changes" (Moyer, 2012). Furthermore, the USPSTF found that in order to be effective the interventions must be comprehensive and of high intensity, consisting of 12 to 26 sessions per year (Moyer, 2012). The Department of Health and Human Services (HHS) interpreted the USPSTF's recommendation and issued regulations stating that the preventive services covered under the ACA for adults include "diagnostic screening and counseling for obesity" (HHS, 2010).

[2] These requirements apply to all private plans – including individual, small group, large group, and self-insured plans in which employers contract administrative services to a third party payer – with the exception of those plans that maintain "grandfathered" status (KFF, 2015a).

[3] These services must be covered without charging a copayment or coinsurance, even if the deductible has not been met. However, this only applies when the preventive service is delivered by a provider in-network (HHS, 2010).

1.1.3 Essential Health Benefits

Second, the ACA set forth a broad list of 10 essential health benefits (EHBs), which are required to be covered in marketplace plans to ensure a common set of meaningful insurance benefits comparable to those provided by employer-based insurance (Cassidy, 2013; Giovannelli, Lucia, & Corlette, 2014). The 10 EHBs are 1) ambulatory patient services; 2) emergency services; 3) hospitalization; 4) maternity and newborn care; 5) mental health and substance use disorder services, including behavioral health treatment; 6) prescription drugs; 7) rehabilitative and habilitative services and devices; 8) laboratory services; 9) preventive and wellness services and chronic disease management; and 10) pediatric services, including oral and vision care (CMS, 2016f). The law authorized the HHS to issue regulations to define the EHBs in detail. Rather than setting a national standard for these 10 benefits, the regulation directed each state to define its own EHBs (HHS, 2012). This federalist method yields a high degree of variability in what EHBs are for each state. The process for each state to establish its own EHBs involved selecting a "benchmark plan" from four existing plans in that state (CMS, 2015a):

1. "the largest plan by enrollment in any of the three largest small group insurance products in the State's small group market;
2. any of the largest three State employee health benefit plans by enrollment;
3. any of the largest three national Federal Employee Health Benefit Program plan options by enrollment; or
4. the largest insured commercial non-Medicaid Health Maintenance Organization (HMO) operating in the State."

If a state does not select a benchmark plan, then the default is the largest small group plan in the state. This approach provides flexibility to states and allows them to keep their traditional role as

regulators of health insurance. HHS announced in spring 2015 that it intends to use this benchmark approach at least through plan year 2017 (CMS, 2015a). HHS also declared that state mandated benefits enacted prior to December 2011 are considered to be part of the state's EHBs package. State mandated benefits are treatments that health plans must cover according to state law. If a state mandates benefits either after that date or in excess of those in the EHBs package, then the state must pay the cost of the additional benefits (CMS, 2011). Overall, states' EHBs are based on two items: 1) the state's mandated benefits prior to December 2011 and 2) the state's benchmark plan choice (Yang & Pomeranz, 2014). Because of the variation in states' mandated benefits as well as their benchmark choices, the EHB packages created by each state may introduce a degree of variability in coverage for obesity treatments between the states. Independent of coverage for obesity treatments, Marketplace plans in states that do consider obesity treatment an EHB may have variation in access barriers to treatment such as coverage exclusions, limitations, and out-of-pocket costs. Regardless of the variability in coverage and access to obesity treatments, it is important to provide access to effective treatment in order to decrease the prevalence of obesity in the U.S.

1.1.4 Effectiveness of Obesity Treatments

An obesity treatment is effective if the amount of body weight lost is clinically significant, meaning that the patient experiences health benefits as a result (Ross, 2016). There is scientific consensus that patients begin to accrue health benefits after losing as little as five to seven percent of their initial weight (CDC, 2005; Christian, Tsai, & Bessesen, 2010; Franz et al., 2007; Klein et al., 2004; NIH, 1998). Sustained modest weight loss in adults (5 to 10%) is associated with the reduction in incidence of diabetes, lower blood pressure, and improved dyslipidemia

(McTigue et al., 2003; SIGN, 2010). Greater weight loss (≥10%) has been linked with improved lipid profiles and glycemic control (McTigue et al., 2003). Other health improvements associated with weight loss are reduction in osteoarthritis-related disability, improved lung function in patients with asthma, as well as lowered all-cause cancer and diabetes mortality in some patient groups (SIGN, 2010).

What follows is the evidence of effectiveness for specific obesity treatments that are commonly reviewed in the literature and might be covered under Marketplace plans (summarized in Table 1).

Surgery. Broadly speaking, surgical intervention for obesity has been shown to achieve greater weight loss than non-surgical interventions, such as drugs, diet, and exercise (J. L. Colquitt, Pickett, Loveman, & Frampton, 2014; Picot et al., 2009). A Cochrane systematic review found an average weight loss of 21kg at year eight post-surgery versus a weight gain for conventional treatments of drug therapy, diet, and exercise (J. Colquitt, Clegg, Loveman, Royle, & Sidhu, 2005). A more recent systematic review and meta-analysis evaluated three bariatric surgery types (gastric bypass, adjustable gastric banding, and sleeve gastrectomy) and found that the average BMI loss five years after surgery was 12 to 17 units (Chang et al., 2014).

Diet and exercise. Studies have shown that exercise results in small weight changes and is proportional to the intensity of the physical activity. Furthermore, exercise combined with diet can increase weight loss more than exercise alone (Curioni & Lourenco, 2005; Shaw, Gennat, O'Rourke, & Del Mar, 2006). The weight loss is regained almost half the time after one year (Curioni & Lourenco, 2005).

Nutritional counseling. Nutritional or dietary counseling is proven to aid in modest to minimal weight loss. A meta-analysis summarized that dietary counseling can reduce weight

nearly 2 BMI units (Armstrong et al., 2011; Dansinger, Tatsioni, Wong, Chung, & Balk, 2007). Counseling methods found in the literature include motivational interviewing, dietary-based lifestyle modifications, as well as phone and email counseling in the work setting (Armstrong et al., 2011; Dansinger et al., 2007; van Wier et al., 2009).

Weight Loss Programs. Early research comparing popular named brand weight loss programs revealed that the evidence was not firm enough to support the use of commercial weight loss programs (Tsai & Wadden, 2005). However, more recent studies have shown that weight loss was observed with any low-carbohydrate or low-fat diet, with small weight loss differences between individual named diets (Johnston et al., 2014). For long-term weight loss results, the evidence supports the Weight Watchers and Jenny Craig programs (Gudzune et al., 2015).

Drugs. Another non-surgical treatment option is drug therapy, prescription or non-prescription, i.e., dietary supplements. Prescription weight loss drugs that are FDA approved such as sibutramine, orlistat, and phentermine promote modest weight loss (2.9 to 4.7 kg) when given along with recommendations for diet (Li et al., 2005; Padwal, Li, & Lau, 2004). Due to lack of specificity of the drug coverage information available in the Marketplace data, drug therapy as a treatment for obesity will not be included in the analysis.

Acupuncture. Acupuncture is an alternative medicine option for weight loss. A 2009 systematic review and meta-analysis revealed that acupuncture was an effective treatment for weight loss with an average reduction of 1.72 kg in body weight (Cho, Lee, Thabane, & Lee, 2009). Overall, there is limited high quality research on the effectiveness of acupuncture for weight loss, and since it is not considered a common treatment for obesity, I excluded this treatment from my analysis.

Out of the common obesity treatments reviewed in the literature, bariatric surgery results in the greatest amount of weight loss. However, bariatric surgery may not be an appropriate treatment for all obese individuals. The other non-surgical interventions vary in degree of effectiveness and mostly result in minimal to modest weight loss (Table 1).

Table 1. Summary of Obesity Treatment Effectiveness

Treatment	**Amount Lost at Follow-up[a]**	**Follow-up Time**	**Clinically Significant[b]**	**Source**
Bariatric Surgery	12 to 17 BMI units[c]	5 years	Most likely	Review (Chang et al., 2014)
Commercial Weight Loss Programs	7.25 to 7.27 kg	12 months	Maybe	Review (Johnston et al., 2014)
Physical Activity and Diet	6.7 kg	1 year	Maybe	Review (Curioni & Lourenco, 2005)
Nutritional Counseling	4 to 7 kg	1 year (12 to 26 sessions)	Maybe	Review (Moyer, 2012)
Prescription Drugs (with diet)	2.9 to 4.7 kg	1 year	Maybe	Reviews (Li et al., 2005; Padwal et al., 2004)
Acupuncture	1.72 kg	Not stated	Not likely	Review (Cho et al., 2009)

Notes: Summary of common obesity treatments reviewed in the literature. The 2nd and 3rd columns note the time to follow-up and how much weight was lost at that time, respectively. The 4th and 5th columns list whether the amount of weight loss is clinically significant and the source of the information, respectively. [a] 1 kg = 2.20 lbs. [b] Amount of weight loss may be clinically significant depending on baseline weight. [c] BMI is weight in kilograms divided by the square of height in meters.

To summarize, the ACA requires coverage for diagnostic screening and counseling for obesity. Obesity treatment, however, is required to be covered only if a state considers it an EHB. There is no policy in place that guarantees access to an effective obesity treatment, even if a patient is diagnosed as obese. In other words, U.S. persons whose diagnosis for obesity is covered under their Marketplace plans might find themselves unable to access effective obesity treatment.

In order to significantly reduce the prevalence of obesity in the U.S., it is important to determine the degree to which Marketplace plans facilitate not only coverage but also access to

effective obesity treatment. However, no prior research, to my knowledge, has investigated the variation in coverage and access to specific obesity treatments in plans offered on the Marketplace. This study addresses this gap in the literature by determining the variability in Marketplace plans' coverage, exclusions, limitations, and out-of-pocket costs (copayments, coinsurance, and deductibles) for obesity treatments.

2.0 METHODS

2.1.1 Data Source

I analyzed data from the Health Insurance Marketplace Public Use Files (Marketplace PUFs), made available in 2015 by the Center for Consumer Information and Insurance Oversight (CCIIO) within CMS. The Marketplace PUFs encompass eight files of plan- and issuer-level data on health plans[4] and stand-alone dental plans offered to individuals and small businesses through the Marketplace (CMS, 2016b). Data include information from states participating in the Federally Facilitated Marketplaces (FFM), the State Partnership Marketplaces (SPMs), and the State-based Marketplaces (SBMs) that rely on the federal information technology (IT) platform. For 2015, there were 27 FFMs, seven SPMs, and three federally supported SBMs for a total of 37 states in the dataset (listed in Tables 4 and 5). It does not include data from the 14 State-based Marketplaces that do not rely on the federal IT platform (KFF, 2015b). Additionally, it does not include enrollment or claims data. However, this database contains a census of all health plans sold on the 2015 FFMs, SPMs, and federally supported SBMs. The data are, therefore, nationally representative.

[4] In order to be offered on the Marketplace, plans must be certified as a "qualified health plan," which meet EHB, cost sharing, and other requirements (CMS, 2016e).

I utilized two of the eight Marketplace PUFs. Specifically, I merged the Benefits and Cost Sharing PUF and the Plan Attributes PUF in order to identify and assess the plans' characteristics for coverage and access of obesity treatments. I excluded stand-alone dental plans since dental plans do not cover obesity treatments. Likewise, catastrophic plans were excluded because their benefits package is not comparable to the benefits offered by the platinum, gold, silver, and bronze plans.[5]

2.1.2 Measures

Dependent variables. I used four main outcomes of interest to assess the coverage and access for obesity treatments found in health plans offered on the Marketplace. The first outcome was a binary measure of whether or not a plan covers one of seven obesity treatments (bariatric surgery, dietician services, gym access, gym membership, gym reimbursement, nutritional counseling, and weight loss programs). The seven obesity treatments used in this study were selected if they were common obesity treatments with some evidence of effectiveness in prior research. The second outcome measure was, among plans that cover at least one obesity treatment, whether the plan excluded coverage for the obesity treatment for any reason. This measure was categorized based on the type of exclusion: patient characteristics, type of service, provision of service, or other. An exclusion based on patient characteristics, for example, would be a plan that covered nutritional counseling, but only if the treatment was used for diabetes

[5] Catastrophic plans do cover obesity screening and counseling as all plans must under the USPSTF recommendation. However, catastrophic plans are only for those under 30 or have a hardship exemption, and they do not offer benefits as generously as the other metal levels (CMS, 2016c).

education management. An exclusion based on type of service, for example, would be a plan that excluded coverage for bariatric surgery if the physician used the Garren gastric bubble technique. The third outcome measure was, for plans that cover at least one obesity treatment, whether or not the plan applied a limit or cap on the coverage amount for the treatment over a certain time period. For example, a plan might limit coverage to a certain number of visits a year for nutritional counseling or a certain dollar amount per month for gym membership reimbursement. The final outcome measure was the out-of-pocket costs associated with a covered obesity treatment. My out-of-pocket cost measures included copayment, coinsurance, and deductible amounts.

Independent variables. The primary independent variables of interest were the state in which the plan is offered and the metal level of the plan. The platinum, gold, silver, and bronze metal levels are categories based on the percentage a health plan pays of the average overall cost of providing essential health benefits to beneficiaries. The percentages a health plan pays for each category includes: 60% for bronze, 70% for silver, 80% for gold, and 90% for platinum (CMS, 2016c). A secondary independent variable I assessed was the market type on which the plan was offered, either the Individual Marketplace, where individuals or families may purchase health insurance, or the Small Business (SHOP) Marketplace, where businesses with 50 employees or less may purchase health insurance for their employees (CMS, 2015b).

2.1.3 Analysis

I employed descriptive statistics on my four outcomes of interest to characterize the plans' coverage and access for obesity treatments. To appropriately compare the coverage and access for the seven obesity treatments, I categorized them as surgical treatments, consisting of bariatric

surgery, and non-surgical treatments, which contained the remaining six treatments (dietician services, nutritional counseling, gym access, gym membership, gym membership reimbursement, and weight loss programs). The non-surgical category was further grouped into diet treatments (dietician services and nutritional counseling), physical activity treatments (gym access, gym membership, and gym membership reimbursement), and weight loss programs.

For the coverage analyses, I assumed that a treatment was not covered if it was not listed for a plan. I analyzed the count and percentage of plans that covered the obesity treatments by state, metal level, and market type. For the access analyses, of the plans that covered at least one obesity treatment, I assumed that the covered treatment does not have an exclusion or quantitative limit if these were not listed for the plan in the data. The copayment and coinsurance variables were converted into categorical instead of continuous variables due to the format of the original data. My access analyses included the count and percentage of exclusions, quantitative limits, and out-of-pocket costs for the obesity treatments by metal level. Next, I analyzed the categorical dollar amount or percentage of copayments, coinsurance rates, and deductibles. I also calculated the mean, standard deviation, and median costs for plan deductibles stratified by metal level. The unit of analysis was each Marketplace plan. I counted each cost sharing reduction variant of the plan as its own unique product since I were interested in studying the out-of-pocket costs associated with a covered treatment. Because the data contain a census of all Marketplace plans and is not a sample, statistical significance testing is not appropriate. Analyses were performed using Stata/SE 14.1 and some using SAS/STAT 9.3 software. The University of Pittsburgh Institutional Review Board determined that this research did not constitute human subjects research.

2.1.4 Limitations

To my knowledge, this study is the first to use the Marketplace PUFs to study obesity treatments. However, it has several limitations. First, the Marketplace PUFs do not include health plan data from the 14 SBMs with their own IT support system, which means that the results are not generalizable to these states including the District of Columbia. However, the dataset does contain a majority of the states. Second, it is possible that the dataset contains data reporting errors made by the health insurance companies when reporting their health plan information to CMS. However, I have no specific knowledge about the magnitude or extent of such errors. I have no reason to believe that such data reporting errors would bias my results. Third, I could not examine an exhaustive list of obesity treatments. A common obesity treatment recognized in the literature is medication. However, I could not include this type of treatment in my analysis due to a lack of specificity in the drug information in the data. Fourth, the study provides descriptive data, so causality between coverage of obesity treatments and obesity prevalence can be inferred from my findings. Lastly, I were not able to include analysis on plan enrollment and utilization of obesity treatments in the Marketplace plans. To my knowledge, these data are not available to extramural researchers at this time.

3.0 RESULTS

The Marketplace PUFs data included a total of 31,253 plans. After excluding all dental and catastrophic plans, my analytic dataset had 26,473 plans. The results address themes from my study's two main research questions: 1) coverage of obesity treatments and 2) access to those treatments once a plan provides coverage.

3.1.1 Coverage

Of the 26,473 plans, 86.9% covered at least one of the seven obesity treatments (23,017 plans). Examining coverage of the seven treatments within my defined categories, 30.4% of plans covered the surgical treatment category and 83.1% of plans covered at least one of the six non-surgical treatments (Figure 1). Within the non-surgical category, a majority of plans (81.3%) covered diet treatments, a small portion covered weight loss programs (8.7%), and even fewer plans covered physical activity treatments (0.9%) (Figure 2). I found that coverage for the diet treatments was essentially coverage for nutritional counseling, since 0.1% of plans covered dietician services (38 plans). Regarding differences in market type, the Individual Marketplace was larger offering five times more plans than the SHOP Marketplace (22,074 Individual plans vs. 4,399 SHOP plans). Stratifying by market type revealed an 80:20 coverage trend for both the surgical and non-surgical categories. 82.9% of plans that cover bariatric surgery were on the

Individual Marketplace, while 17.1% were on the SHOP Marketplace. Of the plans that covered at least one of the non-surgical treatments, 82.6% where on the Individual Marketplace, while 17.4% were on the SHOP Marketplace.

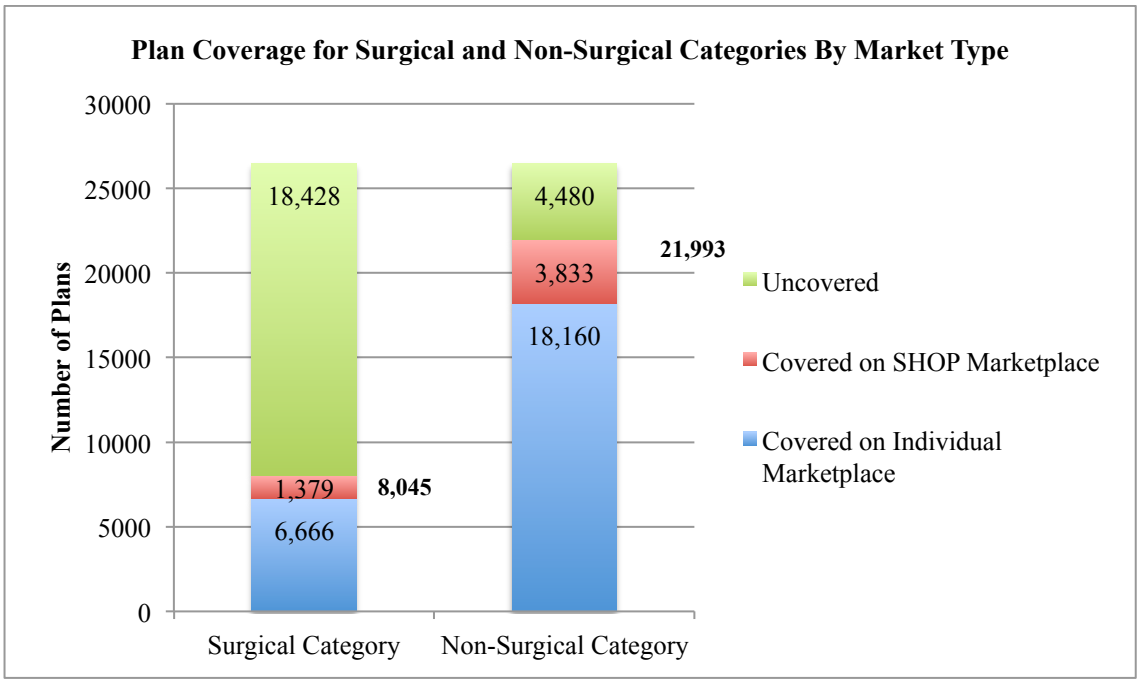

Figure 1. Plan Coverage for Surgical and Non-Surgical Categories by Market Type

Source: Authors' analysis of the Benefits and Cost Sharing and the Plan Attributes Marketplace PUFs. Notes: Count of plans that cover obesity treatments in the surgical or non-surgical categories by market type. Total number of plans (26,473) excludes stand-alone dental plans and catastrophic plans.

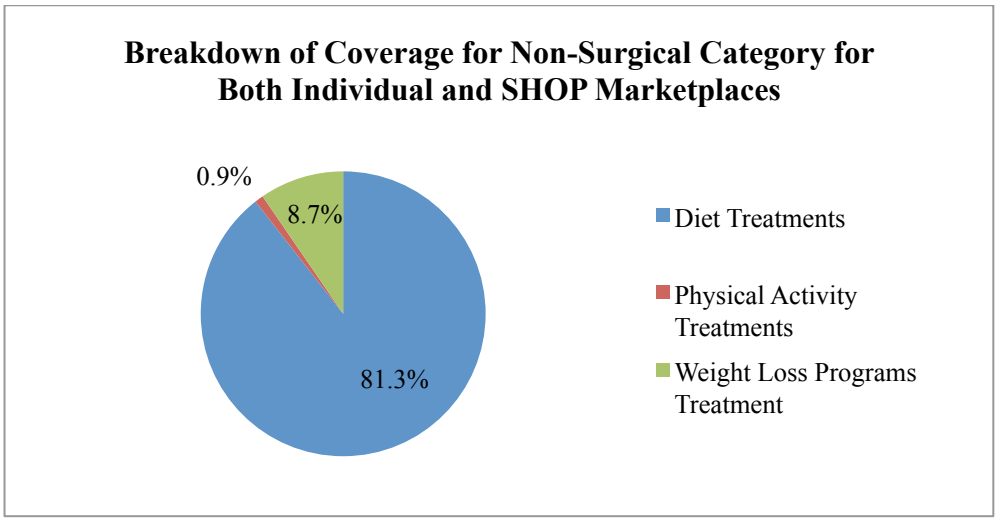

Figure 2. Breakdown of Plan Coverage for Non-Surgical Category

Source: Authors' analysis of the Benefits and Cost Sharing and the Plan Attributes Marketplace PUFs. Notes: Percentage of plans on both the Individual and SHOP Marketplaces that cover at least one obesity treatment in three non-surgical subcategories. Diet treatments include dietician services and nutritional counseling. Physical activity treatments include gym access, gym membership, and gym membership reimbursement.

I also assessed the proportion of metal levels that cover the surgical and non-surgical categories (Table 2). The higher actuarial value plans covered the surgical and non-surgical categories more frequently than the lower actuarial value plans (platinum and gold vs. silver and bronze). The silver level plans were less likely to cover these categories than the bronze level plans (29.4% vs. 30.3% for surgical; 81.4% vs. 84.1% for non-surgical). Despite the silver level being the least frequent metal level to cover treatments in the surgical and non-surgical categories, silver plans were the most prevalent plans on the Marketplace that cover treatments in the surgical and non-surgical categories. For example, of the plans covering the surgical treatment, 47.6% were silver versus 23.7% bronze, 22.1% gold, and 6.7% platinum (Table 3).

Table 2. Metal Levels Covering Surgical and Non-Surgical Categories

% (n)	Metal Level				
Category	Platinum n=1,672	Gold n=5,504	Silver n=13,021	Bronze n=6,276	Total n=26,473
Surgical	32.3% (540)	32.2% (1,775)	29.4% (3,827)	30.3% (1,903)	30.4% (8,045)
Non-Surgical	90.8% (1,518)	83.5% (4,594)	81.4% (10,603)	84.1% (5,278)	83.1% (21,993)

Source: Authors' analysis of the Benefits and Cost Sharing and the Plan Attributes Marketplace PUFs. Notes: Percentage and count of plans within a metal level that cover a surgical obesity treatment or cover at least one treatment in the non-surgical category. Denominator is the total number of plans within a metal level.

Table 3. Prevalence of Plans Covering Surgical and Non-Surgical Categories by Metal Level

% (n)	Category	
Metal Level	Surgical n=8,045	Non-Surgical n=21,993
Platinum	6.7% (540)	6.9% (1,518)
Gold	22.1% (1,775)	20.9% (4,594)
Silver	47.6% (3,827)	48.2% (10,603)
Bronze	23.7% (1,903)	24% (5,278)

Source: Authors' analysis of the Benefits and Cost Sharing and the Plan Attributes Marketplace PUFs. Notes: The percentage and count of plans covering obesity treatments in the surgical or non-surgical categories. Denominator is the total number of plans that cover the surgical treatment or at least one of the non-surgical treatments.

To assess coverage across states, I tabulated the number of plans offered within each state and then calculated the percentage of plans that cover the surgical and non-surgical categories for each state in the dataset (Table 4). Using these percentages, I created a histogram showing the distribution of state coverage for the surgical and non-surgical categories (Figure 3). First, coverage for bariatric surgery had a bimodal distribution, indicating that states tended to either have all or none of the plans in their state cover bariatric surgery. For the non-surgical category, a majority of states offer plans that cover at least one non-surgical treatment. Looking within the non-surgical category to see which of the non-surgical treatments are covered, one sees that the proportion of plans covering this category for each state is heavily driven by coverage of the diet treatments, specifically, nutritional counseling (Table 5).

Table 4. Plan Coverage for Surgical and Non-Surgical Categories By State

State	Number of Plans[a] (n)	Plans Covering Surgical Category[b] % (n)	Plans Covering Non-Surgical Category[c] % (n)
Alabama	136	1.5% (2)	100% (136)
Alaska	219	0% (0)	100% (219)
Arizona	1,142	100% (1,142)	100% (1,142)
Arkansas	331	0% (0)	100% (331)
Delaware	147	100% (147)	57.1% (84)
Florida	1,839	0% (0)	80.6% (1,483)
Georgia	1,192	0% (0)	67.4% (803)
Illinois	1,634	100% (1,634)	100% (1,634)
Indiana	723	0% (0)	54.6% (395)
Iowa	510	100% (510)	100% (510)
Kansas	369	0% (0)	35.8% (132)
Louisiana	397	0% (0)	100% (397)
Maine	282	100% (282)	100% (282)
Michigan	1,108	100% (1,108)	100% (1,108)
Mississippi	249	0% (0)	54.2% (135)
Missouri	491	0% (0)	66.6% (327)
Montana	315	0% (0)	100% (315)
Nebraska	322	0% (0)	76.4% (246)
Nevada	437	100% (437)	44.4% (194)
New Hampshire	238	100% (238)	81.9% (195)
New Jersey	319	100% (319)	100% (319)
New Mexico	378	100% (378)	100% (378)
North Carolina	463	100% (463)	100% (463)
North Dakota	241	100% (241)	62.2% (150)
Ohio	1,509	0% (0)	100% (1,509)
Oklahoma	768	14.7% (113)	100% (768)
Oregon	662	8% (53)	100% (662)
Pennsylvania	1,646	9.1% (150)	52.3% (861)
South Carolina	688	0% (0)	48.8% (336)
South Dakota	268	100% (268)	59.3% (159)
Tennessee	768	0% (0)	100% (768)
Texas	2,392	0% (0)	98% (2,344)
Utah	536	0% (0)	52.6% (282)
Virginia	585	26.5% (155)	100% (585)
West Virginia	97	100% (97)	0% (0)
Wisconsin	2,792	1% (28)	83.8% (2,341)
Wyoming	280	100% (280)	0% (0)
Total	26,473	30.4% (8,045)	83.1% (21,993)

Source: Authors' analysis of the Benefits and Cost Sharing and the Plan Attributes Marketplace PUFs. Notes: The percentage and count of plans covering obesity treatments in the surgical or non-surgical categories for the 37 states included in the dataset. [a] Number of plans consists of all plans sold on Marketplace except dental plans and catastrophic plans. [b] Surgical category consists of the bariatric surgery treatment. [c] Non-surgical category consists of dietician services, nutritional counseling, gym access, gym membership, gym membership reimbursement, and weight loss programs treatments.

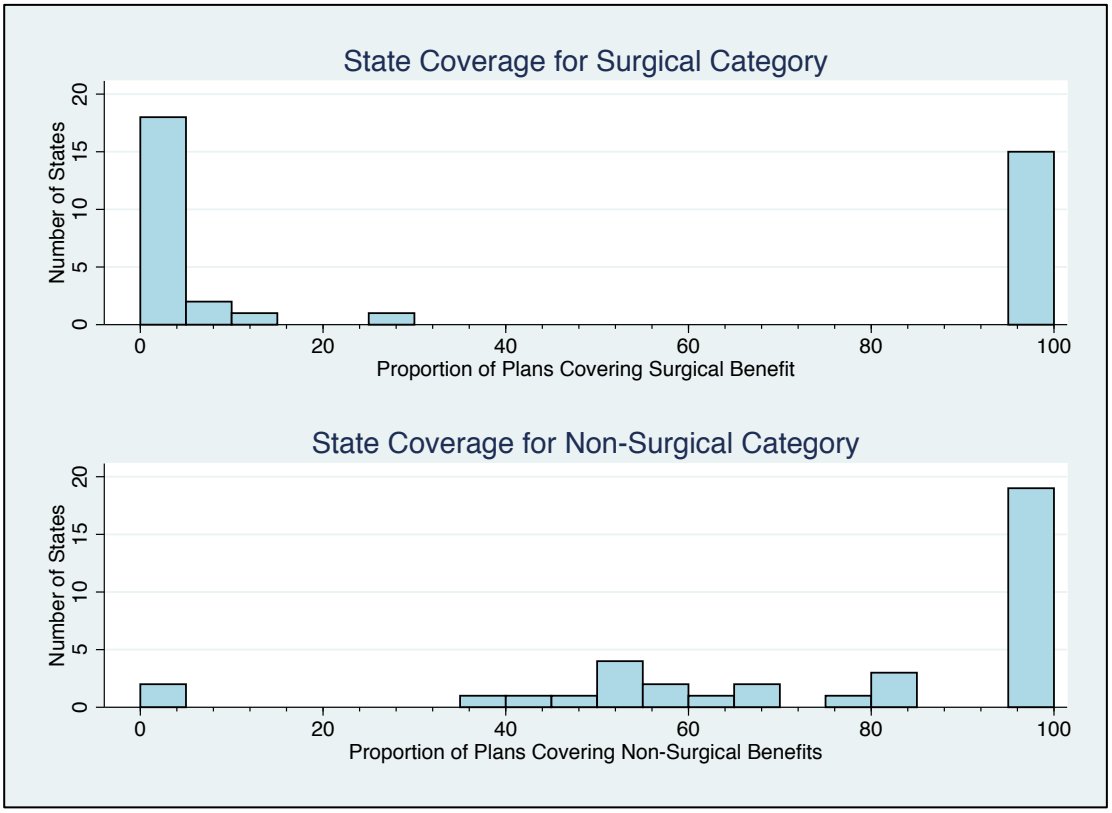

Figure 3. State Coverage for Surgical and Non-Surgical Categories

Source: Authors' analysis of the Benefits and Cost Sharing and the Plan Attributes Marketplace PUFs. Notes: Top distribution illustrates the number of states and the percentage of plans covering the surgical obesity treatment. Bottom distribution illustrates the number of states and the percentage of plans covering at least one treatment in the non-surgical category. See Table 4 for exact state percentages. Surgical category consists of the bariatric surgery treatment. Non-surgical category consists of dietician services, nutritional counseling, gym access, gym membership, gym membership reimbursement, and weight loss programs treatments.

Table 5. Plan Coverage for Non-Surgical Subcategories By State

State	Number of Plans[a] (n)	Plans Covering Diet Treatments[b] % (n)	Plans Covering Physical Activity Treatments[c] % (n)	Plans Covering Weight Loss Programs Treatment % (n)
Alabama	136	100%, 136	0%, 0	0%, 0
Alaska	219	100%, 219	0%, 0	0%, 0
Arizona	1,142	100%, 1,142	9.3%, 106	7.9%, 90
Arkansas	331	100%, 331	0%, 0	0%, 0
Delaware	147	57.1%, 84	0%, 0	0%, 0
Florida	1,839	73.7%, 1,355	7%, 128	0%, 0
Georgia	1,192	67.4%, 803	0%, 0	0%, 0
Illinois	1,634	100%, 1,634	0%, 0	9.2%, 150
Indiana	723	53.5%, 387	0%, 0	1.1%, 8
Iowa	510	100%, 510	0%, 0	0%, 0
Kansas	369	35.8%, 132	0%, 0	0%, 0
Louisiana	397	100%, 397	0%, 0	0%, 0
Maine	282	100%, 282	0%, 0	0%, 0
Michigan	1,108	100%, 1,108	0%, 0	100%, 1,108
Mississippi	249	54.2%, 135	0%, 0	0%, 0
Missouri	491	66.6%, 327	0%, 0	0%, 0
Montana	315	69.5%, 219	0%, 0	30.5%, 96
Nebraska	322	76.4%, 246	0%, 0	0%, 0
Nevada	437	44.4%, 194	0%, 0	14.4%, 63
New Hampshire	238	81.9%, 195	0%, 0	12.6%, 30
New Jersey	319	100%, 319	0%, 0	0%, 0
New Mexico	378	34.9%, 132	0%, 0	100%, 378
North Carolina	463	100%, 463	0%, 0	55.3%, 256
North Dakota	241	62.2%, 150	0%, 0	0%, 0
Ohio	1,509	100%, 1,509	0%, 0	0%, 0
Oklahoma	768	100%, 768	0%, 0	12%, 92
Oregon	662	100%, 662	0%, 0	0%, 0
Pennsylvania	1,646	52.3%, 861	0%, 0	0%, 0
South Carolina	688	48.8%, 336	0%, 0	0%, 0
South Dakota	268	59.3%, 159	0%, 0	0%, 0
Tennessee	768	100%, 768	0%, 0	0%, 0
Texas	2,392	98%, 2,344	0%, 0	0%, 0
Utah	536	52.6%, 282	0%, 0	0%, 0
Virginia	585	100%, 585	0%, 0	4.6%, 27
West Virginia	97	0%, 0	0%, 0	0%, 0
Wisconsin	2,792	83.8%, 2,341	0%, 0	0%, 0
Wyoming	280	0%, 0	0%, 0	0%, 0
Total	26,473	81.3%, 21,515	0.9%, 234	8.7%, 2,298

Source: Authors' analysis of the Benefits and Cost Sharing and the Plan Attributes Marketplace PUFs.
Notes: The percentage and count of plans covering at least one treatment in the three subcategories in the non-surgical category for the 37 states included in the dataset. [a] Number of plans consists of all plans sold on Marketplace except dental plans and catastrophic plans. [b] The Diet Treatments consist of dietician services and nutritional counseling treatments. [c] The Physical Activity Treatments consist of gym access, gym membership, and gym membership reimbursement treatments.

3.1.2 Access

To examine how accessible an obesity treatment is once a plan covers it, I looked at coverage exclusions, limitations, and out-of-pocket costs.

Exclusions. Among the 8,045 plans that covered the surgical category, 10.7% of plans applied an exclusion to the coverage of bariatric surgery (Table 6). These exclusions are broken down into three types. Most exclusions for coverage were based on the type of service, mostly due to the surgery technique, followed by patient characteristics then provision of service. When stratifying by metal level, I did not observe large differences in exclusions based on the actuarial value of the plans (12.1% gold, 10.5% silver, 10.2% bronze, and 8.9% platinum).

Next, of the 21,993 plans that covered the non-surgical category, 12.1% of plans had any type of coverage exclusion (Table 6). The prevalence of exclusion type for the non-surgical treatments followed a similar trend as the surgical treatments with most exclusions for coverage being due to type of service followed by patient characteristics then provision of service. All metal levels had a similar proportion of plans that applied an exclusion to the coverage for the non-surgical treatments, which ranged from 10.6% to 12.7%.

Table 6. Exclusions and Limits on Treatment Among Plans Covering Surgical and Non-Surgical Categories

Surgical Category[a]					
% (n)	Metal Level[c]				
Exclusions[d]	Platinum n=540	Gold n=1,775	Silver n=3,827	Bronze n=1,903	Total n=8,045
Patient characteristics	4.4% (24)	2.7% (48)	1.7% (65)	1.5% (29)	2.1% (166)
Type of service	2.2% (12)	7.8% (138)	7.7% (295)	7.9% (150)	7.4% (595)
Provision of service	2.2% (12)	1.6% (28)	1% (40)	0.8% (16)	1.2% (96)
Total	8.9% (48)	12.1% (214)	10.5% (400)	10.2% (195)	10.7% (857)
Limit on Benefit[e]	33% (178)	36.7% (652)	36.1% (1,382)	33.7% (641)	35.5% (2,853)
Non-Surgical Category[b]					
% (n)	Metal Level[c]				
Exclusions[d]	Platinum n=1,518	Gold n=4,594	Silver n=10,603	Bronze n=5,278	Total n=21,993
Patient characteristics	1.6% (24)	3.9% (180)	2.6% (279)	3.2% (167)	3% (650)
Type of service	7.4% (112)	5.5% (254)	7.2% (764)	5.9% (310)	6.5% (1,440)
Provision of service	3.6% (54)	2.8% (130)	2.7% (289)	1.3% (67)	2.5% (540)
Other	0% (0)	0.3% (12)	0.1% (11)	0.3% (14)	0.2% (37)
Total	12.5% (190)	12.5% (576)	12.7% (1,343)	10.6% (558)	12.1% (2,667)
Limit on Benefit[e]	17.1% (260)	16.9% (776)	15.7% (1,668)	15.5% (817)	16% (3,521)

Source: Authors' analysis of the Benefits and Cost Sharing and the Plan Attributes Marketplace PUFs. Notes: Top section depicts the percentage and count of plans that apply an exclusion or limitation on coverage for the surgical obesity treatment. Bottom section tabulates the percentage and count of plans that apply an exclusion or limitation on coverage for at least one of the treatments in the non-surgical category. [a] Surgical category consists of the bariatric surgery treatment. [b] Non-surgical category consists of the diet treatments (dietician services and nutritional counseling), the physical activity treatments (gym access, gym membership, and gym membership reimbursement) and the weight loss programs treatment. [c] Category of coverage for a plan based on the actuarial value. [d] Exceptions for the coverage of a benefit based on reasons such as patient characteristics, type of service, or provision of service. A plan may apply more than one exclusion to the coverage of a benefit. [e] A numerical limit or cap on the coverage amount for a benefit.

Limit on benefit. Of the plans that covered the surgical category, 35.5% of plans applied a quantitative limit on the coverage for bariatric surgery (Table 6). Therefore, plans sold on the Marketplace are three times as likely to have a cap on coverage for bariatric surgery than to have exclusions applied to the coverage of bariatric surgery. The most common numerical limit on the coverage for bariatric surgery was one procedure per lifetime. Stratifying by metal level resulted in a similar trend as I observed for exclusions, with gold plans having the highest proportion of plans that applied a limit to the coverage for bariatric surgery, followed by silver plans, bronze plans, then platinum plans (36.7%, 36.1%, 33.7%, and 33%, respectively). Among the plans that covered the non-surgical category, 16% of plans applied a quantitative limit on the coverage (Table 6). All four metal levels had a comparable proportion of plans that applied a limit to the coverage for the non-surgical category, ranging from 15.5% to 17.1%. Looking at the most frequently covered treatment in the non-surgical category, nutritional counseling, the most common quantitative limit was six visits per year.

Table 7. Out-of-Pocket Costs Among Plans Covering Surgical and Non-Surgical Categories

Surgical Category[a]					
% (n)	Metal Level[c]				
Out-of-Pocket Costs[d]	Platinum n=540	Gold n=1,775	Silver n=3,827	Bronze n=1,903	Total n=8,045
Copay					
None	15.6% (84)	10.5% (187)	8.5% (324)	5.8% (110)	8.8% (705)
Tier 1[e]	9.8% (53)	7.4% (131)	7% (268)	6.1% (117)	7.1% (569)
Tier 2[e]	0% (0)	0.5% (8)	0.4% (17)	0.3% (6)	0.4% (31)
Out-of-network[f]	0.6% (3)	1% (17)	0.9% (34)	0.7% (14)	0.8% (68)
Coinsurance					
None	2.2% (12)	1.4% (25)	0.9% (34)	0.8% (15)	1.1% (86)
Tier 1[e]	68% (367)	67.8% (1,204)	72.5% (2,776)	55.1% (1,048)	67.1% (5,395)
Tier 2[e]	12.4% (67)	8.4% (149)	6.8% (262)	4.7% (89)	7% (567)
Out-of-network[f]	84.6% (457)	83.1% (1,475)	85.7% (3,279)	79.4% (1,511)	83.6% (6,722)
Deductible[g]					
None	0.2% (1)	0.5% (8)	0.2% (9)	0% (0)	0.2% (18)
Tier 1[e]	41.9% (226)	39.2% (696)	35% (1,339)	7.8% (148)	29.9% (2,409)
Tier 2[e]	2.8% (15)	2.5% (45)	1.5% (59)	0% (0)	1.5% (119)
Out-of-network[f]	20.4% (110)	19.5% (346)	18.5% (707)	3% (57)	15.2% (1,220)
Non-Surgical Category[b]					
% (n)	Metal Level[c]				
Out-of-Pocket Costs[d]	Platinum n=1,518	Gold n=4,594	Silver n=10,603	Bronze n=5,278	Total n=21,993
Copay					
None	4.6% (70)	4.9% (225)	5.6% (590)	3.8% (198)	4.9% (1,083)
Tier 1[e]	16.3% (247)	10.2% (468)	12% (1,276)	5% (263)	10.2% (2,254)
Tier 2[e]	0.1% (2)	0.7% (32)	0.6% (65)	0.6% (33)	0.6% (132)
Out-of-network[f]	2% (31)	1% (45)	0.7% (74)	0.7% (37)	0.9% (187)
Coinsurance					
None	0.7% (10)	1.8% (82)	2.1% (219)	1.6% (84)	1.8% (395)

Table 7. Continued

Tier 1[e]	16.6% (252)	29.2% (1,341)	29.4% (3,113)	28% (1,478)	28.1% (6,184)
Tier 2[e]	2.8% (42)	1.9% (88)	2.1% (223)	1.3% (70)	1.9% (423)
Out-of-network[f]	84.2% (1,286)	80.9% (3,737)	79.6% (8,466)	72.6% (3,846)	78.5% (17,335)
Deductible[g]					
None	0.1% (2)	0.4% (20)	0.2% (24)	0% (0)	0.2% (46)
Tier 1[e]	38.8% (589)	52.8% (2,425)	40.6% (4,308)	7.7% (406)	35.1% (7,728)
Tier 2[e]	1.2% (18)	1.8% (81)	1.4% (145)	0% (0)	1.1% (244)
Out-of-network[f]	25.8% (391)	25.9% (1,191)	17.7% (1,882)	2.2% (118)	16.3% (3,582)

Source: Authors' analysis of the Benefits and Cost Sharing and the Plan Attributes Marketplace PUFs. Notes: Top section tabulates the percentage and count of plans that have an out-of-pocket cost for the coverage of the surgical obesity treatment. Bottom section illustrates the percentage and count of plans that have an out-of-pocket cost for the coverage of at least one of the treatments in the non-surgical category. [a] Surgical category consists of the bariatric surgery treatment. [b] Non-surgical category consists of the diet treatments (dietician services and nutritional counseling), the physical activity treatments (gym access, gym membership, and gym membership reimbursement) and the weight loss programs treatment. [c] Category of coverage for a plan based on the actuarial value. [d] Costs to the beneficiary to access a treatment (copayments, coinsurance, and deductibles). Plans may have out-of-pocket costs in both tiers and for out-of-network providers. [e] Tiers are different levels of in-network providers that are grouped by the health plan based on whether they are higher-performing in terms of quality, safety, and efficiency when compared to their peers (AHIP, 2014). [f] Out-of-network facilities, providers, and suppliers are not part of a health plan's network. Networks are the facilities, providers, and suppliers a health insurer or plan contracts with to provide health care services (CMS, 2016d). [g] Deductibles are based on medical essential health benefits at the individual-level.

Out-of-pocket costs. I assessed financial barriers in the form of out-of-pocket costs. First, I examined copayment costs for the surgical and non-surgical treatments. Among plans that cover the surgical category and provided copayment information, 8.8% had no copayment at all and a slightly smaller percentage had a copayment regardless of tier level (Table 7). Of the plans with a copayment, I observed that all copayments for bariatric surgery were over $100. In fact, copayments were $1,000 or more for 60.3% of plans covering bariatric surgery with a copayment (Figure 4). Of plans covering the non-surgical category with copayment data, 4.9% had no copayment while 10.2% had an in-network tier 1 copayment (Table 7). Only a marginal proportion of plans had an in-network tier 2 or out-of-network copayment (0.6% and 0.9%, respectively). Plans covering treatments in the non-surgical category most frequently had a copayment between $1-$99 (Figure 5). Overall, the metal level and tier that most commonly had a copayment for either the surgical or non-surgical treatment category was the silver level for an in-network tier 1 provider.

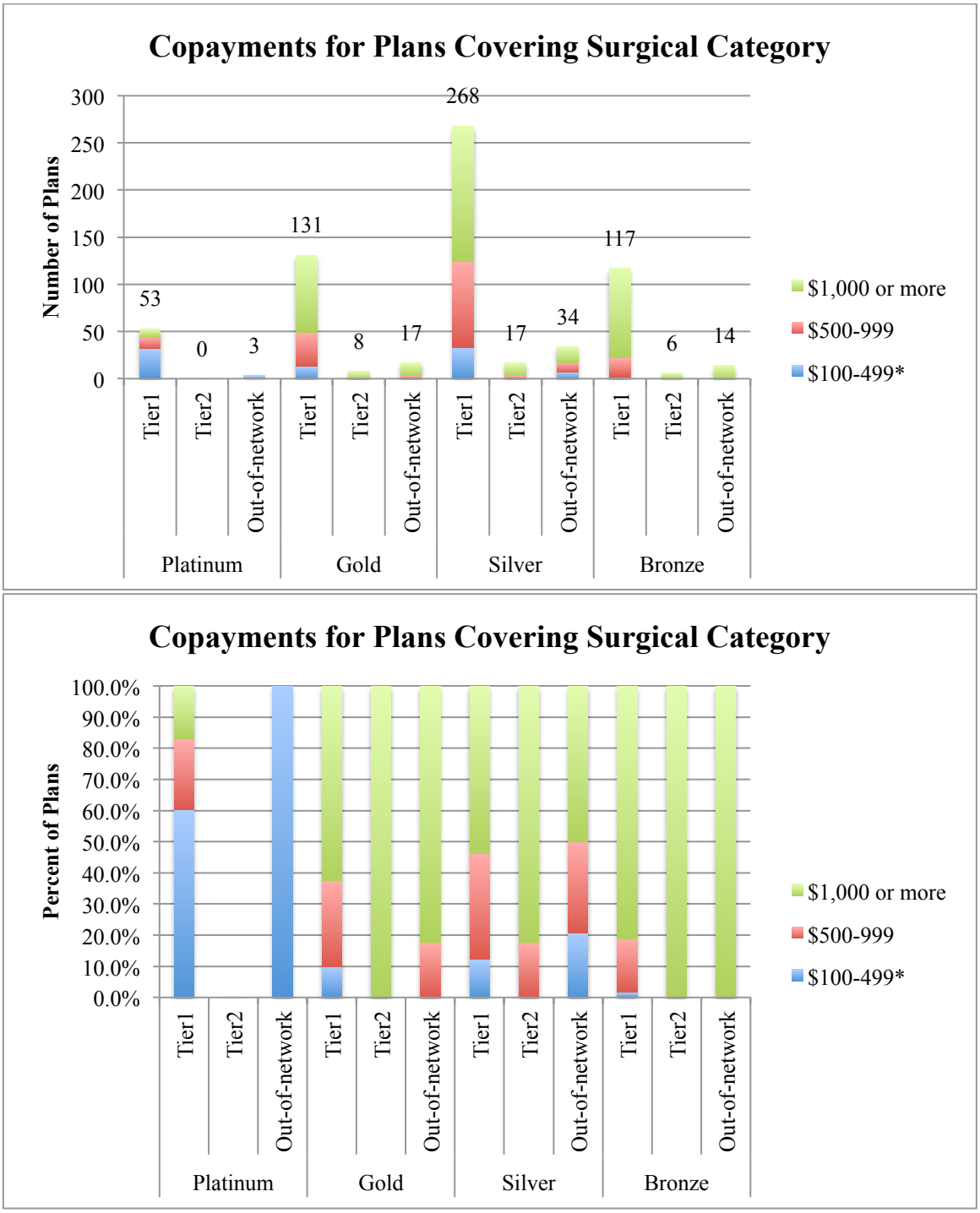

Figure 4. Copayments for Plans Covering Surgical Category

Source: Authors' analysis of the Benefits and Cost Sharing and the Plan Attributes Marketplace PUFs. Notes: Top graph illustrates the number of plans with a copayment that cover the surgical obesity treatment. The copayment is categorized by amount, and then stratified by metal and tier level. Bottom graph illustrates the percentage of plans with a copayment that cover the surgical obesity treatment. The copayment is categorized by amount, and then stratified by metal and tier level. *Of the plans that cover bariatric surgery, none have a copayment amount between $1 and $99.

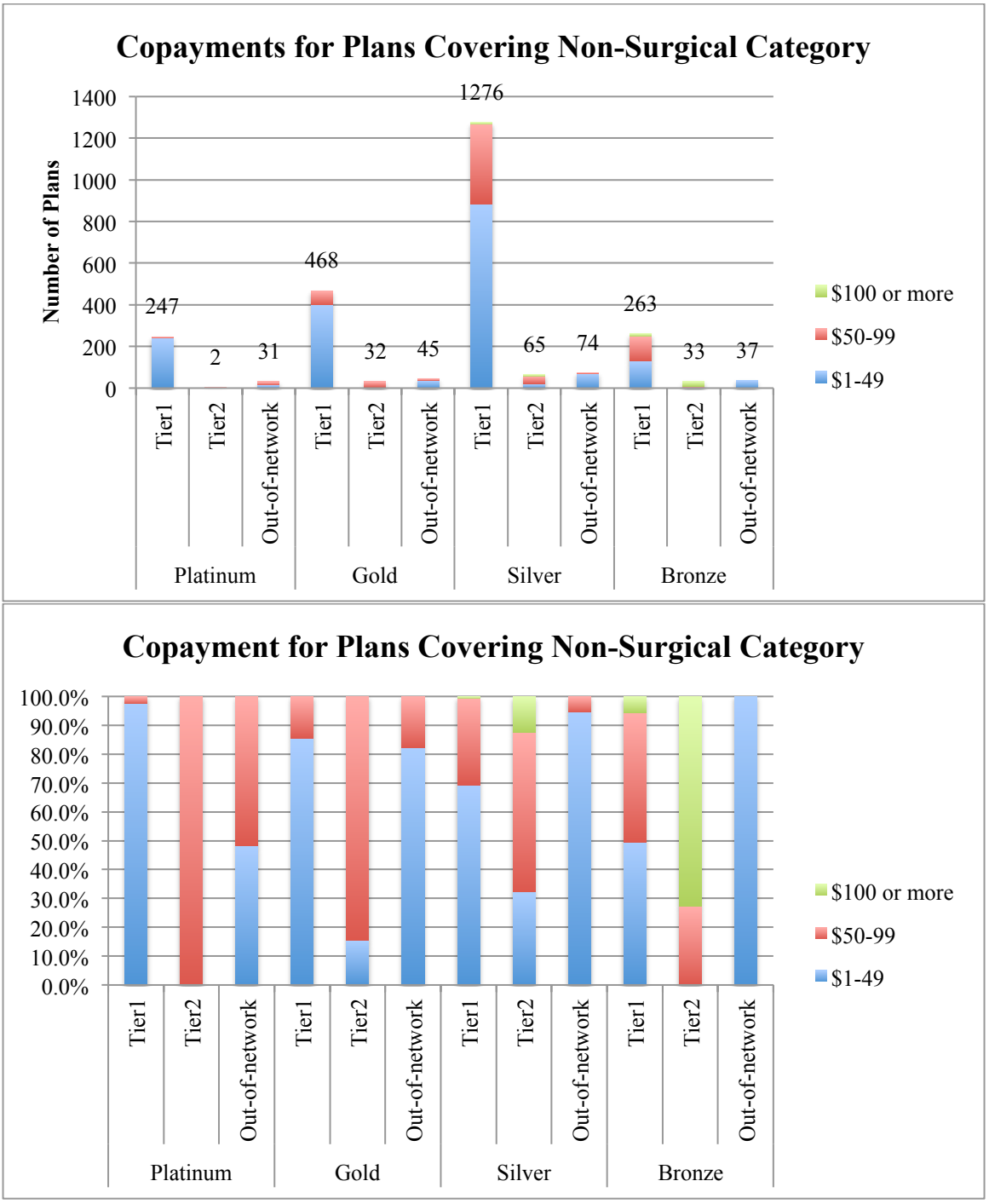

Figure 5. Copayments for Plans Covering Non-Surgical Category

Source: Authors' analysis of the Benefits and Cost Sharing and the Plan Attributes Marketplace PUFs. Notes: Top graph illustrates the number of plans with a copayment that cover at least one obesity treatment in the non-surgical category. The copayment is categorized by amount, and then stratified by metal and tier level. Bottom graph illustrates the percentage of plans with a copayment that cover at least one obesity treatment in the non-surgical category. The copayment is categorized by amount, and then stratified by metal and tier level.

Second, I assessed coinsurance rates for each category. In the surgical category, among the plans covering bariatric surgery, 83.6% had an out-of-network coinsurance, 67.1% had an in-network tier 1 coinsurance, 7% had an in-network tier 2 coinsurance, and 1.1% had no coinsurance (Table 7). When viewing actual coinsurance rates of the plans covering bariatric surgery, 60.5% of plans had a coinsurance rate of 50% or more (Figure 6). Among plans covering the non-surgical category, 78.5% had an out-of-network coinsurance, 28.1% had an in-network tier 1 coinsurance, 1.9% had an in-network tier 2 coinsurance, and 1.8% had no coinsurance (Table 7). When examining the rates an individual may face when accessing one of these non-surgical treatments, I found that 63.9% of plans covering at least one treatment in the non-surgical category had a coinsurance rate of 50% or more (Figure 7). Comparing coinsurance rates to copayments, coinsurance rates were more common than copayments among plans covering treatments in either the surgical or non-surgical category.

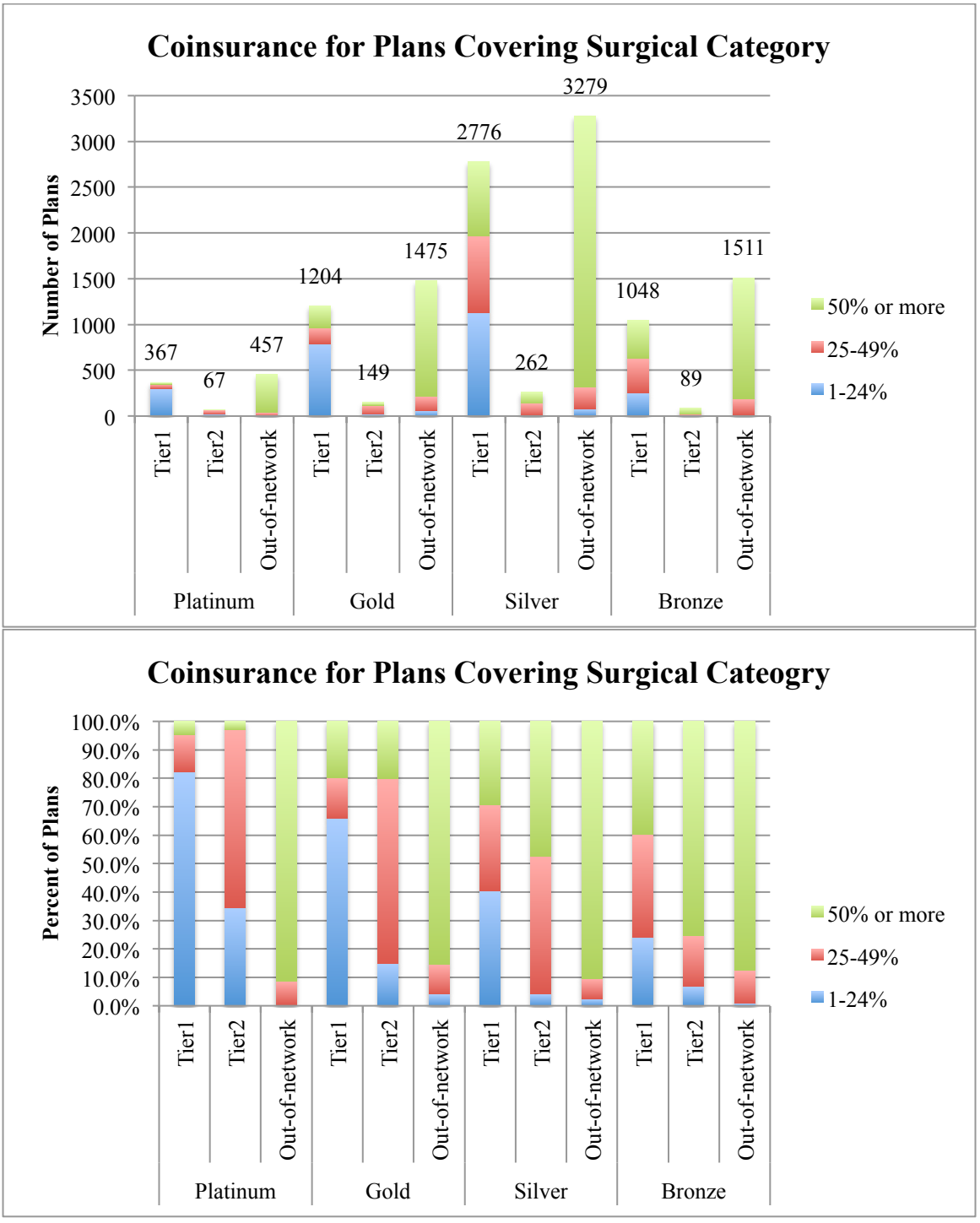

Figure 6. Coinsurance for Plans Covering Surgical Category

Source: Authors' analysis of the Benefits and Cost Sharing and the Plan Attributes Marketplace PUFs.
Notes: Top graph illustrates the number of plans requiring a coinsurance payment that cover the surgical obesity treatment. The coinsurance is categorized by percentage, and then stratified by metal and tier level. Bottom graph illustrates the percentage of plans requiring a coinsurance payment that cover the surgical obesity treatment. The coinsurance is categorized by percentage, and then stratified by metal and tier level.

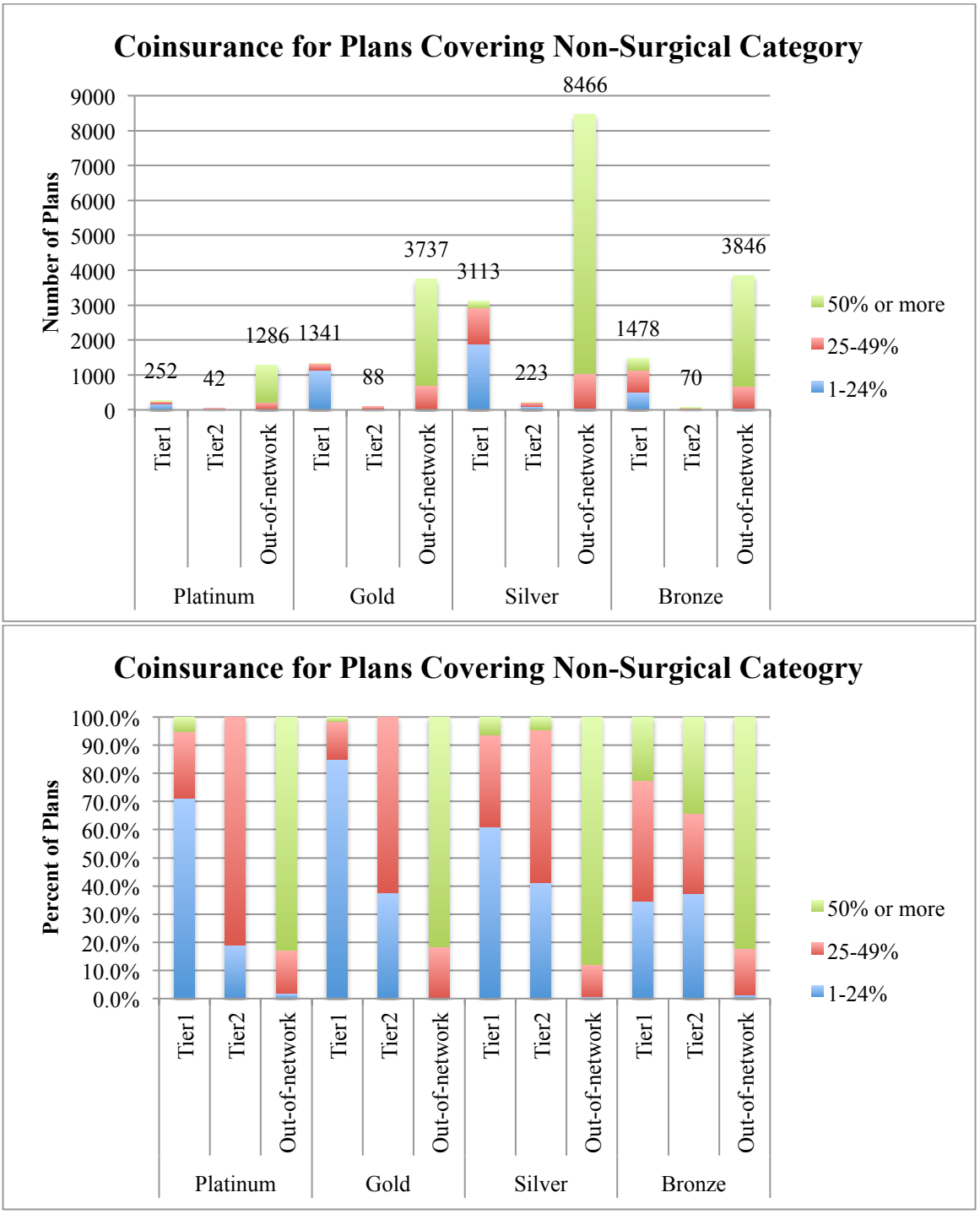

Figure 7. Coinsurance for Plans Covering Non-Surgical Category

Source: Authors' analysis of the Benefits and Cost Sharing and the Plan Attributes Marketplace PUFs. Notes: Top graph illustrates the number of plans requiring a coinsurance payment that cover at least one obesity treatment in the non-surgical category. The coinsurance is categorized by percentage, and then stratified by metal and tier level. Bottom graph illustrates the percentage of plans requiring a coinsurance payment that cover at least one obesity treatment in the non-surgical category. The coinsurance is categorized by percentage, and then stratified by metal and tier level.

Third, I examined deductible costs for both the surgical and non-surgical categories. Among plans covering the surgical category, 29.9% had an in-network tier 1 deductible and 15.2% had an out-of-network deductible. Only small a proportion of plans had an in-network tier 2 deductible or no deductible at all (Table 7). As for the dollar amount of these deductibles, a majority of plans covering bariatric surgery had a deductible below $10,000 or more (Figure 8). Of the plans that cover the non-surgical category, 35.1% had an in-network tier 1 deductible and 16.3% had an out-of-network deductible. Similar to the surgical category, a minimal percentage of plans had an in-network tier 2 deductible or no deductible (Table 7). I observed that over 75% of plans that cover at least one treatment in the non-surgical category had a deductible between $1-$4,999 (Figure 9). Since this is a wide range, Table 8 presents the average deductible cost for a plan that covered the surgical or non-surgical category by metal level. Silver plans were the most prevalent metal level covering my obesity benefits of interest. They had an average deductible of $2,119.89 for the surgical category and an average deductible of $2,163.59 for the non-surgical category (both for a tier 1 in-network provider) (Table 8). I observed that the deductible amounts increased as the actuarial value of the plan decreased (from metal levels platinum to bronze). Also, the deductible amounts increased as the tier level increased (from in-network tier 1 to tier 2, and then to out-of-network).

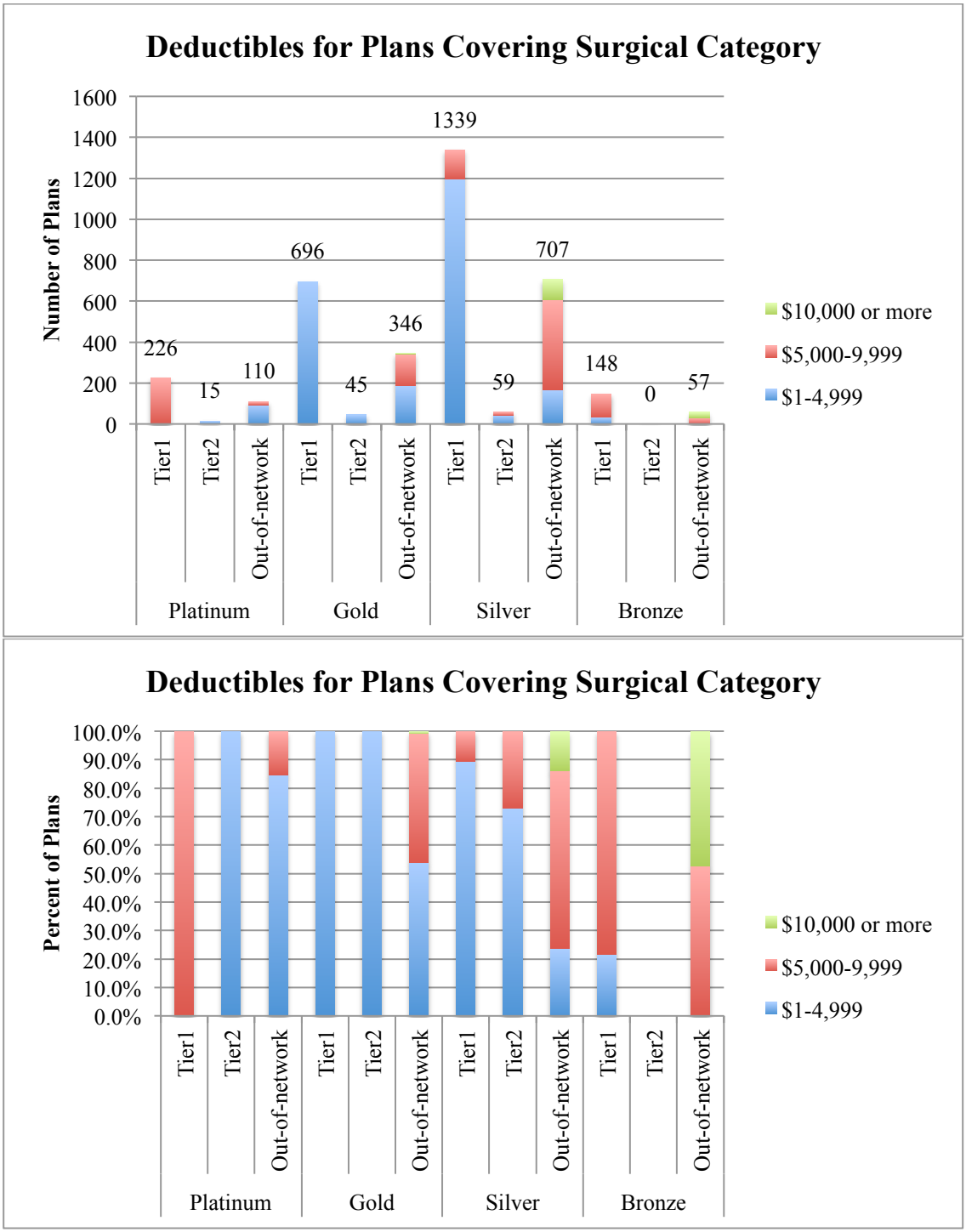

Figure 8. Deductibles for Plans Covering Surgical Category

Source: Authors' analysis of the Benefits and Cost Sharing and the Plan Attributes Marketplace PUFs. Notes: Top graph illustrates the number of plans with a deductible that cover the surgical obesity treatment. The deductible is categorized by amount, and then stratified by metal and tier level. Bottom graph illustrates the percentage of plans with a deductible that cover the surgical obesity treatment. The deductible is categorized by amount, and then stratified by metal and tier level.

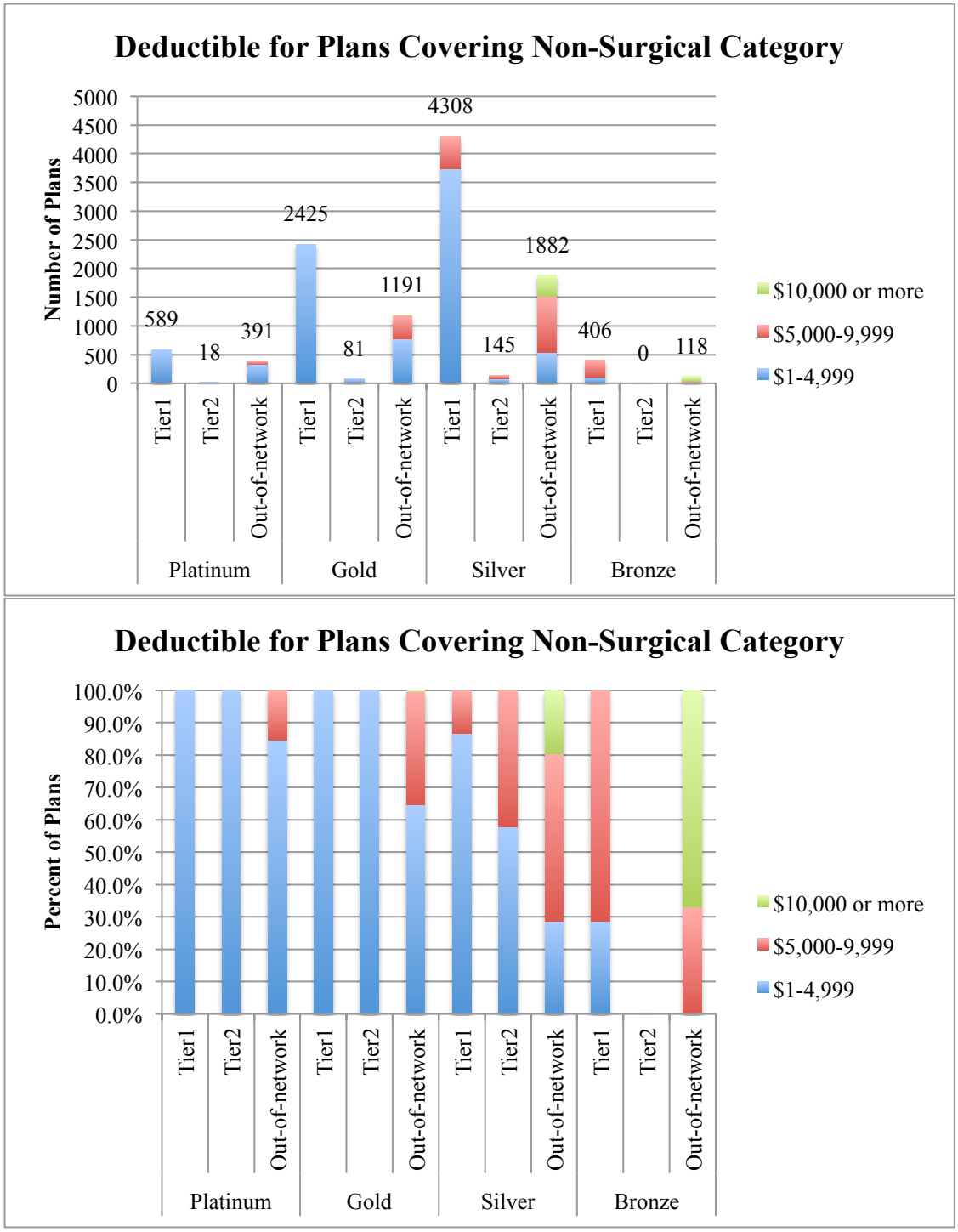

Figure 9. Deductibles for Plans Covering Non-Surgical Category

Source: Authors' analysis of the Benefits and Cost Sharing and the Plan Attributes Marketplace PUFs. Notes: Top graph illustrates the number of plans with a deductible that cover at least one obesity treatment in the non-surgical category. The deductible is categorized by amount, and then stratified by metal and tier level. Bottom graph illustrates the percentage of plans with a deductible that cover at least one obesity treatment in the non-surgical category. The deductible is categorized by amount, and then stratified by metal and tier level.

Table 8. Deductible Costs for Plans Covering Surgical and Non-Surgical Categories

Surgical Category	mean (sd) median			
	Metal Level[d]			
Deductible[e]	Platinum	Gold	Silver	Bronze
Tier 1[f]	$343.14 ($324.38) $250	$1,113.21 ($874.23) $1,000	$2,119.89 ($1,722.07) $2,000	$4,308.70 ($2,264) $5,000
Tier 2[f]	$593.75 ($271.95) $500	$1,601.85 ($1,374.91) $1,000	$2,422.60 ($2,073.23) $2,000	NA
Out-of-network[g]	$1,090.91 ($1,511.49) $1,000	$2,746.98 ($2,637.11) $2,000	$4,341.68 ($3,724.92) $5,000	$5,410.10 ($5,496.17) $5,000
Non-Surgical Category	mean (sd) median			
	Metal Level[d]			
Deductible[e]	Platinum	Gold	Silver	Bronze
Tier 1[f]	$320.53 ($361.98) $250	$1,177.89 ($947.75) $1,000	$2,163.59 ($1,798.59) $2,000	$4,235.06 ($2,317.64) $5,000
Tier 2[f]	$875 ($754.37) $500	$1,770.37 ($1,514.43) $1,000	$2,790.48 ($2,357.60) $2,000	NA
Out-of-network[g]	$1,370.78 ($1,550.89) $1,000	$2,676.62 ($2,435.69) $2,000	$4,979.88 ($3,930.24) $5,000	$5,624.88 ($5,620.06) $6,500

Source: Authors' analysis of the Benefits and Cost Sharing and the Plan Attributes Marketplace PUFs. Notes: Top section tabulates the mean, standard deviation, and median deductible cost for a plan that covers the surgical obesity treatment by metal and tier level. Bottom section illustrates the mean, standard deviation, and median deductible cost for a plan that covers at least one treatment in the non-surgical category by metal and tier level. [a] Surgical category consists of the bariatric surgery treatment. [b] Non-surgical category consists of the diet treatments (dietician services and nutritional counseling), the physical activity treatments (gym access, gym membership, and gym membership reimbursement) and the weight loss programs treatment. [c] Statistics include $0 deductibles. [d] Category of coverage for a plan based on the actuarial value. [e] Deductibles are based on medical essential health benefits at the individual-level. [f] Tiers are different levels of in-network providers that are grouped by the health plan based on whether they are higher-performing in terms of quality, safety, and efficiency when compared to their peers (AHIP, 2014). [g] Out-of-network facilities, providers, and suppliers are not part of a health plan's network. Networks are the facilities, providers, and suppliers a health insurer or plan contracts with to provide health care services (CMS, 2016d).

4.0 DISCUSSION

This study analyzed the variation in coverage and access for obesity treatments in health plans offered on the 2015 Marketplace. My analyses revealed a variety of coverage and access barriers that a person with a Marketplace plan may encounter when seeking treatment for obesity. While a majority of plans covered at least one of the seven obesity treatments analyzed, less than one-third of the plans covered bariatric surgery, the treatment that results in the largest amount of weight loss. A majority of plans covered treatments in the non-surgical category. However, this was heavily influenced by high coverage of the diet treatments, specifically nutritional counseling. These findings suggest that Marketplace plans are not competing based on coverage for obesity treatments due to the low proportion of plans that covered bariatric surgery, dietician services, gym access, gym membership, gym membership reimbursement, and weight loss programs. Overall, it appears that health plans offered on the Marketplace may not significantly reduce the prevalence of obesity in the short-term since the most effective treatment for weight reduction is covered by less than a third of plans.

Out of the 37 states included in the dataset, I found 15 states where 100% of their plans provided coverage for bariatric surgery and 16 states where 0% of their plans provided coverage for bariatric surgery. Of the top ten obese states in the U.S., I found that a majority of these states offered zero plans covering bariatric surgery and only two states where all plans covered bariatric surgery (obesity prevalence from highest to lowest with percentage of plans covering

bariatric surgery: AR 0%, WV 100%, MS 0%, LA 0%, AL 1.5%, OK 14.7%, IN 0%, OH 0%, ND 100%, and SC 0%) (Appendix A). This all or nothing trend in bariatric surgery coverage across the 37 states in the data suggests that the process of how the EHB rule was defined and implemented influenced the coverage of the most effective obesity treatment. In other words, states that mandated coverage for bariatric surgery or selected a benchmark plan that included bariatric surgery resulted in all of their Marketplace plans covering bariatric surgery as an EHB. To increase coverage of bariatric surgery and other obesity treatments, states could revisit their EHB benchmark plan selection to see if they could pick another benchmark plan that would be more inclusive of obesity treatments. A state-level cost-benefit analysis could inform each state's decision whether additional obesity treatments in their EHB package, such as bariatric surgery, would be a sound financial investment in the long run.

When it comes to coverage for preventive health services, the ACA states that a health plan must at a minimum provide coverage with no cost sharing for "evidence-based items or services that have in effect a rating of 'A' or 'B' in the current recommendations of the United States Preventive Services Task Force" ("The Patient Protection and Affordable Care Act," 2010). In relation to obesity, the USPSTF recommends for all adults to be screened for obesity and for clinicians to offer or refer obese patients to "intensive, multicomponent behavioral interventions" (Moyer, 2012; USPSTF, 2012). It seems that HHS has interpreted intensive, multicomponent behavioral interventions as "counseling" as they state that the preventive services covered under the ACA for adults include "obesity screening and counseling" (HHS, 2010). Based on the high percentage of coverage for nutritional counseling, it is likely that health insurance companies are complying with this requirement by interpreting "obesity counseling" as nutritional counseling. However, the USPSTF describes intensive, multicomponent behavioral

interventions as "multiple behavioral management activities, such as group sessions, individual sessions, setting weight-loss goals, improving diet or nutrition, physical activity sessions, addressing barriers to change, active use of self-monitoring, and strategizing how to maintain lifestyle changes" (Moyer, 2012; USPSTF, 2012). One could argue that obesity treatments such as weight loss programs and gym access are part of a multicomponent, behavioral intervention, and, therefore, would merit coverage for obese patients under the ACA's preventive services provision. My findings suggest that health insurance companies do not consider the physical activity treatments and the weight loss programs treatment to be part of a "multicomponent behavioral intervention" since less than 10% of plans covered them, and there was no mention of plans providing coverage only if the patient is obese. If health insurance companies did consider obesity treatments like weight loss programs, gym access, and gym membership or gym membership reimbursement as part of the USPSTF's grade 'B' recommendation of "multicomponent behavioral interventions," then it would increase the number of conservative treatment options that are covered for obese patients.

Even if a plan covers one of the seven obesity treatments, one may face difficulties accessing the obesity treatment due to a plan's exclusions for benefit coverage, numerical limit on the benefit, or out-of-pocket expenses associated with the treatment. Fortunately, there were not many exclusions of coverage for treatments in the surgical or non-surgical category. Of the plans covering bariatric surgery, the most common exclusion was due to the surgery technique, i.e., the Garren gastric bubble technique, open vertical banded gastroplasty, laparoscopic vertical banded gastroplasty, open sleeve gastrectomy, laparoscopic sleeve gastrectomy, or open adjustable gastric banding. The average cost of bariatric surgery is $23,000 (ObesityCoverage, 2015). Therefore, patients with these plans may not be able to afford the surgery or if they

proceed with the surgery, then they may be surprised with high medical bills if they are unaware of the exclusion in their coverage or the technical details of their surgery.

The ACA took major steps protecting consumers from unexpected costs due to health plans applying lifetime and annual *dollar* limits for the coverage of most benefits (HHS, 2014b). However, the ACA still allows health plans to apply *numerical* limits on coverage. I found that over one-third of plans that covered bariatric surgery applied a quantitative limit on coverage. The most common coverage limitation for bariatric surgery was one procedure per lifetime. Physicians and patients need to be aware of this possible limit on coverage so that resources are in place to ensure that behavioral change accompanies surgery so patients can successfully keep the weight off over time. Fortunately, only 16% of plans that covered treatments in the non-surgical category applied a numerical limit on coverage. However, 93% of these plans applied a limit on coverage for the diet treatments. The most common numerical limit on the coverage for nutritional counseling was six visits per year. The USPSTF recommends 12 to 26 sessions a year in order for intensive, multicomponent behavioral interventions to be effective (Moyer, 2012; USPSTF, 2012). If clinicians consider nutritional counseling as a behavioral intervention that can incorporate activities such as "setting weight-loss goals, improving diet or nutrition…addressing barriers to change, active use of self-monitoring, and strategizing how to maintain lifestyle changes," then health plans may need to increase the quantitative limit on nutritional counseling visits per year in order for their beneficiaries to see a clinically significant improvement (Moyer, 2012; USPSTF, 2012).

As for out-of-pocket costs, one might expect to see fewer financial barriers as the actuarial value of the plan increases, i.e., from metal levels bronze to platinum. However, this trend is not evident in my results. When accessing bariatric surgery as a covered treatment, one

faces a copayment of $1,000 or more for 60.3% of plans with a copayment. The covered non-surgical treatments had a more affordable copayment between $1-$49 for 71.6% of plans with a copayment. Of the plans covering treatments in the surgical or non-surgical category, coinsurance rates were more prevalent than copayments. Almost two-thirds of plans covering either category had a coinsurance rate of 50% or more. These descriptive findings reveal that bariatric surgery, even when covered, may have high cost sharing when trying to access it.

In addition to the possible actions mentioned above that states and health insurance companies could act upon to improve the coverage and access to obesity treatments for the 10.2 million Americans with a Marketplace plan, I recommend that HHS continue their ongoing efforts to improve the Marketplace website so patients can easily see which obesity treatments are covered and if any exclusions, limitations, or out-of-pocket costs apply when shopping for or updating their health insurance plan. For the 2016 enrollment, a new search feature was added for "doctors, medical facilities, or prescription drugs" so one can see if a plan covers them (CMS, 2016a). Adding "benefits" to this search feature would be helpful because it would prevent shoppers from needing to search within each health plan's detailed "Summary of Benefits" to see if an obesity treatment is covered.

5.0 CONCLUSION

This study provides an early description of the coverage and access barriers to obesity treatments available to Marketplace enrollees. I found that the most clinically effective obesity treatment, bariatric surgery, is covered by less than one-third of Marketplace plans. Even if a plan covered an obesity treatment, Marketplace enrollees may face difficulties accessing the treatment due to exclusions and limits on coverage as well as out-of-pocket expenses associated with the treatment. In light of these findings, it is important to promote policy that expands coverage of and access to obesity treatments given the high prevalence of obesity and its detrimental health and economic effects. The coverage and access to treatments for this public health problem will need to be closely monitored as the Marketplace continues to grow and the rate of obesity in the U.S. remains high.

APPENDIX: OBESITY PREVALENCE IN THE UNITED STATES

Table 9. Percent of Obese Adults By State From Highest to Lowest

State	Percentage	State	Percentage
Arkansas	35.9	Wyoming	29.5
West Virginia	35.7	Illinois	29.3
Mississippi	35.5	Arizona	28.9
Louisiana	34.9	Idaho	28.9
Alabama	33.5	Virginia	28.5
Oklahoma	33.0	New Mexico	28.4
Indiana	32.7	Maine	28.2
Ohio	32.6	Oregon	27.9
North Dakota	32.2	Nevada	27.7
South Carolina	32.1	Minnesota	27.6
Texas	31.9	New Hampshire	27.4
Kentucky	31.6	Washington	27.3
Kansas	31.3	New York	27.0
Wisconsin	31.2	Rhode Island	27.0
Tennessee	31.2	New Jersey	26.9
Iowa	30.9	Montana	26.4
Delaware	30.7	Connecticut	26.3
Michigan	30.7	Florida	26.2
Georgia	30.5	Utah	25.7
Missouri	30.2	Vermont	24.8
Nebraska	30.2	California	24.7
Pennsylvania	30.2	Massachusetts	23.3
South Dakota	29.8	Hawaii	22.1
Alaska	29.7	District of Columbia	21.7
North Carolina	29.7	Colorado	21.3
Maryland	29.6		

Source: Nutrition, Physical Activity and Obesity Data, Trends and Maps web site. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC), National Center for Chronic Disease Prevention and Health Promotion, Division of Nutrition, Physical Activity and Obesity, Atlanta, GA, 2015 (CDC, 2015a).

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