



**REPORT ON TOBACCO USE RATING  
FOR HEALTH INSURANCE POLICIES**

**September 1, 2014**

**MSAR No. 9713**

For more information concerning this document, please contact:

Jonathan Kromm  
Deputy Executive Director  
Maryland Health Benefit Exchange  
750 East Pratt Street, 16th Floor  
Baltimore, MD 21202  
443-995-2969

Catherine Grason  
Director of Regulatory Affairs  
Maryland Insurance Administration  
200 St. Paul Place, Suite 2700  
Baltimore, MD 21202  
410-468-2201

People with disabilities may request this document in an alternative format.  
Requests should be submitted in writing to:

Director of Public Affairs  
Maryland Insurance Administration  
200 St. Paul Place, Suite 2700  
Baltimore, MD 21202  
410-468-2000  
800-492-6116  
800-735-2258 TTY

[www.mdinsurance.state.md.us](http://www.mdinsurance.state.md.us)

## TABLE OF CONTENTS

I. Executive Summary .....	5
II. Introduction .....	6
III. Background .....	6
A. Tobacco Use Rating and the ACA .....	6
B. State Utilization of Tobacco Use Rating .....	8
IV. Tobacco Use Rating in Maryland.....	8
A. Data from Plan Rate Filings .....	8
B. Data from Survey of Plans .....	9
V. Effect on Insurance Premiums Generally.....	10
VI. Effect on the Affordability and Purchase of Insurance, and Access to Health Care, for Tobacco Users .....	11
A. Methodology .....	11
B. Health Care Costs and Utilization.....	12
C. Costs Incurred .....	14
D. Changes in the Purchase of Insurance.....	15
E. Modeling the Effects of Maximum Premium Differentials on Maryland Individual Exchange Enrollment .....	18
F. Summary .....	21
VII. Disparate Impact on Specific Vulnerable Populations.....	21
A. Insurance Status .....	22
B. Racial and Ethnic Differences.....	22
C. Gender Differences .....	23
D. Geographic Differences.....	23
E. Age Differences .....	24
F. Income Differences .....	25
G. Educational Attainment.....	26
H. Activity Limitations .....	27
I. Health Status .....	27
J. Summary .....	28
VIII. Options for the State to Address Any Adverse Consequences of Tobacco Use Rating.....	28
A. Limit or Eliminate Tobacco Differentials in the State .....	28
B. Increase Maryland’s Anti-Smoking Activities.....	28
IX. Summary and Conclusions .....	28
Appendix 1: Chapter 159, Acts of 2013, Section 6 .....	30
Appendix 2: Data from MHBE Carriers’ Rate Filings .....	31
Appendix 3: Survey Instrument for Individual and Small Group Plans in the Exchange .....	37

Appendix 4: Expanded Model of the Effects of Tobacco Differentials on Premiums and Enrollment for Age and Income Groups .....	53
Appendix 5: Data Sources and Limitations .....	56
Appendix 6: List of Tobacco-Related Conditions Used to Identify Tobacco-Related Services and Costs .....	58
References.....	59

## **I. Executive Summary**

Section 6 of Chapter 159 of the 2013 Laws of Maryland directed the Maryland Health Benefit Exchange (MHBE) and the Maryland Insurance Administration (MIA) to conduct a joint study of the impact of the Affordable Care Act's (ACA's) allowance of a tobacco use rating of no more than 1.5 to 1. In accordance with this requirement, this report studies (1) the tobacco rating factor's effect on insurance premiums generally; (2) the tobacco rating factor's effect on the affordability and purchase of insurance, and access to health care, for tobacco users; and (3) any disparate impact on specific vulnerable populations. Section 6 of Chapter 159 further directs the MHBE and the MIA to assess options available to the State to address any adverse consequences of tobacco use rating.

The study found that, although permitted under Maryland law and federal regulations, tobacco premium differentials are not widely used by health plans currently participating in the MHBE and in the individual and small group markets outside of the MHBE. However, if tobacco premium differentials were more widely used, the impact on premiums and participation in the individual and small group markets would be significant for people who use tobacco. Because of age rating, insurance cost increases would be especially high among older tobacco users. If the maximum tobacco differential were applied at all ages, thousands of tobacco users would be likely to drop coverage through the Exchange. Those remaining would likely be users with the highest health care needs and costs.

Tobacco use is more prevalent among many potentially vulnerable populations, so an increased use of tobacco premium differentials would affect these populations disproportionately. The uninsured in particular have higher rates of tobacco use. Because the uninsured are the target of the policy interventions of the ACA, changes in Exchange plans' premiums due to tobacco rating are likely to make insurance unaffordable for many of the uninsured. Those who do purchase coverage at the higher tobacco-rated premiums are likely to have more health problems and higher costs.

Strategies to mitigate the potential adverse consequences of tobacco premium differentials include the following:

- (1) Limiting or eliminating tobacco differentials in the individual and small group markets. Seven states and the District of Columbia have eliminated tobacco premium differentials, and another four states have limited the maximum tobacco differential that may be charged to less than the federal maximum.
- (2) Increasing state investment in anti-tobacco policies. The Centers for Disease Control and Prevention (CDC) Office on Smoking and Health recommends state-specific expenditures in state and community interventions, health communication interventions, cessation interventions, surveillance and evaluation, and administration and management. However, in 2011 Maryland expended only 9.5 percent of the recommended "Best Practices" amount of \$63,000,000.

## **II. Introduction**

During the 2013 Legislative Session, the Maryland General Assembly passed House Bill 228 (Chapter 159, Acts of 2013), entitled the Maryland Health Progress Act of 2013.<sup>1</sup> Chapter 159 contains a variety of amendments and additions to the Health-General and Insurance Articles of the Maryland Code, intended to bring Maryland law into compliance with certain statutory and regulatory developments of the federal Affordable Care Act (ACA).

Section 6 of Chapter 159 requires the MHBE and the MIA to conduct a joint study of the impact of the ACA's allowance of a tobacco use rating of 1.5 to 1, including (1) its effect on insurance premiums generally; (2) its effect on the affordability and purchase of insurance, and access to health care, for tobacco users; and (3) any disparate impact on specific vulnerable populations. The study must further assess the options that may be available to the State to address any adverse consequences of tobacco use rating.

The MIA and the MHBE worked with The Hilltop Institute at the University of Maryland, Baltimore County to conduct this legislatively mandated study. This report contains the findings of the study and concludes with options for further legislative action.

## **III. Background**

### **A. Tobacco Use Rating and the ACA**

Section 2701 of the ACA<sup>2</sup> provides that beginning January 1, 2014, insurers may only vary premium rates in the non-grandfathered, individual and small group<sup>3</sup> markets by four factors:

- (1) Whether such plan or coverage covers an individual or family;
- (2) Geographic rating area;
- (3) Age, except that such rate shall not vary by more than 3 to 1 for adults; and
- (4) Tobacco use, except that such rate shall not vary by more than 1.5 to 1.

With respect to family coverage, the age and tobacco use rating factors must be applied based on the portion of the premium that is attributable to each family member covered under the plan.

Final regulations<sup>4</sup> interpreting the ACA's statutory requirements for rate variance were issued by the U.S. Department of Health and Human Services (HHS) on February 27,

---

<sup>1</sup> A copy of the pertinent sections of Chapter 159 is included in Appendix 1.

<sup>2</sup> Codified at 42 U.S.C. § 300gg(a)(1)(A).

<sup>3</sup> If a State permits health insurance issuers that offer coverage in the large group market in the State to offer such coverage through the State Exchange starting in 2017, then the premium variance limitations will also apply to such market in the State.

<sup>4</sup> "Patient Protection and Affordable Care Act; Health Insurance Market Rules; Rate Review; Final Rule," 78 FR 39, 13406 (February 27, 2013).

2013. On March 11, 2014, HHS issued final regulations regarding the benefit and payment standards for 2015.<sup>5</sup>

The regulations define “tobacco use” as “use of tobacco on average four or more times per week within no longer than the past 6 months. This includes all tobacco products, except that tobacco use does not include religious or ceremonial use of tobacco. Further, tobacco use must be defined in terms of when a tobacco product was last used.”<sup>6</sup> Tobacco rating may only be applied with respect to individuals who may legally use tobacco under federal and state law.<sup>7</sup> An individual’s tobacco use is self-reported by the person completing the application. This definition may not be understood by the applicant. If the application is completed on behalf of others in the household, the applicant may not know about tobacco use.

States may establish a ratio narrower than 1.5:1 in connection with establishing rates for individuals; alternatively, states may prohibit rating based on tobacco use altogether with approval from the Centers for Medicare and Medicaid Services (CMS).<sup>8</sup> States or issuers have flexibility within the statutory limits (maximum variance of 1.5:1) to determine the appropriate tobacco rating factor for different age groups (e.g., younger enrollees could be charged a lower tobacco use factor than older enrollees within these limits).<sup>9</sup>

In the small group market, issuers are required to calculate rates for employees and dependents on a per-member basis and calculate the group premium by totaling the premiums attributable to each individual.<sup>10</sup> Per-member rating assures compliance with the requirement that age and tobacco rating only be apportioned to an individual family member’s premium.<sup>11</sup> Issuers may also use a composite premium, basing small group premiums on the average premium for each employee in the group as long as the total group premium equals the premium that would be derived through the per-member rating approach.

The 2015 benefit and payment parameter final rule added a provision that an insurer offering composite premiums must use a two-tiered composite premium structure and calculate two separate composite premiums for individuals aged 21 years or older and individuals under the age of 21 years.<sup>12</sup> Any ratings for tobacco use must be applied per member and cannot be included in a composite premium for all enrollees.<sup>13</sup>

In the small group market, an issuer may only impose a tobacco rating factor in connection with a health-contingent wellness program meeting the nondiscrimination

---

<sup>5</sup> “Patient Protection and Affordable Care Act; HHS Notice of Benefit and Payment Parameters for 2015; Final Rule,” 79 FR 47, 13744 (March 11, 2014).

<sup>6</sup> See 45 C.F.R. 147.102(a)(1)(iv).

<sup>7</sup> *Id.*

<sup>8</sup> See 45 C.F.R. 147.103 and 78 FR 39 at 13414.

<sup>9</sup> See 78 FR 39 at 13413.

<sup>10</sup> See 45 C.F.R. 147.102(c)(3)

<sup>11</sup> See 45 C.F.R. 147.102(c).

<sup>12</sup> See 45 C.F.R. 147.102(c)(3)(B). See also 79 FR 47 at 13751.

<sup>13</sup> See 45 C.F.R. 147.102(c)(3)(C).

requirements of Section 2705 of the Public Health Service Act (PHSA).<sup>14</sup> Health insurance issuers in the small group market are required to offer a tobacco user the opportunity to avoid paying the full amount of the tobacco rating factor if he or she participates in a wellness program meeting the standards of Section 2705 and its implementing regulations.<sup>15</sup>

## B. State Utilization of Tobacco Use Rating

According to CMS,<sup>16</sup> seven states (California, Connecticut, Massachusetts, New Jersey, New York, Rhode Island, and Vermont) plus the District of Columbia have eliminated tobacco use as a permissible rating factor for calendar year (CY) 2014 and 2015.<sup>17</sup> An additional four states have modified the allowable tobacco rating ratios from the federal standard, as shown in Table 1.

**Table 1: Modified Tobacco Rating Ratios by State**

State	Individual Market	Small Group Market
Arkansas	1.2:1	1.2:1
Colorado	1.15:1	1.15:1
Kentucky	1.4:1	1.4:1
Oregon	1.5:1	1.5:1*

\*CMS cites Oregon Revised Statutes 743.737(11) that small group plans are limited to overall variation in rates (including other rating factors) of 3:1.

## IV. Tobacco Use Rating in Maryland

### A. Data from Plan Rate Filings

Consistent with the ACA, Maryland presently allows carriers to utilize tobacco use rating at a ratio less than or equal to 1.5 to 1. Appendix 2 of this report shows three tables of data from the 2014 rate filings with the MIA on the utilization of tobacco use rating in the individual and small group markets in Maryland.

The first table contains:

- A list of carriers who filed rates in the Maryland individual or small group markets for 2014;
- The market share of each carrier in each market;
- Whether or not the carrier employed tobacco use rating; and

<sup>14</sup> 45 C.F.R. 147.102(a)(1)(iv). *See also* 78 FR 39 at 13413. Section 2705 of the PHSA is further discussed in Section VIII(C) of this report.

<sup>15</sup> *See* 78 FR 39 at 13414.

<sup>16</sup> The Center for Consumer Information and Insurance Oversight, “Market Rating Reforms: State Specific Rating Variations,” updated August 19, 2014. Available online: <http://www.cms.gov/CCIIO/Programs-and-Initiatives/Health-Insurance-Market-Reforms/state-rating.html>.

<sup>17</sup> Personal communication Doug Pennington, Director, Rate Review Division Oversight Group – CCIIO, July 2, 2014.



- Sample silver plan tobacco and non-tobacco rates for a 25-year-old and 50-year-old living in the Baltimore Metropolitan region.

Only three individual market carriers applied tobacco ratings, and those carriers' total share of the individual market is small, adding up to only slightly more than 5 percent. The carriers in the remaining 95 percent of the individual market do not apply tobacco rating. In the small group market, five carriers that covered 53.6 percent of the market applied tobacco ratings. In both the individual and small group markets, however, the actual number of enrollees subject to the tobacco differential is a smaller fraction of those covered lives, as shown in Table 2 on the following page.

The second table in Appendix 2 displays the age-specific tobacco premium differentials by age for the carriers using tobacco rating factors. The third table in Appendix 2 shows the tobacco rating factor used by carriers in the small group market according to enrollee age.

## **B. Data from Survey of Plans**

In June 2014, The Hilltop Institute, the MIA, and the MHBE developed a survey to determine the current prevalence of tobacco-rated policies and enrollment in individual and small group plans. Plans were asked to provide enrollment data, in terms of covered lives in rated and non-rated plans, as of June 1 or their most recent date of available data. The survey requested information on age, gender, income ranges, race and ethnicity, and county of residence. However, not all plans were able to supply information at the level of detail requested. In particular, information on race, ethnicity, and income generally was not available.

Most enrollees were in plans that did not use tobacco rating at all. Those who were enrolled in tobacco-rated plans made up a small percentage of total enrollees (0.12 percent of the individual market and 0.41 percent of the small group market). Because of the small number of persons subject to tobacco rating—142 in the individual market and 470 in the small group market—and the possibility that many smokers are enrolled in plans that do not use tobacco rating, differences in the prevalence of tobacco rating observed in the survey should be interpreted with caution.

With that caveat, data from the survey on the number and percentage of persons with and without tobacco rating are displayed in Table 2. As a percentage of total enrollment, tobacco rating was more than three times as common in small group plans than in individual plans. Males were about twice as likely as females to be subject to tobacco rating in both the individual and small group markets. In both markets, persons aged 18 to 39 years were most likely to be in tobacco-rated plans. The use of tobacco rating declined among older age groups in the individual market. Differences in the distributions of tobacco rating were seen between the individual and small group markets among the MIA's premium rating regions. Although the Washington DC Metropolitan region had the highest percentage of tobacco rating in the individual market, it had the lowest percentage in the small group market. Conversely, Eastern and Southern Maryland had the lowest percentage of tobacco rating in the individual market but the highest percentage in the small group market.

**Table 2: Distribution of Covered Lives in Individual and Small Group Markets, by Demographic Characteristics and Region, June 2014**

	Individual Market			Small Group Market		
	Tobacco Rated	Not Tobacco Rated	Percentage Tobacco Rated	Tobacco Rated	Not Tobacco Rated	Percentage Tobacco Rated
<b>Total</b>	142	113,233	0.13%	470	112,445	0.42%
<b>Gender</b>	Individual Market			Small Group Market		
	Tobacco Rated	Not Tobacco Rated	Percentage Tobacco Rated	Tobacco Rated	Not Tobacco Rated	Percentage Tobacco Rated
Male	89	52,587	0.17%	317	58,287	0.54%
Female	53	60,646	0.09%	153	54,145	0.28%
<b>Age Group (years)</b>	Individual Market			Small Group Market		
	Tobacco Rated	Not Tobacco Rated	Percentage Tobacco Rated	Tobacco Rated	Not Tobacco Rated	Percentage Tobacco Rated
0-17*	0	11,787	0.00%	0	24,370	0.00%
18-39	89	40,455	0.22%	218	36,817	0.59%
40-54	33	34,993	0.09%	156	32,862	0.47%
55-64	20	24,948	0.08%	87	18,375	0.47%
65 and older	0	1,050	0.00%	8	3,946	0.20%
*Tobacco Rating Not Allowed For Persons Under Legal Age for Tobacco Use						
<b>Rating Region</b>	Individual Market			Small Group Market		
	Tobacco Rated	Not Tobacco Rated	Percentage Tobacco Rated	Tobacco Rated	Not Tobacco Rated	Percentage Tobacco Rated
Baltimore Metro	55	43,266	0.13%	230	46,699	0.49%
Eastern and Southern MD	3	12,388	0.02%	136	19,827	0.68%
Washington DC Metro	79	46,631	0.17%	18	21,760	0.08%
Western MD	6	10,792	0.06%	34	13,000	0.26%

Source: Survey of Maryland Exchange Issuers

## V. Effect on Insurance Premiums Generally

Regardless of whether or not a carrier employs a tobacco use rating factor, all carriers must collect enough premium to pay for tobacco-related claims, and the rating factors used have to be revenue-neutral. Federal requirements for tobacco rating require that the revenues obtained from the tobacco surcharge be used to reduce the base premium. Therefore, a carrier's use of a tobacco rating factor should have minimal or no impact on

*total* insured premium; however, *individual* premium costs may vary for insured individuals who use tobacco if a carrier elects to utilize tobacco rating.

Carriers utilizing tobacco rating assign costs associated with tobacco use to actual users. In this case, tobacco users see higher individual premiums than non-tobacco users. Carriers that do not use a tobacco rating factor spread tobacco claim costs across all insured individuals (including non-users), resulting in consistent premium rates between tobacco users and non-tobacco users.

## **VI. Effect on the Affordability and Purchase of Insurance, and Access to Health Care, for Tobacco Users**

Limited data make direct measures of affordability, purchase, and access difficult. Effects of the tobacco rating differentials on affordability and purchase of insurance are difficult to measure in part because the differentials represent relative changes in the cost of insurance premiums, which vary by insurance carrier and by their individual rating characteristics for age and region. Furthermore, definitions of affordability are somewhat subjective. Under the ACA, for example, if premiums for the lowest-cost bronze level plan on a state exchange exceed 8 percent of annual income, that coverage is considered unaffordable.<sup>18</sup> This, however, is a legal standard—not an absolute measure of affordability. When affordability is measured as a percentage of income rather than as a change in absolute premium costs, it becomes more difficult to estimate the relative rate of change in insurance take-up rates. One study (Kaplan et al., 2014), using the relative income share of health insurance premiums at different levels of poverty, estimated that in 13 out of 36 states, a hypothetical 45-year-old smoker with an income of \$35,000 would not be able to find affordable coverage.

Likewise, potential changes in access to health care would be difficult to measure because insurance coverage is only one element of access. Hilltop examined data sources that include incidence of tobacco-related illness and estimates of the costs of smoking across the individual insured population before the launch of the state’s marketplace, Maryland Health Connection. This analysis allows an estimate of the utilization of services by tobacco users and the potential effects on premiums if insurance premiums could be based on these costs. Using this information, Hilltop estimated the effects of imposing the maximum allowed premium differential of 50 percent on the Exchange population; in effect, estimating the outcomes of the most extreme scenario for the marketplace.

### **A. Methodology**

To assess the affordability and purchase of insurance, Hilltop first compiled data on the use and cost of health services for smokers and non-smokers in the individual insurance market. The differential in costs would illustrate the potential differences in premiums need to cover those costs if tobacco premium differentials were used. Next, actual premiums in Maryland’s individual and small group markets are used to illustrate the impact of the 50 percent maximum tobacco differential on premium costs relative to various income levels,

---

<sup>18</sup> 26 CFR §1.5000A-3(e).

using 8 percent of income as a threshold for affordability of individual market premiums. These estimates represent a worst-case scenario for the implementation of premium differentials because only one carrier in Maryland is currently charging 50 percent differentials, and only for the highest age group. Finally, we estimated the potential number of persons who would drop coverage on the Exchange if the highest premium differentials were charged.

## **B. Health Care Costs and Utilization**

Hilltop obtained data on members of individual insurance plans from the Maryland Health Care Commission (MHCC) for CY 2012. The MHCC data are the most recent available source of cost and utilization data in Maryland for all insurers offering individual insurance plans. These data represent the private insurance market before the development of the MHBE and the implementation of ACA-related insurance market reforms. Hence, these data reflect a population that could have experienced individual underwriting, that excluded tobacco users, or was charged tobacco premium differentials higher than that currently allowed.

Because there was no explicit indicator of who was a tobacco user in the claims data from MHCC, Hilltop measured the prevalence and costs of smoking in two different ways using diagnosis and procedure codes. First, Hilltop identified “tobacco dependency” using a narrow definition that explicitly indicated that the enrollee was either dependent on tobacco or receiving tobacco cessation services.<sup>19</sup> Second, a broader definition of tobacco-related health care utilization included the codes in the first definition but expanded on that list to include tobacco-related health conditions as presented in the Surgeon General’s 2014 report, *The Health Consequences of Smoking* (U.S. Department of Health and Human Services, 2014).<sup>20</sup> However, the conditions may have been incurred through causes other than smoking, as well as second-hand exposure to smoke. Therefore, codes used in health insurance claims data for these conditions cannot be used to uniquely identify consequences of smoking.

The analysis of the MHCC data was restricted to services for individual market health plan enrollees younger than 65 years who were covered for the full 12 months of CY 2012. The purpose of this restriction was to represent a population that might be used to determine annual premiums in the individual market. In the 2012 MHCC data set, 147,153 persons met these criteria.

The prevalence of tobacco dependency and tobacco-related health conditions among the individually insured population in Maryland is shown in Table 3. Using the narrow measure, about 2 percent of the individual-insured in 2012 were diagnosed as tobacco-

---

<sup>19</sup> These conditions and services are listed in Appendix 6.

<sup>20</sup> U.S. Department of Health and Human Services. *The Health Consequences of Smoking—50 Years of Progress. A Report of the Surgeon General*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014. Printed with corrections, January 2014. <http://www.surgeongeneral.gov/library/reports/50-years-of-progress/full-report.pdf>, p. 652

dependent, while nearly 9 percent of those individual-insured were diagnosed with the broader definition including tobacco-related conditions.

**Table 3: Number and Percentage of the Individually Insured Population in Maryland with Health Insurance Claims Indicating Tobacco Dependency or Tobacco-Related Conditions, 2012**

Measure	Number of Persons	Percentage of Total
Tobacco Dependency	2,987	2.0%
Tobacco-Related Conditions	12,908	8.8%

Source: The Hilltop Institute tabulations of MHCC All Payer Claims Database data for individual insurance plans.

The prevalence of both tobacco dependency and tobacco-related conditions increased with age, as seen in Table 4. Diagnoses of tobacco dependency were trivially small among those aged 0 to 17 years but increased to 3.1 percent among persons aged 46 to 64 years. The prevalence of tobacco-related conditions among those aged 30 years and younger—roughly 5 percent—reflects the inclusion of lung conditions among the list of conditions in the definition; higher rates among older populations represent the development of cancer and conditions related to the heart and circulatory system.

**Table 4: Percentage of the Individually Insured Population in Maryland with Health Insurance Claims Indicating Tobacco Dependency or Tobacco-Related Conditions, by Age, 2012**

Measure	Age Group (Years)				
	0-17	18-30	31-45	46-64	Total
Tobacco Dependency	0.1%	1.8%	2.4%	3.1%	2.0%
Tobacco-Related Conditions	5.1%	5.3%	8.3%	13.0%	8.8%

Source: The Hilltop Institute tabulations of MHCC All Payer Claims Database data for individual insurance plans.

Differences among the geographic insurance rating territories defined in Maryland<sup>21</sup> diverged somewhat from the state averages. The Washington DC Metropolitan region had a lower than average prevalence of tobacco dependency and tobacco-related conditions, while the Eastern and Southern Maryland regions had higher prevalence rates. The Baltimore

<sup>21</sup> Md. Insurance Code Ann. § 15-1205(a)(2)(ii).

“Baltimore Metropolitan region” includes Baltimore City and Baltimore, Harford, Howard, and Anne Arundel Counties.

“Eastern and Southern Maryland” includes St. Mary's, Charles, Calvert, Cecil, Kent, Queen Anne's, Talbot, Caroline, Dorchester, Wicomico, Somerset, and Worcester Counties.

“Washington DC Metropolitan region” includes Montgomery and Prince George's Counties.

“Western Maryland” includes Garrett, Allegany, Washington, Carroll, and Frederick Counties. <http://www.mdinsurance.state.md.us/sa/docs/documents/insurer/bulletins/bulletin-13-08-geographicratingareas.pdf>.

Metropolitan and Western Maryland regions had roughly the same prevalence of tobacco dependency and tobacco-related conditions.

**Table 5: Percentage of the Individually Insured Population in Maryland with Health Insurance Claims Indicating Tobacco Dependency or Tobacco-Related Conditions, by Region, 2012**

Measure	Region				
	Baltimore Metro	Eastern and Southern Maryland	Washington DC Metro	Western Maryland	Total
Tobacco Dependency	2.2%	3.3%	1.2%	2.4%	2.0%
Tobacco-Related Conditions	9.1%	10.6%	7.7%	8.9%	8.8%

Source: The Hilltop Institute tabulations of MHCC All Payer Claims Database data for individual insurance plans.

Race and ethnicity were frequently not reported by insurance carriers and are therefore not reliably populated in the MHCC data under review, so additional classifications of tobacco dependency and tobacco-related conditions are not available.

### C. Costs Incurred

The cost of health care services incurred among those identified as tobacco-dependent or with tobacco-related conditions—including institutional services, professional services, and prescription drugs—is higher than the cost of the same services for individuals without such conditions in the Maryland insurance market.<sup>22</sup> Both the mean and median spending are reported in the tables below because the calculation of mean spending can be skewed by a few individuals with extremely high costs. Nonetheless, both mean and median costs for persons with tobacco-related conditions are about four times the amount for those without such conditions. Those who were identified as both tobacco-dependent and having tobacco-related conditions<sup>23</sup> had the highest mean and median costs: approximately 7 times the mean cost and 9 times the median cost of persons without such conditions.

**Table 6: Mean and Median Health Care Costs for Persons Aged 0-64 Years Identified with Tobacco Dependency and Tobacco-Related Conditions, Maryland Individual Insurance Market, 2012**

Tobacco Status		Mean	Median
No Tobacco Dependency	No Tobacco-Related Conditions	\$1,718	\$446
No Tobacco Dependency	Tobacco-Related Conditions	\$9,160	\$2,381
Tobacco Dependency	Tobacco-Related Conditions	\$12,729	\$3,859

Source: The Hilltop Institute tabulations of MHCC All Payer Claims Database data for individual insurance plans.

<sup>22</sup> Cost is based on the sum of insurers' reimbursement amounts and patient liability for services.

<sup>23</sup> Since the coding on claims for tobacco dependency was a subset of the codes for tobacco-related conditions, the category for tobacco dependency without tobacco-related conditions does not exist.

Further analysis shows that costs increase with the age of the person with tobacco-related conditions but less so for persons with no tobacco dependency or tobacco-related conditions. The median annual health care costs for persons without tobacco dependency or tobacco-related conditions ranges from about \$300 to \$600, compared to a range of \$1,000 to \$3,000 for persons with tobacco-related conditions and \$3,000 to \$6,000 for persons with both tobacco dependency and tobacco-related conditions.<sup>24</sup>

**Table 7: Mean and Median Health Care Costs for Persons Aged 0-64 Years Identified with Tobacco Dependency and Tobacco-Related Conditions, Maryland Individual Insurance Market, 2012, by Age Group**

Tobacco Status		Age Group (Years)	Mean	Median
No Tobacco Dependency	No Tobacco-Related Conditions	0-17	\$1,108	\$415
		18-30	\$1,579	\$316
		31-45	\$1,983	\$468
		46-64	\$2,023	\$552
No Tobacco Dependency	Tobacco-Related Conditions	0-17	\$4,897	\$1,137
		18-30	\$8,873	\$2,091
		31-45	\$9,311	\$2,450
		46-64	\$10,438	\$2,995
Tobacco Dependency	Tobacco-Related Conditions	0-17	\$13,276	\$6,143
		18-30	\$8,748	\$2,843
		31-45	\$9,636	\$3,248
		46-64	\$15,398	\$4,599

Source: The Hilltop Institute tabulations of MHCC All Payer Claims Database data for individual insurance plans.

Consideration of the prevalence and costs of tobacco use and conditions is important to the development of actuarially sound premium rates for insurance plans. As discussed earlier, a plan’s choice not to impose a tobacco differential spreads tobacco-related health care costs across the entire insured population. A tobacco premium differential would impose the higher health care costs on tobacco users but would offer an opportunity to lower costs for non-tobacco users. In terms of affordability, purchase, and access to care, it is difficult to determine how these two opposing tendencies would balance—that is, whether a tobacco differential would reduce premiums sufficiently for more non-tobacco users to purchase insurance, compared with the number of tobacco users who would be discouraged from purchasing coverage due to the cost of the differential.

#### **D. Changes in the Purchase of Insurance**

“Price elasticity of demand” is a measure used in economics to show the responsiveness of the quantity demanded of a good or service to a change in its price.

<sup>24</sup> The high mean and median costs for those aged 0-17 reflect the small number of such individuals identified as tobacco-dependent.

Estimates of price elasticity of demand for insurance can provide insight into estimating changes in insurance purchase compared to increases or decreases in prices. A review of the literature on price elasticity of demand found that elasticity estimates for individually purchased health insurance (Liu and Chollet, 2006) ranged from  $-0.2$  to  $-0.6$ ; that is, a 1 percent change in price would reduce the number of policies purchased by between 0.2 and 0.6 percent. It should be noted that the elasticity estimates are based on observations of the individual insurance market before ACA reforms and the mandatory coverage provisions. Those changes may have reduced the elasticity of demand for individual health insurance, but it would be impossible to determine without research comparing marketplace coverage levels each year.

A low-income tobacco user with a high subsidy might experience a very large price change in percentage terms because the premium differential is based on the *unsubsidized* premium amount. Table 8 shows the effect of the full 50 percent differential on the premium for the second-lowest cost silver metal level premium in the MHBE—on which the subsidy amount is based—for persons receiving subsidies at 200 percent of the federal poverty level (FPL). This corresponded to \$22,980 in 2013, the year on which subsidy amounts are calculated. In this example, it is assumed for simplicity that the base premium amounts do not change as a result of the carriers imposing a tobacco use premium differential. Later in this report, Table 10 will show how the base premium for non-tobacco users might change when the tobacco differential is applied at various levels.

In Table 8, Column C shows the net annual premium after subsidies (i.e., what would be charged to a non-tobacco user), and Column D indicates that this level of premium represents 6.4 to 6.5 percent of a person's annual income at 200 percent of the FPL. Column E shows the calculation of the 50 percent premium differential based on the unsubsidized premium amount in Column A. In Column F, the new total premium for tobacco users is shown as the sum of the subsidized premium in Column B plus the tobacco differential in Column E. The amount in Column G is the Column E amount represented as a percentage of the 200 percent FPL income. In this example, the tobacco premium differential would drive the cost above the 8 percent threshold of affordability. Moreover, the effect of the tobacco differential compounds with age, as the base annual premium is allowed to change for different age levels. Hence, the effects of the tobacco differential are worse for older enrollees with lower incomes. The survey of carriers found that persons aged 55 to 64 years made up 22 percent of the individual market. Column G demonstrates that the premium for a 64-year-old tobacco user with an income of 200 percent of the FPL would be 20.6 percent of that person's annual income, but a lesser share of income for younger persons. Column H shows the relative increase in the total premium for a tobacco user, ranging from 74 to 218 percent.



**Table 8: Maryland BlueChoice\* Silver \$2,000 Deductible Plan and Hypothetical Effects of Maximum Tobacco Premium Differentials on Premiums as a Percentage of Income**

A	B	Non Tobacco User		Tobacco User			H
		C	D	E	F	G	
Age (years)	Base Annual Premium	Subsidized Annual Premium	Percentage of \$22,980 Annual Income at 200% FPL, Subsidized Premium	Tobacco Differential =0.5*Base Annual Premium [Col B * 0.5]	Total Premium = Subsidized Premium + Tobacco Differential [Col C + Col E]	Percentage of \$22,980 Annual Income at 200% FPL of Total Premium including Tobacco Differential [Col F ÷ \$22,980]	Change in Premium [Col F ÷ Col C] -1
25	\$2,172	\$1,463	6.4%	\$1,086	\$2,549	11.1%	74%
45	\$3,120	\$1,469	6.4%	\$1,560	\$3,029	13.2%	106%
64	\$6,492	\$1,491	6.5%	\$3,246	\$4,737	20.6%	218%

\* BlueChoice is currently *not* charging the tobacco premium differential. This table serves to illustrate a hypothetical scenario. Source: The MIA and The Hilltop Institute estimates.

The changes in premiums as a percentage of income in Table 8 are only a hypothetical illustration of the effect of using the maximum allowable 50 percent differential.<sup>25</sup> As shown in Appendix 2, tobacco premium differentials for 2014 in Maryland vary with age, and only one plan charges the maximum differential of 50 percent for persons aged 53 years and older. Because of changes to the MHBE's Maryland Health Connection IT System, issuers may not charge tobacco premium differentials for non-grandfathered plans sold in the individual market inside and outside the Exchange in 2015.<sup>26</sup> This hiatus in charging tobacco differentials may allow future research to compare the relative take-up rates for tobacco-rated and non-rated policies across the two years.

### **E. Modeling the Effects of Maximum Premium Differentials on Maryland Individual Exchange Enrollment**

Table 9 illustrates a simple model of the potential change in MHBE participation if all plans used a 50 percent tobacco premium differential at all ages. As detailed in Section C of this report, data from the Behavioral Risk Factor Surveillance Survey (BRFSS) estimate that approximately 160,000 Marylanders lacked health insurance and used tobacco in 2012. According to the BRFSS—an annual survey sponsored in every state by the Centers for Disease Control and Prevention (CDC) to measure the prevalence of the health characteristics and individual behaviors and practices that affect health—about 90,000 uninsured tobacco users have annual incomes below \$25,000. Since the BRFSS does not have information to allow calculating the number of people with income below the percentage of the FPL making them eligible for Medicaid, for the purpose of this model, we assumed that half of those with income under \$25,000 (45,000 people) are Medicaid-eligible. About 115,000 tobacco users who could enter into the Exchange marketplace would remain. Based on the premium changes calculated for persons at 200 percent of the FPL in Table 8 and the number of smokers in each age group calculated from the BRFSS, Table 9 provides an estimate of change in enrollment. Using a price elasticity of -0.4 (midway between the range of individual market elasticity estimates of -0.2 to -0.6 from Liu and Chollet, 2006),<sup>27</sup> about 46,000 participants would forgo coverage, leaving about 69,000 tobacco users who would be likely to obtain coverage through the MHBE. However, those participating in the Exchange at the higher premium levels are also likely to have higher health care needs than those who exited the market, driving up the average expected costs of care and therefore adding upward price pressure on premiums.

---

<sup>25</sup> Appendix 3 shows a more detailed example of the effects of premium differentials at varying income levels.

<sup>26</sup> Because the IT system will not have the capability to apply tobacco premium differentials for plans sold inside the Exchange and because of the ACA requirement for non-grandfathered individual and small group plans to use a single risk pool, tobacco premium differentials will not be charged for non-grandfathered individual plans in 2015. 42 U.S.C. § 18032(c)

<sup>27</sup> Appendix 4 includes models of enrollment change for price elasticity estimates of -0.2 and -0.6.

**Table 9: Estimated Change in MHBE Enrollment with a Tobacco Premium Differential of 50 Percent**

A	B	C	D	E
Age Group (years)	Persons	Percentage Premium Increase with 50% Tobacco Differential [From Table 8]	Percentage Giving Up Coverage, Assuming Elasticity of -0.4 [-0.4 * Col C]	Number of Persons Giving Up Coverage Assuming Elasticity of -0.4 [Col D * Col B]
18 to 34	61,000	74%	30%	18,056
35 to 54	42,000	106%	42%	17,808
55 to 64	12,000	218%	87%	10,464
Total	115,000			46,328
Number of Tobacco Users Remaining				68,672

Source: The Hilltop Institute estimates.

Moreover, maintaining the actuarial soundness of premiums would reduce premiums for non-tobacco users. The elasticity estimates may remain the same, but the reduction in price would encourage a higher take-up rate among non-tobacco users. However, because these savings are spread across a larger population of non-tobacco users, the reductions in non-user premiums are not proportionate.

Table 10 illustrates the effect of various tobacco premium differentials on a hypothetical insurance pool with a membership of 10,000, of whom 20 percent are tobacco users. This example excludes the effects on premiums of income-related premium subsidies, any administrative costs, and any differentials due to age or geographic rating. Costs for tobacco users and non-users are assumed equal to the mean expenditures of each group taken from the MHCC individual insurance plan data. Health expenditures for this insurance pool would total about \$33.7 million: \$13.7 million for non-tobacco users and \$20 million for tobacco users.

Table 10 illustrates three scenarios. Scenario 1 shows that if there were no tobacco premium differentials, premiums for the two groups would be equal at \$281 a month. In the second scenario, a 20 percent tobacco differential is applied, and premiums for the tobacco users would rise to \$337 a month. This premium would generate \$6.7 million in revenue to the pool. To maintain the same \$33.7 million in revenue to fund expenditures for the entire pool, non-tobacco users premiums would fall to \$267 a month, a reduction of 5 percent. In the third scenario, using a tobacco premium differential of 50 percent, tobacco users' premiums would rise to \$421 a month, while non-users premiums would fall to \$246 a month, a reduction of 13 percent. Revenue from the tobacco users would total \$10.1 million (still less than the \$20 million in actual health expenditures), while revenues from non-users' premiums would total \$23.6 million.

**Table 10: Changes in Premium Levels with Changes in Tobacco Premium Differential for Hypothetical Insurance Pool**

	<b>Membership</b>	<b>Mean Annual Expenditures</b>	<b>Total Costs (\$ millions)</b>	<b>Scenario 1: Uniform Premium</b>	<b>Total Premium Revenue Scenario 1 (\$ millions)</b>	<b>Scenario 2: 20% Tobacco Factor</b>	<b>Total Premium Revenue Scenario 2 (\$ millions)</b>	<b>Scenario 3: 50% Tobacco Factor</b>	<b>Total Premium Revenue Scenario 3 (\$ millions)</b>
Non-Tobacco Users	8,000	\$1,718	\$13.7	\$281	\$27.0	\$267	\$25.6	\$246	\$23.6
Tobacco Users	2,000	\$9,985	\$20.0	\$281	\$6.7	\$337	\$8.1	\$421	\$10.1
Total	10,000		\$33.7		\$33.7				\$33.7
Non Tobacco User Premium Reduction						-5%		-13%	

Source: The Hilltop Institute estimates.

## **F. Summary**

This section presents data on the prevalence and costs of tobacco dependency and tobacco-related health conditions in the individual insurance market during 2012. In 2012, before the implementation of reforms to the individual insurance market, persons with tobacco dependency made up about 2 percent—and those with tobacco-related conditions made up about 8 percent—of the individual insurance market. Health care costs for persons with these conditions were substantially higher than for those without the conditions. Those who were identified as both tobacco-dependent and having tobacco-related conditions had the highest mean and median costs—approximately 7 times the mean costs and 9 times the median cost of persons without such conditions.

This section also presents models of the effects of the maximum possible tobacco premium differentials of 50 percent on the total premiums paid by tobacco users. Because tobacco premium differentials are calculated on premiums before income-related subsidies are applied, the effects of the differential on total premiums are greater for persons with lower incomes and at older ages. Estimated premium price changes were then used to predict potential changes in Exchange plan take-up rates. In the case of a 50 percent differential, the number of potential enrollees in the Exchange could fall from between 20,000 and 60,000 individuals.

## **VII. Disparate Impact on Specific Vulnerable Populations**

This section compares usage rates of tobacco products among various subpopulations that have been vulnerable to disparities in the access and use of health services. Data on tobacco use rates for these populations come from analysis of the BRFSS.

Few plans in Maryland’s individual and small group markets have imposed tobacco premium differentials on plan enrollees, and most market participants are enrolled in plans that do not differentiate between tobacco users and non-users. Nonetheless, the BRFSS data show that, if tobacco premium differentials were used more widely or more frequently applied at the maximum level of 50 percent, then vulnerable populations would be more severely affected.

The BRFSS “monitor[s] state-level prevalence of the major behavioral risks among adults associated with premature morbidity and mortality.”<sup>28</sup> The 2012 BRFSS data from Maryland are the most recently available to show differences in the prevalence of tobacco use<sup>29</sup> among potentially vulnerable subpopulations. However, because the BRFSS is subject to sampling variation, it is an estimate of population totals and might deviate from actual population data. The survey is limited to adults aged 18 or greater. For this analysis, Hilltop used findings for only the population aged 18 to 64 years to best represent participants in the individual Exchange.

---

<sup>28</sup> “About the Behavioral Risk Factor Surveillance System (BRFSS),” downloaded July 21, 2014, from [http://www.cdc.gov/brfss/about/about\\_brfss.htm](http://www.cdc.gov/brfss/about/about_brfss.htm).

<sup>29</sup> BRFSS data tabulated in this section combine responses to questions about cigarette smoking and smokeless tobacco to obtain a measure of any tobacco use.

In 2011 according to the BRFSS, nearly 900,000 (20.4 percent of) Maryland residents aged 18 to 64 years used tobacco products (Table 11). In 2012, the BRFSS measured 761,000 (17.5 percent) who were tobacco product users. Although this difference seems to suggest that tobacco use has been decreasing in Maryland, it is also possible that there was only a one-time deviation in data. Comparing data from a longer time period would confirm whether there truly is a decline in tobacco use; however, because of changes to the survey methodology in 2011, the CDC does not recommend comparing findings after 2011 with previous years, and the latest available survey data are from 2012.

### A. Insurance Status

Table 11 compares tobacco use rates between populations who are with and without insurance coverage according to the responses to the BRFSS survey. Individuals who were uninsured were substantially more likely to use tobacco than individuals who had insurance. Specifically, in 2011, 35.3 percent of uninsured—but only 18.2 percent of insured—Marylanders used tobacco. In 2012, tobacco use rates declined in both populations: to 27.6 percent among the uninsured and 15.9 percent of the insured.

**Table 11: Number and Percentage of Maryland Residents Aged 18-64 Using Tobacco Products, by Insurance Status, CY 2012 and CY 2011**

Year	Insurance Status	Total	Number Using Tobacco Products	Percentage Using Tobacco Products
2012	Insured	3,794,812	605,188	15.9%
	Uninsured	565,957	155,982	27.6%
	Total	4,360,769	761,170	17.5%
2011	Insured	3,816,272	695,309	18.2%
	Uninsured	569,573	201,052	35.3%
	Total	4,385,845	896,361	20.4%

Source: The Hilltop Institute tabulations of the BRFSS.

Because one of the target populations for the MHBE is the uninsured, and the differences are so distinctive, Tables 12 through 19 provide separate estimates for insured and uninsured within other subgroups. In Tables 12 through 19, Hilltop combined data from the 2011 and 2012 BRFSS surveys to produce more precise estimates of small groups (Doescher et al., 2003). Combining two years of survey data allowed for a greater number of survey respondents within each sub-classification, and the data effectively represent the population average over the two years. However, there are remaining cases in which apparent differences between the numbers and percentages in the survey data cannot be determined to reflect actual population differences. These cases are marked with an asterisk (\*) to indicate that the differences are not statistically significant.

### B. Racial and Ethnic Differences

The impact of tobacco premium differentials may differ among historically underserved racial and ethnic groups. As shown in Table 12, tobacco use in Maryland is highest among uninsured whites, at 44.0 percent, or about 90,000 people. Tobacco use falls to 29.6 percent among uninsured blacks. Differences between insured and uninsured

Hispanics and other races were not statistically significant. The difference between insured whites and blacks was smaller: 20.4 percent of insured whites and 17.7 percent of insured blacks used tobacco.

**Table 12: Number and Percentage of Tobacco Users among Racial and Ethnic Groups in Maryland, by Insurance Status, CY 2011-2012**

Race/Ethnic Group	Insurance Status	Total	Number Using Tobacco Products	Percentage Using Tobacco Products
White Non-Hispanic	Insured	1,730,702	353,195	20.4%
	Uninsured	197,561	86,988	44.0%
Black Non-Hispanic	Insured	897,281	158,555	17.7%
	Uninsured	169,141	50,104	29.6%
Hispanic	Insured	161,782	16,553	10.2%*
	Uninsured	138,024	27,107	19.6%*
Other Non-Hispanic	Insured	248,663	34,149	13.7%*
	Uninsured	43,438	8,342	19.2%*

\*Not statistically significant

Source: The Hilltop Institute tabulations of the BRFSS.

### C. Gender Differences

Men are more likely than women to use tobacco in Maryland. Again, rates of tobacco use are higher among the uninsured—36.6 percent of uninsured males and 24.8 percent of uninsured females use tobacco products (Table 13). Among the insured, 19.8 percent of men and 17.3 percent of women used tobacco.

**Table 13: Number and Percentage of Tobacco Users in Maryland, by Gender and Insurance Status, CY 2011-2012**

Gender	Insurance Status	Total	Number Using Tobacco Products	Percentage Using Tobacco Products
Male	Insured	1,445,843	286,819	19.8%
	Uninsured	313,060	114,590	36.6%
Female	Insured	1,626,018	280,512	17.3%
	Uninsured	240,823	59,744	24.8%

Source: The Hilltop Institute tabulations of the BRFSS.

### D. Geographic Differences

Among the four groups of counties used as geographic rating areas in the individual market, the Washington DC Metropolitan region had a much lower rate of tobacco use than

the other regions.<sup>30</sup> The difference in tobacco use rates between the insured and uninsured in the Washington DC Metropolitan region was not statistically significant. The Baltimore Metropolitan region, Eastern and Southern Maryland, and Western Maryland all had roughly the same tobacco use rates among the uninsured (37 to 38 percent) and the insured (nearly 22 percent).

**Table 14: Number and Percentage of Tobacco Users by Geographic Region in Maryland, by Insurance Status, CY 2011-2012**

Region	Insurance Status	Total	Number Using Tobacco Products	Percentage Using Tobacco Products
Baltimore Metro	Insured	1,277,349	278,453	21.8%
	Uninsured	201,283	75,285	37.4%
Eastern & Southern Maryland	Insured	408,135	87,706	21.5%
	Uninsured	63,563	23,899	37.6%
Washington DC Metro	Insured	794,953	96,123	12.1%*
	Uninsured	148,115	22,146	15.0%*
Western Maryland	Insured	317,749	69,354	21.8%
	Uninsured	59,838	22,766	38.0%

\*Not statistically significant

Source: The Hilltop Institute tabulations of the BRFSS

### E. Age Differences

Significant differences in tobacco use rates persisted between insured and uninsured populations when tabulated by age groups (Table 15). Tobacco use rates among the uninsured aged 18 to 54 years ranged from 30 to 34 percent and fell to 26 percent among uninsured 55- to 64-year-olds. Overall, the highest rates of tobacco use occur among 25- to 34-year olds, while tobacco use rates are lowest among persons aged 55-64 years.

<sup>30</sup> “Baltimore Metropolitan region” includes Baltimore City and Baltimore, Harford, Howard, and Anne Arundel Counties.

“Eastern and Southern Maryland” includes St. Mary's, Charles, Calvert, Cecil, Kent, Queen Anne's, Talbot, Caroline, Dorchester, Wicomico, Somerset, and Worcester Counties.

“Washington DC Metropolitan region” includes Montgomery and Prince George's Counties.

“Western Maryland” includes Garrett, Allegany, Washington, Carroll, and Frederick Counties. <http://www.mdinsurance.state.md.us/sa/docs/documents/insurer/bulletins/bulletin-13-08-geographicratingareas.pdf>.



**Table 15: Number and Percentage of Tobacco Users in Maryland  
by Age Group and Insurance Status, CY 2011-2012**

<b>Age Group (years)</b>	<b>Insurance Status</b>	<b>Total</b>	<b>Number Using Tobacco Products</b>	<b>Percentage Using Tobacco Products</b>
18 to 24	Insured	417,720	74,574	17.9%
	Uninsured	109,287	33,506	30.7%
25 to 34	Insured	580,344	121,604	21.0%
	Uninsured	172,605	58,223	33.7%
35 to 44	Insured	665,430	119,721	18.0%
	Uninsured	94,695	28,495	30.1%
45 to 54	Insured	768,222	147,940	19.3%
	Uninsured	104,999	35,424	33.7%
55 to 64	Insured	640,145	103,491	16.2%
	Uninsured	72,299	18,687	25.8%

Source: The Hilltop Institute tabulations of the BRFSS

#### **F. Income Differences**

Lower income is associated with higher tobacco use rates, as shown in Table 16. The BRFSS only collects income information in terms of dollar ranges, and this information cannot be converted to the FPL thresholds for coverage and subsidies. However, when defining low income as annual income of less than \$25,000, approximately 35 percent of low-income persons were tobacco users, regardless of insurance status. Tobacco use rates were slightly lower at middle income levels, but there was no significant difference between the insured and uninsured. Within the highest income group, 25.1 percent of uninsured and 13.5 percent of insured were tobacco users.

**Table 16: Number and Percentage of Tobacco Users in Maryland by Income Group and Insurance Status, CY 2011-2012**

Income Group	Insurance Status	Total	Number Using Tobacco Products	Percentage Using Tobacco Products
Annual Income Greater than or Equal to \$50,000	Insured	1,832,412	247,244	13.5%
	Uninsured	82,260	20,654	25.1%
Annual Income \$25,000 to Less than \$50,000	Insured	505,663	126,685	25.0%*
	Uninsured	136,732	42,978	31.4%*
Annual Income Less than \$25,000	Insured	391,250	136,219	34.8%*
	Uninsured	251,821	89,011	35.3%*

\*Not statistically significant

Source: The Hilltop Institute tabulations of the BRFSS

### G. Educational Attainment

Persons with higher levels of educational attainment have lower rates of tobacco use and are more likely to be insured. The differences between the insured and uninsured populations persist and are statistically significant among all educational levels, except among persons who did not graduate from high school. Between 37 and 41 percent of non-high school graduates use tobacco, regardless of insurance status. On the other hand, only 7.5 percent of insured college graduates use tobacco, compared to 16.9 percent of uninsured college graduates.

**Table 17: Number and Percentage of Tobacco Users in Maryland by Educational Attainment Level and Insurance Status, CY 2011-2012**

Educational Attainment Level	Insurance Status	Total	Number Using Tobacco Products	Percentage Using Tobacco Products
Did Not Graduate High School	Insured	225,680	92,249	40.9%*
	Uninsured	151,784	56,144	37.0%*
Graduated High School	Insured	757,344	206,979	27.3%
	Uninsured	183,420	65,806	35.9%
Attended College or Technical School	Insured	900,142	179,255	19.9%*
	Uninsured	142,028	38,360	27.0%*
Graduated from College or Technical School	Insured	1,182,275	88,537	7.5%
	Uninsured	72,719	12,301	16.9%

\*Not statistically significant

Source: The Hilltop Institute tabulations of the BRFSS

## H. Activity Limitations

Other populations that have difficulty maintaining access to health services include persons who report limitations in performing activities of daily living (ADLs).<sup>31</sup> Tobacco use is common among people with these limitations. Nearly 30 percent of the insured population with ADL limitations and 43.1 percent of the uninsured population with ADL limitations use tobacco products. The tobacco use rate for people who do not report ADL limitations is substantially similar to the rate for the population at large, with about 16 percent of the insured and 30 percent of the uninsured using tobacco.

**Table 18: Number and Percentage of Tobacco Users in Maryland Who Report Limitations in Activities of Daily Living, by Insurance Status, CY 2011-2012**

Presence of Limits on Activities of Daily Living (ADL)	Insurance Status	Total	Number Using Tobacco Products	Percentage Using Tobacco Products
Has ADL Limits	Insured	556,271	165,478	29.7%
	Uninsured	78,884	34,005	43.1%
Does Not Have ADL Limits	Insured	2,452,554	389,680	15.9%
	Uninsured	455,391	134,458	29.5%

Source: The Hilltop Institute tabulations of the BRFSS

## I. Health Status

Among persons reporting fair or poor health, the prevalence of tobacco use among the insured and uninsured was not significantly different, at around 31 to 33 percent. Uninsured people with better self-reported health status were likely to use tobacco at about the same rate as those with fair or poor health. Persons in better health and who were insured had lower rates of tobacco use at just less than 17 percent.

**Table 19: Number and Percentage of Tobacco Users in Maryland by Self-Assessed Health Status and Insurance Status, CY 2011-2012**

Self-Assessed Health Status	Insurance Status	Total	Number Using Tobacco Products	Percent
Fair or Poor Health	Insured	338,349	105,504	31.2%*
	Uninsured	132,738	43,782	33.0%*
Good, Very Good, or Excellent Health	Insured	2,730,778	461,426	16.9%
	Uninsured	420,895	130,462	31.0%

\*Not statistically significant

Source: The Hilltop Institute tabulations of the BRFSS

<sup>31</sup> Those respondents reported that they were limited “in any way in any activities” because of physical, mental, or emotional problems.

## **J. Summary**

Tobacco use is highly correlated with being uninsured. Higher rates of tobacco use among the uninsured persisted in nearly all subgroups of potentially vulnerable populations. Apart from being strongly correlated with the absence of health insurance, tobacco use rates are particularly high among males, younger age groups, persons with low income or less education, and those with ADL limitations or poorer health status. The Washington DC Metropolitan region has lower rates of tobacco use than other regions in Maryland.

## **VIII. Options for the State to Address Any Adverse Consequences of Tobacco Use Rating**

### **A. Limit or Eliminate Tobacco Differentials in the State**

A number of policy interventions may avoid or reduce the adverse consequences of tobacco rating. One way, permissible under federal regulation, would be to limit the maximum tobacco premium differential to less than the maximum 50 percent, or forbid plans from applying a differential entirely. As discussed in Section III (B), a number of states have further limited tobacco differential beyond the federally permissible maximum and some have eliminated tobacco differentials. The limitations on the MHBE IT system will prevent imposing a tobacco differential in the individual market in 2015, and permission must be obtained from CMS to limit or eliminate the differential for 2016. If the goal is to maintain a tobacco differential, then lowering the maximum permissible differential for older age groups would limit the effects of compounded premium increases being imposed on unsubsidized premium amounts.

### **B. Increase Maryland's Anti-Smoking Activities**

Another policy option would be to expand anti-tobacco marketing and the availability of smoking cessation. Although tobacco cessation services are already covered as essential health benefits, the State could take a larger role in discouraging tobacco use. The CDC's Office on Smoking and Health developed state-specific recommended annual investments in five categories: state and community interventions, health communication interventions, cessation interventions, surveillance and evaluation, and administration and management. According to the CDC, Maryland expended \$6 million on these tobacco control categories in 2011, which was only 9.5 percent of the recommended "Best Practices" amount of \$63,000,000.<sup>32</sup>

## **IX. Summary and Conclusions**

The previous set of analyses generated a number of findings. Although permitted under Maryland and federal regulations, tobacco premium differentials are not widely used by plans currently participating in the MHBE. If tobacco premium differentials were more

---

<sup>32</sup> Bridging the Gap/ImpacTeen Project, University of Illinois at Chicago Health Policy Center (UIC) <http://apps.nccd.cdc.gov/statesystem/DetailedReport/DetailedReports.aspx?printfriendly=1&TopicID=400&TopicName=Funding&MeasureID=401&MeasureSeq=1&MeasureName=Expenditures%20%E2%80%93%20UIC&StateID=MD&StateName=Maryland&YearName=2011&Year=2011&Quarter=2011&DeliverableID=0&DraftInd=P>

widely used, the impact on insurance premiums and participation in the marketplace would be significant for people who use tobacco. Because of age rating, insurance cost increases would be especially high among older tobacco users. If the maximum tobacco differential were applied at all ages, thousands of tobacco users likely would drop coverage through the Exchange, and those remaining would likely be users with the highest health care needs and costs.

Tobacco use is more prevalent among many potentially vulnerable populations, so an increased use of tobacco premium differentials would affect these populations disproportionately. The uninsured in particular have higher rates of tobacco use. Changes in carriers' premiums due to tobacco rating are likely to make insurance unaffordable for many of the uninsured. Those who do purchase coverage at the higher tobacco-rated premiums are likely to have more health problems and higher costs.

Tobacco use is also higher among males, persons with low income, persons with less education, and those with limits in activity or poorer health status. Differences in tobacco use by age are less clear, although older age groups are somewhat less likely to be tobacco users. White Non-Hispanics without insurance have considerably higher tobacco user rates than Black Non-Hispanics. The Washington DC Metropolitan region is the outlier among MHBE geographic rating regions, with a lower tobacco use rate than the Baltimore Metropolitan region, Western Maryland, and Eastern and Southern Maryland.

Strategies to mitigate the potential adverse consequences of tobacco premium differentials include the following:

- (1) Limiting or eliminating tobacco differentials in the individual and small group markets. Seven states and the District of Columbia have eliminated tobacco premium differentials, and another four states have limited the maximum tobacco differential that may be charged to less than the federal maximum.
- (2) Increasing state investment in anti-tobacco policies. The CDC Office on Smoking and Health recommends state specific expenditures in state and community interventions, health communication interventions, cessation interventions, surveillance and evaluation, and administration and management. However, in 2011 Maryland expended only 9.5 percent of the recommended "Best Practices" amount of \$63,000,000.

## APPENDICES

### Appendix 1: Chapter 159, Acts of 2013, Section 6

SECTION 6. AND BE IT FURTHER ENACTED, That:

(a) The Maryland Health Benefit Exchange and the Maryland Insurance Administration shall:

(1) conduct a study of the impact of the Affordable Care Act's allowance of a tobacco use rating of 1.5 to 1, including:

(i) its effect on insurance premiums generally;

(ii) its effect on the affordability and purchase of insurance, and access to health care, for tobacco users; and

(iii) any disparate impact on specific vulnerable populations; and

(2) assess the options that may be available to the State to address any adverse consequences of the tobacco use rating.

(b) On or before September 1, 2014, the Maryland Health Benefit Exchange and the Maryland Insurance Administration shall report to the Governor and, in accordance with §2-1246 of the State Government Article, the General Assembly, on the findings of the study and any recommendations for further legislative action.

## Appendix 2: Data from MHBE Carriers' Rate Filings

### Individual Market

<b>Carrier</b>	<b>Market Share<sup>33</sup></b>	<b>Tobacco Factor Used</b>	<b>25-Year-Old Tobacco User for Baltimore County</b>	<b>25-Year-Old Non-Tobacco User for Baltimore County</b>	<b>50-Year-Old Tobacco User for Baltimore County</b>	<b>50-Year-Old Non-Tobacco User for Baltimore County</b>
All Savers Insurance Company	0.16%	Yes	\$323.67	\$269.72	\$695.72	\$479.81
BlueChoice	65.89%	No	\$179.37	\$179.37	\$319.08	\$319.08
CareFirst of Maryland, Inc.	17.80%	No	\$188.44	\$188.44	\$335.21	\$335.21
Evergreen Health Cooperative	0.37%	Yes	\$267.91	\$248.06	\$616.46	\$441.28
Group Hospitalization and Medical Services, Inc.	11.21%	No	\$188.44	\$188.44	\$335.21	\$335.21
Kaiser Foundation Health Plan Mid-Atlantic	4.56%	Yes	\$245.02	\$222.75	\$475.50	\$396.24

<sup>33</sup> Market share calculated from enrollment data collected during carrier survey, June 2014.

## Small Group Market

<b>Carrier</b>	<b>Market Share<sup>34</sup></b>	<b>Tobacco Factor Used</b>	<b>25-Year-Old Tobacco User for Baltimore County effective Q1 2014</b>	<b>25-Year-Old Non-Tobacco User for Baltimore County effective Q1 2014</b>	<b>50-Year-Old Tobacco User for Baltimore County effective Q1 2014</b>	<b>50-Year-Old Non-Tobacco User for Baltimore County effective Q1 2014</b>
Aetna Health, Inc.	12.96%	Yes	\$295.24	\$268.40	\$525.19	\$477.45
Aetna Life Insurance	12.03%	Yes	\$346.59	\$315.08	\$616.54	\$560.49
BlueChoice	30.76%	No	\$264.11	\$264.11	\$469.82	\$469.82
CareFirst of Maryland, Inc.	1.09%	No	\$341.96	\$341.96	\$608.30	\$608.30
Coventry Health and Life	15.04%	Yes	\$236.66	\$236.66	\$526.24	\$420.99
Coventry Health Care of Delaware	12.49%	Yes	\$236.66	\$236.66	\$526.24	\$420.99
Evergreen Health Cooperative	1.05%	Yes	\$295.68	\$273.78	\$680.36	\$487.02
Group Hospitalization and Medical Services, Inc.	4.79%	No	\$341.96	\$341.96	\$608.30	\$608.30
Kaiser Foundation Health Plan Mid-Atlantic	3.68%	No	\$200.96	\$200.96	\$357.48	\$357.48
MAMSI Life and Health	1.40%	No	\$295.96	\$295.96	\$526.47	\$526.47
Optimum Choice	1.45%	No	\$276.35	\$276.35	\$491.59	\$491.59
UnitedHealthCare Ins. Co.	2.48%	No	\$264.24	\$264.24	\$470.05	\$470.05
UnitedHealthCare Mid-Atlantic	0.81%	No	\$296.98	\$296.98	\$528.28	\$528.28

<sup>34</sup> Market share calculated from enrollment data collected during carrier survey, June 2014.



**Tobacco Factors Used by Individual Market Plans,<sup>35</sup> by Age of Subscriber, 2014**

<b>Age (years)</b>	<b>All Savers</b>	<b>Evergreen Health Cooperative</b>	<b>Kaiser</b>
18	1.00	1.077	1.00
19	1.00	1.077	1.00
20	1.00	1.077	1.00
21	1.04	1.072	1.10
22	1.08	1.072	1.10
23	1.12	1.072	1.10
24	1.16	1.072	1.10
25	1.20	1.08	1.10
26	1.21	1.08	1.11
27	1.22	1.08	1.11
28	1.23	1.08	1.12
29	1.24	1.08	1.12
30	1.25	1.13	1.13
31	1.26	1.13	1.13
32	1.27	1.13	1.13
33	1.28	1.13	1.14
34	1.29	1.13	1.15
35	1.30	1.132	1.15
36	1.31	1.132	1.15
37	1.32	1.132	1.16
38	1.33	1.132	1.16
39	1.34	1.132	1.17
40	1.34	1.133	1.18
41	1.34	1.133	1.18
42	1.34	1.133	1.19
43	1.34	1.133	1.19
44	1.34	1.133	1.19
45	1.34	1.281	1.20
46	1.36	1.281	1.20
47	1.38	1.281	1.20
48	1.40	1.281	1.20
49	1.42	1.281	1.20
50	1.45	1.397	1.20

<sup>35</sup> Plans not listed do not use tobacco rating factors.

<b>Age (years)</b>	<b>All Savers</b>	<b>Evergreen Health Cooperative</b>	<b>Kaiser</b>
51	1.47	1.397	1.20
52	1.49	1.397	1.20
53	1.5	1.397	1.20
54	1.5	1.397	1.20
55	1.5	1.492	1.20
56	1.5	1.492	1.20
57	1.5	1.492	1.20
58	1.5	1.492	1.20
59	1.5	1.492	1.20
60	1.5	1.492	1.20
61	1.5	1.492	1.20
62	1.5	1.492	1.20
63	1.5	1.492	1.20
64	1.5	1.492	1.20

**Tobacco Factors Used by Small Group Market Plans,<sup>36</sup> by Age of Subscriber, 2014**

<b>Age (years)</b>	<b>Aetna Health, Inc.</b>	<b>Aetna Life Insurance</b>	<b>Coventry Health and Life</b>	<b>Coventry Health Care of Delaware</b>	<b>Evergreen Health Cooperative</b>
18	1.10	1.10	1.10	1.10	1.077
19	1.10	1.10	1.10	1.10	1.077
20	1.10	1.10	1.10	1.10	1.077
21	1.10	1.10	1.10	1.10	1.072
22	1.10	1.10	1.10	1.10	1.072
23	1.10	1.10	1.10	1.10	1.072
24	1.10	1.10	1.10	1.10	1.072
25	1.10	1.10	1.05	1.05	1.08
26	1.10	1.10	1.05	1.05	1.08
27	1.10	1.10	1.05	1.05	1.08
28	1.10	1.10	1.05	1.05	1.08
29	1.10	1.10	1.05	1.05	1.08
30	1.10	1.10	1.05	1.05	1.13
31	1.10	1.10	1.10	1.10	1.13
32	1.10	1.10	1.10	1.10	1.13
33	1.10	1.10	1.10	1.10	1.13
34	1.10	1.10	1.10	1.10	1.13
35	1.10	1.10	1.10	1.10	1.132
36	1.10	1.10	1.15	1.15	1.132
37	1.10	1.10	1.15	1.15	1.132
38	1.10	1.10	1.15	1.15	1.132
39	1.10	1.10	1.15	1.15	1.132
40	1.10	1.10	1.15	1.15	1.133
41	1.10	1.10	1.20	1.20	1.133
42	1.10	1.10	1.20	1.20	1.133
43	1.10	1.10	1.20	1.20	1.133
44	1.10	1.10	1.20	1.20	1.133
45	1.10	1.10	1.20	1.20	1.281
46	1.10	1.10	1.25	1.25	1.281
47	1.10	1.10	1.25	1.25	1.281
48	1.10	1.10	1.25	1.25	1.281
49	1.10	1.10	1.25	1.25	1.281

<sup>36</sup> Plans not listed do not use tobacco rating factors.

<b>Age (years)</b>	<b>Aetna Health, Inc.</b>	<b>Aetna Life Insurance</b>	<b>Coventry Health and Life</b>	<b>Coventry Health Care of Delaware</b>	<b>Evergreen Health Cooperative</b>
50	1.10	1.10	1.25	1.25	1.397
51	1.10	1.10	1.30	1.30	1.397
52	1.10	1.10	1.30	1.30	1.397
53	1.10	1.10	1.30	1.30	1.397
54	1.10	1.10	1.30	1.30	1.397
55	1.10	1.10	1.30	1.30	1.492
56	1.10	1.10	1.35	1.35	1.492
57	1.10	1.10	1.35	1.35	1.492
58	1.10	1.10	1.35	1.35	1.492
59	1.10	1.10	1.35	1.35	1.492
60	1.10	1.10	1.35	1.35	1.492
61	1.10	1.10	1.40	1.40	1.492
62	1.10	1.10	1.40	1.40	1.492
63	1.10	1.10	1.40	1.40	1.492
64	1.10	1.10	1.40	1.40	1.492

### **Appendix 3: Survey Instrument for Individual and Small Group Plans in the Exchange**

#### **Instructions for Completing the Request for Data on Tobacco Premium Differentials for Individual and Small Group Markets**

We are requesting the number of covered lives from each carrier in the individual and small group health insurance markets by gender, race, ethnicity, age, income level, and county or jurisdiction.

We would prefer the data to be as recent as possible, e.g. as of June 1, 2014, and entered according to the specifications that follow.

Please note that if you do not have data for a particular classification category, you may leave the cells blank. Please only enter zero ("0") in cells for which you have no covered lives in that category.

#### **Date of data**

If you do not have data available as of June 1, please use the latest date for which you have these data available. Indicate at the beginning of the row the date your entry represents.

#### **Covered Lives with Tobacco Factor**

If your plan uses tobacco premium differentials, you have two rows of data to complete for each line of business you offer: individual policies and small group policies.

The two columns for "Covered Lives" should be the total number of covered lives in each product, with or without tobacco rating.

The total line will automatically sum the tobacco and non-tobacco lines for you. If your plan does not use a tobacco premium differential, you only need to complete one line for each product.

#### **Gender**

Indicate the numbers of covered lives of male, female, and unknown or other gender.

#### **Income Level**

If income data is only available for policies sold through the health benefits exchange, please provide the covered lives for those policies.

You may be able to estimate income levels by the amount of the premium assistance or cost sharing subsidy. If you have information on the absolute level of family income, you may have to convert it to a percentage of the federal poverty level (FPL), particularly for families covered under small group market plans.

You will find a table that relates FPL to family size and household income below.

Family Size	100% of FPL	138% of FPL	200% of FPL	250% of FPL	400% of FPL
1	\$11,670	\$16,104.60	\$23,340	\$29,175	\$46,680
2	15,730	\$21,707.40	\$31,460	\$39,325	\$62,920
3	19,790	\$27,310.20	\$39,580	\$49,475	\$79,160
4	23,850	\$32,913.00	\$47,700	\$59,625	\$95,400
5	27,910	\$38,515.80	\$55,820	\$69,775	\$111,640
6	31,970	\$44,118.60	\$63,940	\$79,925	\$127,880
7	36,030	\$49,721.40	\$72,060	\$90,075	\$144,120
8	40,090	\$55,324.20	\$80,180	\$100,225	\$160,360

**Ethnicity and Race**

Please code race separately from ethnicity, e.g. a person who is both Hispanic and white should be counted in both the column for Hispanic under ethnicity and the column for whites under race

**Age**

Please assign age in years according to the date of your data extract, e.g. age in years as of June 1, 2014, or other date if your data are earlier.

**Rating Region**

Please assign covered lives to the jurisdiction of residence of the policyholder.

If you have any questions, please contact Chuck Betley at [cbetley@hilltop.umbc.edu](mailto:cbetley@hilltop.umbc.edu) or (410) 455-6386.

Individual Market			Gender			Income Level				
Carrier	Date of Data	Covered Lives with Tobacco Factor	Male	Female	Other or Unknown	100 – 200% FPL	201 – 250% FPL	251– 400% FPL	401% + FPL	Unknown
All Savers Insurance Company (UnitedHealthcare)		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
BlueChoice (CareFirst)		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
CareFirst of Maryland, Inc. (CareFirst)		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
Group Hospitalization and Medical Insurance (CareFirst)		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
Evergreen Health Cooperative		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
Kaiser Foundation Health Plan Mid-Atlantic		With Tobacco Factor								
		Without Tobacco Factor								
		Total								

Individual Market			Ethnicity			Race				
Carrier	Date of Data	Covered Lives with Tobacco Factor	Hispanic	Non-Hispanic	Unknown	African-American	Asian	White	Other	Unknown
All Savers Insurance Company (UnitedHealthcare)		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
BlueChoice (CareFirst)		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
CareFirst of Maryland, Inc. (CareFirst)		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
Group Hospitalization and Medical Insurance (CareFirst)		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
Evergreen Health Cooperative		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
Kaiser Foundation Health Plan Mid-Atlantic		With Tobacco Factor								
		Without Tobacco Factor								
		Total								



Individual Market			Age in Years					
Carrier	Date of Data	Covered Lives with Tobacco Factor	0-17	18-39	40-54	55-64	65 and older	Unknown
All Savers Insurance Company (UnitedHealthcare)		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
BlueChoice (CareFirst)		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
CareFirst of Maryland, Inc. (CareFirst)		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
Group Hospitalization and Medical Insurance (CareFirst)		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
Evergreen Health Cooperative		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
Kaiser Foundation Health Plan Mid- Atlantic		With Tobacco Factor						
		Without Tobacco Factor						
		Total						

Individual Market			Jurisdiction of Residence					
Carrier	Date of Data	Covered Lives with Tobacco Factor	Allegheny County	Anne Arundel County	Baltimore City	Baltimore County	Calvert County	Caroline County
All Savers Insurance Company (UnitedHealthcare)		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
BlueChoice (CareFirst)		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
CareFirst of Maryland, Inc. (CareFirst)		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
Group Hospitalization and Medical Insurance (CareFirst)		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
Evergreen Health Cooperative		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
Kaiser Foundation Health Plan Mid-Atlantic		With Tobacco Factor						
		Without Tobacco Factor						
		Total						

Individual Market		Jurisdiction of Residence						
Carrier	Date of Data	Covered Lives with Tobacco Factor	Carroll County	Cecil County	Charles County	Dorchester County	Frederick County	Garrett County
All Savers Insurance Company (UnitedHealthcare)		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
BlueChoice (CareFirst)		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
CareFirst of Maryland, Inc. (CareFirst)		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
Group Hospitalization and Medical Insurance (CareFirst)		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
Evergreen Health Cooperative		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
Kaiser Foundation Health Plan Mid- Atlantic		With Tobacco Factor						
		Without Tobacco Factor						
		Total						

Individual Market			Jurisdiction of Residence					
Carrier	Date of Data	Covered Lives with Tobacco Factor	Harford County	Howard County	Kent County	Montgomery County	Prince George's County	Queen Anne's County
All Savers Insurance Company (UnitedHealthcare)		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
BlueChoice (CareFirst)		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
CareFirst of Maryland, Inc. (CareFirst)		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
Group Hospitalization and Medical Insurance (CareFirst)		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
Evergreen Health Cooperative		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
Kaiser Foundation Health Plan Mid- Atlantic		With Tobacco Factor						
		Without Tobacco Factor						
		Total						

Individual Market				Jurisdiction of Residence					
Carrier	Date of Data	Covered Lives with Tobacco Factor		St. Mary's County	Somerset County	Talbot County	Washington County	Wicomico County	Worcester County
All Savers Insurance Company (UnitedHealthcare)		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
BlueChoice (CareFirst)		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
CareFirst of Maryland, Inc. (CareFirst)		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
Group Hospitalization and Medical Insurance (CareFirst)		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
Evergreen Health Cooperative		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
Kaiser Foundation Health Plan Mid- Atlantic		With Tobacco Factor							
		Without Tobacco Factor							
		Total							

Small Group Market			Gender			Income Level				
Carrier	Date of Data	Covered Lives with Tobacco Factor	Male	Female	Other or Unknown	100 – 200% FPL	201 – 250% FPL	251– 400% FPL	401% + FPL	Unknown
Aetna Health, Inc.		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
Aetna Life Insurance		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
BlueChoice		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
CFMI		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
Coventry Health and Life		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
Coventry Health Care of Delaware		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
Evergreen Health Cooperative		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
GHMSI		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
Kaiser Foundation Health Plan Mid-Atlantic		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
Mamsi Life and Health		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
Optimum Choice		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
UnitedHealthCare Ins. Co.		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
UnitedHealthcare Mid-Atlantic		With Tobacco Factor								
		Without Tobacco Factor								
		Total								

Small Group Market			Ethnicity			Race				
Carrier	Date of Data	Covered Lives with Tobacco Factor	Hispanic	Non-Hispanic	Unknown	African-American	Asian	White	Other	Unknown
Aetna Health, Inc.		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
Aetna Life Insurance		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
BlueChoice		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
CFMI		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
Coventry Health and Life		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
Coventry Health Care of Delaware		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
Evergreen Health Cooperative		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
GHMSI		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
Kaiser Foundation Health Plan Mid-Atlantic		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
Mamsi Life and Health		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
Optimum Choice		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
UnitedHealthCare Ins. Co.		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
UnitedHealthcare Mid-Atlantic		With Tobacco Factor								
		Without Tobacco Factor								
		Total								

Small Group Market			Age in Years					
Carrier	Date of Data	Covered Lives with Tobacco Factor	0-17	18-39	40-54	55-64	65 and older	Unknown
Aetna Health, Inc.		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
Aetna Life Insurance		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
BlueChoice		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
CFMI		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
Coventry Health and Life		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
Coventry Health Care of Delaware		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
Evergreen Health Cooperative		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
GHMSI		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
Kaiser Foundation Health Plan Mid-Atlantic		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
Mamsi Life and Health		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
Optimum Choice		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
UnitedHealthCare Ins. Co.		With Tobacco Factor						
		Without Tobacco Factor						
		Total						
UnitedHealthcare Mid-Atlantic		With Tobacco Factor						
		Without Tobacco Factor						
		Total						



Small Group Market			Jurisdiction of Residence						
Carrier	Date of Data	Covered Lives with Tobacco Factor	Allegany County	Anne Arundel County	Baltimore City	Baltimore County	Calvert County	Caroline County	Carroll County
Aetna Health, Inc.		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
Aetna Life Insurance		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
BlueChoice		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
CFMI		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
Coventry Health and Life		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
Coventry Health Care of Delaware		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
Evergreen Health Cooperative		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
GHMSI		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
Kaiser Foundation Health Plan Mid-Atlantic		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
Mamsi Life and Health		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
Optimum Choice		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
UnitedHealthCare Ins. Co.		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
UnitedHealthcare Mid-Atlantic		With Tobacco Factor							
		Without Tobacco Factor							
		Total							

Small Group Market			Jurisdiction of Residence						
Carrier	Date of Data	Covered Lives with Tobacco Factor	Cecil County	Charles County	Dorchester County	Frederick County	Garrett County	Harford County	Howard County
Aetna Health, Inc.		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
Aetna Life Insurance		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
BlueChoice		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
CFMI		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
Coventry Health and Life		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
Coventry Health Care of Delaware		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
Evergreen Health Cooperative		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
GHMSI		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
Kaiser Foundation Health Plan Mid-Atlantic		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
Mamsi Life and Health		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
Optimum Choice		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
UnitedHealthCare Ins. Co.		With Tobacco Factor							
		Without Tobacco Factor							
		Total							
UnitedHealthcare Mid-Atlantic		With Tobacco Factor							
		Without Tobacco Factor							
		Total							

Small Group Market			Jurisdiction of Residence							
Carrier	Date of Data	Covered Lives with Tobacco Factor	Kent County	Montgomery County	Prince George's County	Queen Anne's County	St. Mary's County	Somerset County	Talbot County	
Aetna Health, Inc.		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
Aetna Life Insurance		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
BlueChoice		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
CFMI		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
Coventry Health and Life		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
Coventry Health Care of Delaware		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
Evergreen Health Cooperative		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
GHMSI		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
Kaiser Foundation Health Plan Mid-Atlantic		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
Mamsi Life and Health		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
Optimum Choice		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
UnitedHealthCare Ins. Co.		With Tobacco Factor								
		Without Tobacco Factor								
		Total								
UnitedHealthcare Mid-Atlantic		With Tobacco Factor								
		Without Tobacco Factor								
		Total								

Small Group Market			Jurisdiction of Residence			
Carrier	Date of Data	Covered Lives with Tobacco Factor	Washington County	Wicomico County	Worcester County	Other or Unknown
Aetna Health, Inc.		With Tobacco Factor				
		Without Tobacco Factor				
		Total				
Aetna Life Insurance		With Tobacco Factor				
		Without Tobacco Factor				
		Total				
BlueChoice		With Tobacco Factor				
		Without Tobacco Factor				
		Total				
CFMI		With Tobacco Factor				
		Without Tobacco Factor				
		Total				
Coventry Health and Life		With Tobacco Factor				
		Without Tobacco Factor				
		Total				
Coventry Health Care of Delaware		With Tobacco Factor				
		Without Tobacco Factor				
		Total				
Evergreen Health Cooperative		With Tobacco Factor				
		Without Tobacco Factor				
		Total				
GHMSI		With Tobacco Factor				
		Without Tobacco Factor				
		Total				
Kaiser Foundation Health Plan Mid-Atlantic		With Tobacco Factor				
		Without Tobacco Factor				
		Total				
Mamsi Life and Health		With Tobacco Factor				
		Without Tobacco Factor				
		Total				
Optimum Choice		With Tobacco Factor				
		Without Tobacco Factor				
		Total				
UnitedHealthCare Ins. Co.		With Tobacco Factor				
		Without Tobacco Factor				
		Total				
UnitedHealthcare Mid-Atlantic		With Tobacco Factor				
		Without Tobacco Factor				
		Total				

#### **Appendix 4: Expanded Model of the Effects of Tobacco Differentials on Premiums and Enrollment for Age and Income Groups**

Appendix Table 4-1 provides a more extensive example of the compounding effects of the tobacco premium differential than is shown in Table 8 in the body of this report. In Table 4-1, different income levels are shown for each age group to illustrate the effects of the premium subsidy for lower and higher income groups. Because the tobacco premium differential is applied to the base premium, before any subsidy amounts, the change in the premium amounts for tobacco users could be large.

Column D shows the net annual premium after subsidies, what would be charged to a non-tobacco user, and Column E shows the percentage of annual income represented by the subsidized premium at various levels of FPL. Column E shows the calculation of the 50 percent premium differential, based on the subsidized premium amount in Column D. In Column G the new total premium for tobacco users is shown as the sum of the subsidized premium in Column D plus the tobacco differential in Column F. This amount in Column H is the Column G amount represented as a percentage of each FPL income amount. In this example the tobacco premium differential would drive the cost above the 8 percent threshold of affordability for all except the highest income 25-year-old population. Moreover, the effect of the tobacco differential compound with age, as the base annual premium is allowed to change for different age levels. Hence, the effects of the tobacco differential are worst for low-income older enrollees. Data in previous sections showed that persons aged 55 to 64 years made up 22 percent of the individual market in 2014. The premium for a 64-year-old tobacco user with income at 150 percent of the FPL would be 23.1 percent of their annual income.

Column I shows the relative increase in the total premium for a tobacco user. A 25-year-old tobacco user with an income of 150 percent of the FPL could see an increase in total premium of as much as 154 percent, while a 64-year-old person's premium at 150 percent of the FPL would increase 443 percent with a premium differential of 50 percent. This would represent 23.1 percent of annual income for the low income 64 year-old person. At higher income levels the changes in premium costs are less dramatic, but still substantial. A 64-year-old tobacco user, at 400 percent of the FPL, would pay 16.7 percent of their annual income in insurance premiums with the 50 percent tobacco differential, 74 percent more than a non-tobacco user.

Appendix Table 4-2 illustrates the sensitivity of expected changes in enrollment to differences in the estimated price elasticity of demand for individual insurance. An estimated price elasticity of -0.4 was depicted in Table 9 in the body of this report. In Table 4-2, the enrollment effects are estimated for the extreme values of -0.2 and -0.6 cited by Liu and Chollet, 2006. Because these elasticity values are estimates based on individual market insurance purchases before the enactment of the ACA, the actual price elasticity of demand for MHBE individual coverage may be different. However, at the lower estimate of elasticity, approximately 23,000 tobacco users are predicted to avoid coverage, leaving 91,000 tobacco users who might choose to enroll through the Exchange. At the higher estimate of elasticity, 66,000 tobacco users could drop coverage through the Exchange, while 49,000 could purchase plans through the Exchange.

**Table 4-1: Maryland BlueChoice\* Silver \$2,000 Deductible Plan and Hypothetical Effects of Maximum Tobacco Premium Differentials on Premiums as a Percentage of Income**

A	B	C	Non Tobacco User		Tobacco User			I
			D	E	F	G	H	
Age	Poverty Level	Base Annual Premium	Subsidized Annual Premium	Percentage of Annual Income, Subsidized Premium [Col D ÷ Col B amt]	Tobacco Differential =0.5*Base Annual Premium [0.5 * Col C]	Total Premium = Subsidized Premium + Tobacco Differential [Col D + Col F]	Percentage of Annual Income, Total Premium (including tobacco differential) [Col G ÷ Col A Amt.]	Change in Premium [Col G ÷ Col D]
25	150% FPL =\$17,235	\$2,172	\$704	4.1%	\$1,086	\$1,790	10.4%	154%
	200%=\$22,980	\$2,172	\$1,463	6.4%	\$1,086	\$2,549	11.1%	74%
	300%=\$34,470	\$2,172	No Subsidy	6.3%	\$1,086	\$3,258	9.5%	50%
	400%=\$45,960	\$2,172	No Subsidy	4.7%	\$1,086	\$3,258	7.1%	50%
45	150% FPL =\$17,235	\$3,120	\$710	4.1%	\$1,560	\$2,270	13.2%	220%
	200%=\$22,980	\$3,120	\$1,469	6.4%	\$1,560	\$3,029	13.2%	106%
	300%=\$34,470	\$3,120	No Subsidy	9.1%	\$1,560	\$4,680	13.6%	50%
	400%=\$45,960	\$3,120	No Subsidy	6.8%	\$1,560	\$4,680	10.2%	50%
64	150% FPL =\$17,235	\$6,492	\$732	4.2%	\$3,246	\$3,978	23.1%	443%
	200%=\$22,980	\$6,492	\$1,491	6.5%	\$3,246	\$4,737	20.6%	218%
	300%=\$34,470	\$6,492	\$3,318	9.6%	\$3,246	\$6,564	19.0%	98%
	400%=\$45,960	\$6,492	\$4,409	9.6%	\$3,246	\$7,655	16.7%	74%

\* BlueChoice is currently *not* charging the tobacco premium differential. This table serves to illustrate a hypothetical scenario. Source: The MIA and The Hilltop Institute estimates.

**Table 4-2: Estimated Changes in MHBE Enrollment with a Tobacco Premium Differential of 50 Percent, with Varying Assumptions of Price Elasticity**

A	B	C	D	E	F	G
<b>Age Group</b>	<b>Persons</b>	<b>Percentage Premium Increase with 50% Tobacco Differential [From Table 8]</b>	<b>Percentage Giving Up Coverage, Assuming Elasticity of -0.2 [-0.2 * Col C]</b>	<b>Number of Persons Giving Up Coverage Assuming Elasticity of -0.2 [Col D * Col B]</b>	<b>Percentage Giving Up Coverage, Assuming Elasticity of -0.6 [0.6 * Col B]</b>	<b>Number of Persons Giving Up Coverage Assuming Elasticity of -0.6 [Col F * Col B]</b>
18 to 34	61,000	74%	15%	9,028	44%	27,084
35 to 54	42,000	106%	21%	8,904	64%	26,712
55 to 64	12,000	218%	44%	5,232	100%*	12,000
Total	115,000			23,164		65,796
Number of Tobacco Users Remaining to Participate in Exchange				91,836		49,204

\*Capped at the level where all enrollee left the Exchange plans.

Source: The Hilltop Institute estimates.

## **Appendix 5: Data Sources and Limitations**

### ***Data on Prevalence of Tobacco Rating in the MHBE.***

In June 2014, the MIA requested data from the health insurance carriers offering plans through the MHBE to determine the current prevalence and enrollment in individual and small group plans that were tobacco-rated. The Hilltop Institute tabulated the responses. Plans were asked to provide the number of covered lives in rated and non-rated plans, as of June 1, or their most recent available data. The survey requested information on age, gender, income imputed from the subsidy levels for plans, race and ethnicity distributions, as well as county of residence. All of the participating carriers responded. However, not all plans were able to supply information at the level of detail requested. In particular, information on race, ethnicity and income generally were not available. Moreover, data checks identified some discrepancies between the enrollment reported in this survey and other data reported to the MIA.

### ***Data on Costs and Utilization.***

The MHCC Medical Care Data Base (MCDB) was used to estimate the prevalence of smoking related conditions, and costs for those conditions in Maryland. The data set consisted of individual market claims and eligibility information for 2012 by the health insurance carriers in Maryland for Maryland residents.

Because these data were generated previous to the implementation of the coverage standards and marketplace reforms of the ACA, the results should be interpreted with caution and do not necessarily represent the prevalence of smoking related conditions in the current insurance market. The study could only access utilization data as submitted on standardized claim forms and the information on enrollees maintained by the carriers. Variables such as race and ethnicity were frequently missing, so estimates of cost and utilization differentials for certain potentially vulnerable populations were not available. No variables were available to measure tobacco use explicitly, so Hilltop developed measures to identify tobacco users and related conditions using the diagnosis and procedure codes in the MCDB claims data, using information from the Surgeon General's 2014 report on tobacco (U.S. Department of Health and Human Services, 2014). These conditions are described in Appendix 5.

The study data were restricted to participants in individual coverage plans aged 18 to 64 years. Cost estimates were based on the sum of insurer reimbursements and consumer cost sharing amounts, as reported by the carriers. The amounts reported might not represent actual spending if an enrollee did not fulfill cost sharing obligations.

### ***Data on Tobacco Use Prevalence.***

The BRFSS, an annual survey sponsored in every state by the CDC was used to measure the prevalence of tobacco use, in combination with other demographic and socioeconomic variables. The 2012 BRFSS data from Maryland are the most recent available to identify differences in the prevalence of tobacco use among potentially vulnerable subpopulations. Hilltop combined responses to questions about cigarette smoking and smokeless tobacco because the tobacco premium differential is applied to any form of tobacco use.



However, because the BRFSS is subject to sampling variation, it is an estimate of population totals, and may deviate from actual population data. Hilltop combined data from the 2011 and 2012 BRFSS surveys to produce more precise estimates of small groups (Doescher et al., 2003). Combining two years of the survey data allowed for greater numbers of survey respondents within each sub-classification. However, because a major change in the survey methodology was implemented in 2011, data could not be added for additional years, and comparisons could not be made with earlier surveys.

Each respondent in the BRFSS is assigned a variable to weight responses to represent their frequency and proportion in the total state population. The weights are developed to account for the complex sampling design, and the weights in the combined data set were adjusted to account for the proportionate size of the state sample in each year (Washington State Department of Health, 2013). Population estimates for Maryland were generated using SAS statistical software that accounts for complex survey designs. The BRFSS is limited to adults, aged 18 years and older, and for this analysis Hilltop used findings for only the population aged 18 to 64 years to best represent participants in the individual Exchange market.

The structure of certain questions in the survey may create differences in the population estimates produced from the BRFSS and other survey sources. For example, the BRFSS asks if the respondent is currently covered to determine insurance status. Other surveys such as the Census Bureau's Current Population Survey or the American Community Survey use different questions to determine insurance status and may produce different measures of the numbers of uninsured. Similarly, the BRFSS asks the respondent to identify their household income by ranges rather than stating an explicit amount. Thus, the BRFSS cannot be used to calculate family income in terms of FPL ranges used to establish eligibility for Medicaid or Exchange insurance subsidies.

**Appendix 6: List of Tobacco-Related Conditions Used to Identify Tobacco-Related Services and Costs**

<b>Malignant neoplasms</b>
Lip, oral cavity, pharynx
Esophagus
Stomach
Pancreas
Larynx
Trachea, lung, bronchus
Cervix uteri
Kidney and renal pelvis
Urinary bladder
Acute myeloid leukemia
<b>Cardiovascular diseases</b>
Coronary heart disease
Other heart disease
Cerebrovascular disease
Atherosclerosis
Aortic aneurysm
Other arterial disease
<b>Respiratory diseases</b>
Influenza, pneumonia
Bronchitis, emphysema
Chronic airways obstruction

Source: U.S. Department of Health and Human Services. *The Health Consequences of Smoking—50 Years of Progress. A Report of the Surgeon General*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014. Printed with corrections, January 2014.

<http://www.surgeongeneral.gov/library/reports/50-years-of-progress/full-report.pdf>, p. 652

**ICD 9 codes identifying tobacco dependence**

305.1 Tobacco use disorder

649.0 Tobacco use disorder complicating pregnancy, childbirth, or the puerperium

V1582 History of tobacco use

**CPT4 codes identifying tobacco counseling**

99406 “Smoking and tobacco cessation counseling visit; intermediate, greater than 3 minutes up to 10 minutes”

99407 “Smoking and tobacco cessation counseling visit; intensive, greater than 10 minutes”

Source: The Hilltop Institute

## References

- Doescher, M.P., Jackson, J.E., Jerant, A.F., and Hart, L.G., “Prevalence and Trends in Smoking: A National Rural Study” Working Paper #85, (Seattle, WA: University of Washington Rural Health Research Center, December 2003).
- Kaplan, C.M., Graetz, I., and Waters, T.M., “Most Plans in the Health Insurance Exchanges Charge Lower Tobacco Surcharges Than Allowed, But Many Tobacco Users Still Lack Affordable Coverage,” *Health Affairs*, August 2014, 33(8):1466-1473.
- Liu, S., and Chollet, D, “Price and Income Elasticity of the Demand for Health Insurance and Health Care Services: A Critical Review of the Literature,” (Washington, DC: Mathematica Policy Research, 2006).
- U.S. Department of Health and Human Services. *The Health Consequences of Smoking—50 Years of Progress. A Report of the Surgeon General*. (Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014).
- Washington State Department of Health, Center for Health Statistics, “2012 BRFSS Data Package Tour and Q&A” December 19, 2013, [http://listserv.wa.gov/cgi-bin/wa?A3=ind1312&L=WA-BRFSS-DATA-USERS&E=base64&P=88571&B=-----%3D\\_NextPart\\_001\\_01CEFCEF.12E9A76F&T=application%2Fvnd.openxmlformats-officedocument.presentationml.presentation;%20name=%222012%20BRFSS%20Data%20Package%20Tour%20and%20QA\\_Revised.pptx%22&N=2012%20BRFSS%20Data%20Package%20Tour%20and%20QA\\_Revised.pptx&attachment=q&XSS=3](http://listserv.wa.gov/cgi-bin/wa?A3=ind1312&L=WA-BRFSS-DATA-USERS&E=base64&P=88571&B=-----%3D_NextPart_001_01CEFCEF.12E9A76F&T=application%2Fvnd.openxmlformats-officedocument.presentationml.presentation;%20name=%222012%20BRFSS%20Data%20Package%20Tour%20and%20QA_Revised.pptx%22&N=2012%20BRFSS%20Data%20Package%20Tour%20and%20QA_Revised.pptx&attachment=q&XSS=3) downloaded July 24, 2014.