The following appendix is supplemental to a Commonwealth Fund issue brief, Jodi Liu and Christine Eibner, *Expanding Enrollment Without the Individual Mandate: Options to Bring More People into the Individual Market* (Commonwealth Fund, Aug. 2018), available on the Fund's website at: https://www.commonwealthfund.org/publications/fund-reports/2018/aug/expanding-enrollment-without-individual-mandate.

APPENDIX

COMPARE Overview

COMPARE is a microsimulation model that uses economic theory, nationally representative data, and evidence from past experience to estimate how consumers and business will respond to health policy changes.[1] The model creates a synthetic population of individuals, families, and firms and assigns health expenditures using data from the April 2010 wave of the 2008 Survey of Income and Program Participation, the 2010–2011 Medical Expenditures Panel Survey (MEPS), and the 2009 Kaiser Family Foundation/ Health Research and Educational Trust Employer Health Benefits Survey. While the data sources predate the implementation of the Affordable Care Act (ACA), we update them to reflect population growth based on factors reported by the U.S. Census Bureau, and to reflect health care cost growth using the Centers for Medicare and Medicaid Services (CMS) National Health Expenditures Accounts.

We assign each individual in the Survey of Income and Program Participation a spending amount using the spending of a similar individual from the MEPS. We then augment spending imputations with data on high-cost claims from the Society of Actuaries. These adjustments account for the fact that the MEPS underrepresents individuals with high spending.

Individuals in COMPARE make health insurance enrollment decisions by weighing the costs and benefits of available options, an approach that is referred to by economists as "utility maximization." The utility-maximization framework accounts for the following:

- premium costs
- anticipated out-of-pocket health care spending
- the value of health care consumption
- the risk of incurring a financially devastating health care bill, and
- any penalties the individual would face by remaining uninsured, including the risk of later being denied coverage or being charged higher premiums.

Premium costs are adjusted to account for tax credits, if such credits are available to the enrollee. All else being equal, higher premiums reduce an individual's probability of enrolling in health insurance. In contrast, several factors encourage enrollment, such as a lower risk of catastrophic spending, reduced out-of-pocket spending, the avoidance of penalties (if they apply), and increases in health care utilization.

Businesses in the model make decisions by considering the value of health insurance to their workers. Tax credits for individual market coverage and Medicaid eligibility expansions may reduce the value of health insurance to workers, leading firms to drop insurance. However, mandates requiring individuals to enroll in insurance, as well as mandates requiring firms to offer coverage, tend to increase the likelihood that a firm will offer insurance.

We calibrate the model to ensure that it accurately predicts outcomes for years in which complete data exist. As new data emerge, we update the model to reflect this information. For example, we added an adjustment to our Medicaid enrollment algorithm to account for the "welcome mat" effect in which people who were previously eligible for Medicaid enrolled after the ACA's Medicaid expansion.

Below, we describe the health insurance enrollment algorithm used in the base COMPARE scenario, as well as recent adjustments to the model that we have incorporated to better match post-ACA experience (e.g., administrative reports on enrollment, subsidy payments, and tax collections). We then describe how we modeled each of the additional individual mandate response scenarios discussed in the main text. Finally, we present additional modeling results, and discuss how our results compare to those of the Congressional Budget Office (CBO).

Health Insurance Enrollment Decisions

To model individual and family health insurance enrollment decisions under the ACA, COMPARE uses a utility-maximization approach, in which decision-makers weigh the costs and benefits of available options. The utility-maximization framework accounts for the tax penalty for not purchasing insurance,[2] the value of health care consumption, premium costs, expected out-of-pocket health care spending, and financial risk associated with out-of-pocket spending.

We scale each of these components of utility to dollars and assume that they are additively separable.[3] We further assume that individuals' utilities are separable in consumption and health. The health-related component of the utility function is modeled as follows:

$$U_{ijk} = u(H_{ij}) - E(OOP_{ij}) - p_{ij} - \frac{1}{2} rVAR(OOP_{ij}) - (0.8 * Penalty_j) + Calibration_{jk}$$

Within this equation:

- $u(H_{ij})$ is the utility associated with consuming health care services for individual *i* under insurance option *j*
- *k* represents an individual's demographic group based on age and income
- OOP_{ij} is the out-of-pocket spending expected
- *p* is the individual's premium contribution (after adjusting for tax credits)
- r is the coefficient of risk aversion.

Possible health insurance enrollment choices (*j*) under the ACA may include employer coverage, Medicaid or Children's Health Insurance Program (CHIP) coverage, an ACA-compliant individual-market plan (including plans available on and off the marketplaces), or another source of coverage.[4] Individuals can also choose to forgo insurance. Not all individuals will have access to all forms of coverage. For example, access to Medicaid is contingent on eligibility, and individuals will have access to employer coverage only if they (or their spouse or parent) work for a business that offers insurance.

The *Penalty* term represents the tax penalty associated with insurance status *j*, and — in scenarios in which the mandate is in effect — it is 0 for all but the uninsured insurance status and on so-called "short term" nongroup plans. We downweight the tax penalty by a factor of 0.8 to capture the fact that, on average, the Internal Revenue Service collects only about 80 percent of taxes owed.[5]

The term $Calibration_{jk}$ is a factor that adjusts utilities to match enrollment patterns observed in pre-ACA data. The term accounts for nonpecuniary factors that may influence preferences for different types of insurance. Such factors include the convenience associated with enrolling in employer coverage and access constraints associated with Medicaid. Specific modeling strategies for each source of coverage *j* are described next.

Small-Group Employer Coverage. Small employers in the model choose whether to offer coverage based on worker preferences and a small set of other factors, including the employer's industry and whether workers are unionized. Under the ACA, all small firms are part of a single risk pool with guaranteed issue, three-to-one rate banding on age, and restrictions that preclude insurers from charging different premiums to different groups other than based on geography, family size, tobacco use, and plan generosity.

In the current version of the model, small-group market regulations apply to all firms with 50 or fewer employees, regardless of year. Earlier versions of the model expanded the small group market to include firms with 100 or fewer workers after 2015, as originally intended by the ACA. We revised the definition because the Protecting Affordable Coverage for Employees Act, signed into law in late 2015, amended the ACA's definition of *small employer* to include firms with one to 50 employees in perpetuity, unless states opt to extend the small-group market to firms with up to 100 workers.

Small firms in the model are permitted to purchase a 60-percent, 70-percent, 80-percent, or 90-percent actuarial value plan on the ACA's regulated small-group market, which includes the Small Business Health Insurance Options marketplaces. Small firms in the model may retain grandfathered status, which exempts them from the ACA's rating regulations, although we assume that a certain percentage of small firms will lose grandfathered status each year.

The ACA also offers a small business tax credit to small firms with low-wage workers who obtain coverage through the Small Business Health Insurance Options marketplaces. Because firms can take advantage of these credits for only two years, we assume that all small firms will have exhausted their tax credit eligibility by 2020.

Large-Group Employer Coverage. Like small employers, large employers choose whether to offer coverage based on worker preferences and several other characteristics, including union status and industry. We allow large firms that offer coverage to choose between four different plans, which are distinguished by plan generosity and rated based on enrollees' expected health expenditures. We estimate premiums for the large-group market based on a regression. The firm's decision to offer is modeled using structural econometric techniques.

Medicaid. Through our calibration process, the model accounts for the fact that not all Medicaid-eligible individuals chose to enroll, perhaps because of stigma, lack of information, or transaction costs associated with enrolling. To account for the fact that the ACA increased Medicaid enrollment among the previously eligible population,[6] we increase the calibration parameter by a factor of approximately $200 in the post-2014 period.

Individual Market. ACA-compliant individual market premiums are calculated endogenously in the model based on the health expenditure profile of those who

choose to enroll. The total, unsubsidized premium is based on enrollees' age, smoking status, and market-rating reforms implemented under the ACA.[7] We model three-to-one rate banding on age for adults ages 21 and older, with a separate age-band for children and young adults under age 21. We also account for the ACA's risk-adjustment requirements, which transfer funds from plans with lower-than-average actuarial risk to plans with higher-than-average actuarial risk.

Under the ACA, the actual premium an enrollee pays is adjusted to account for tax credits available to qualifying individuals with incomes between 100 percent and 400 percent of the federal poverty level who do not have affordable offers of insurance from another source (e.g., employer coverage, Medicaid). We apply the ACA's subsidy formula using the benchmark silver premium and the individual's income. Eligible individuals who have incomes between 100 percent and 250 percent of poverty can also receive cost-sharing reduction (CSR) subsidies that help to lower out-of-pocket spending. As required by the ACA, individuals who receive CSR subsidies in COMPARE must be tax-credit eligible and purchase a silver plan (i.e., 70 percent actuarial value). With the CSR subsidies, the effective actuarial value of the plan is increased to 94 percent if income is below 150 percent of poverty, 87 percent if income is between 150 and 200 percent of poverty, and 73 percent if income is between 200 and 250 percent of poverty. Accordingly, out-of-pocket spending is adjusted downward to reflect the higher actuarial value of the plan. Note that out-of-pocket spending enters the individual's utility function; hence, individuals receiving CSR subsidies are more likely to purchase coverage.

To model short-term plans for this analysis, we model the individual market as consisting of two components: 1) the ACA-compliant individual market, including the marketplaces, and 2) off-marketplace short-term plans that are not required to comply with the ACA's rating or other requirements. In the ACA-compliant individual market, modeled individuals and families can purchase plans with a 60-percent, 70-percent, 80-percent, or 90-percent actuarial value, corresponding to bronze, silver, gold, and platinum plans on the marketplaces, respectively. We model short-term plans as having an actuarial value of 50 percent, consistent with estimates of the actuarial value of health insurance plans prior to the ACA.[8] We do not model catastrophic plans, which are available only to those under age 30 or who qualify for a hardship exemption from the individual mandate. According to a 2016 fact sheet published by the Centers for Medicare and Medicaid Services, less than 1 percent of all marketplace enrollees have selected catastrophic coverage.[9]

Adjustment to Account for Post-ACA Experiences and Policies

CSRs. Given the Trump administration's decision to halt federal payments for CSRs, we assume in the model that insurers build the costs of the CSR payments into premiums for their silver plans. We take this into account in COMPARE by eliminating CSR payments from the federal government and loading the costs of CSRs onto the premiums of silver nongroup market plans. Individuals who would have previously been eligible to receive CSR subsidies continue to do so.

Awareness of Marketplace Tax Credits. The U.S. Department of Health and Human Services reported that approximately 14 percent of individual market enrollees are eligible for tax credits but forgo those credits by purchasing coverage outside of the marketplaces.[10] HHS further estimates that 9 million people are potentially eligible for tax credits but remain uninsured. Because these findings suggest that some people may be unaware of their tax credit eligibility, we assume that 25 percent of tax-credit eligible individuals will not account for these credits in their health insurance enrollment decisions. With this assumption, we match HHS's estimate that approximately half of all individual market enrollees receive tax credits.

Penalty Payments. We adjusted the distribution of individual mandate penalty payments among individuals with incomes above 400 percent of poverty to better match data published by the IRS.[11] This adjustment required us to reduce penalty payments among very high-income individuals and increase them for individuals just above 400 percent of poverty. We did not alter the distribution of payments among lower-income individuals.

New Rating Curve. In May 2017, CMS updated the default age-rating curve to adjust premium rating factors for children and young adults ages 20 and under.[12] We use the revised rating curve in this analysis.

Comparison to the Congressional Budget Office and the Urban Institute

Exhibit A1 compares our insurance estimates without the individual mandate to those of CBO and the Urban Institute.[13] The analyses are not comparable regarding the treatment of CSRs. CBO assumes CSRs are paid by

the federal government without the mandate. Urban, in contrast, compares policies in place at the end of 2016 to policies that will be in place in 2019. Urban's analysis includes a scenario in which the mandate is removed and CSRs are halted.

Exhibit A1. Comparison to Urban Institute and the Congressional Budget Office

	COMPARE 2020, No IM, CSRs not paid (millions)	Urban 2019, No IM, CSRs not paid (millions)	COMPARE 2020, No IM, CSRs paid (millions)	CBO 2020, No IM, CSRs paid (millions)
Total insured				
Employer	155.1	148	155.4	153
Individual market	15.7	16*	13.8	14
Medicaid	60.5	69	60.5	66
Other	12.5	9	12.5	13
Uninsured	34.3	33	35.9	38
Total population	278	274	278	274
Share uninsured	12.3%	11.9%	12.9%	13.9%

Notes: IM = individual mandate. CSRs = cost-sharing reductions. CBO allows multiple sources of coverage, so estimates do not sum to population totals.

* Includes 4 million people enrolled in short-term plans that do not meet minimum essential coverage requirements.

Another difference across the estimates is that RAND and Urban assign individuals to a primary insurance category, while CBO allows people to have more than one source of coverage. Hence, CBO's estimates do not sum to population totals.

The estimated population size also differs across the studies. RAND matches population estimates published by the U.S. Census Bureau, which estimates that there will be 278 million nonelderly U.S. residents by 2020.[14]

RAND's estimated number without insurance is comparable to Urban's estimate (conditional on assumptions about CSR payment) and slightly lower than CBO's. Compared to the other modelers, we estimate that slightly more people will be enrolled in employer coverage, and slightly fewer people will be insured in Medicaid. Estimates for individual market enrollment — the market that is arguably most affected by the elimination of the individual mandate penalty — are similar across the three models.

Scenarios Considered in This Report

The scenarios considered in this report were analyzed in a prior report,[15] before the recent policy changes under the Trump administration.

Enhanced APTCs for Young Adults. Under the ACA, individuals and families are eligible for APTCs on the marketplaces if they have incomes between 100 percent and 400 percent of the federal poverty level and no access to an alternative affordable plan (e.g., through an employer, Medicaid, or CHIP). The APTC amount is equal to the premium for the second-lowest-cost silver plan in the individual's rating area, minus a required percentage contribution that scales with income. For the 2018 plan year, the required percentage contribution will range from 2.01 percent of income for those with incomes between 100 percent and 133 percent of the federal poverty level to 9.56 percent of income for those with incomes between 300 and 400 percent of poverty.[16] The contributions are adjusted over time based on health care cost growth relative to general inflation, and — in 2020 — we estimate that contributions will range from 2.09 to 9.95 percent of income.

To model the enhancement, we increase the monthly APTC for eligible enrollees between the ages of 19 and 30 by $50. The enhancement amount scales down linearly for enrollees between the ages of 30 and 35, declining to $0 at age 35. APTC-eligible enrollees in the specified age range receive the enhancement, regardless of their income level, with the caveat that the total credit (original APTC plus enhancement) may not exceed the cost of the second-lowest-cost silver plan available to the enrollee.

We modeled the enhanced APTC policy, based on suggestions made in 2016 by members of the Obama administration, in a previous analysis.[17] Senator Tammy Baldwin has also introduced legislation that would increase APTCs for young adults.[18]

Extending APTCs to All Incomes. In this scenario, we assume that those with incomes over 400 percent of poverty would receive tax credits if they had to pay more than 9.95 percent of income to enroll in health insurance coverage in 2020. The tax credit would equal the price of the second-lowest-cost silver plan available, minus *income*0.0995*. The change influences the chance of enrolling in the individual market by reducing the premium contribution that the enrollee faces (in the equation shown in the prior section). In addition, the tax credit reduces premium spending for eligible individuals who would have enrolled in the individual market without the tax credit and increases government spending.

As under current law, we continue to assume that those with affordable employer coverage are ineligible for tax credits. Affordability is defined as having an employer premium contribution for single coverage that exceeds 9.95 percent of income in 2020. Further, we assume that those with incomes under 100 percent of poverty remain ineligible for tax credits, even if their states opted not to expand Medicaid.[19] The possibility of extending tax credits to people with higher incomes has been proposed several times, including by Senators Heidi Heitkamp and Dianne Feinstein.[20] We modeled this proposal in a previous issue brief.[21]

Increasing the Value of APTCs. Under current law, those with incomes between 100 percent and 400 percent of poverty and no other affordable source of coverage are eligible for APTCs, which cap their contribution toward a benchmark health insurance plan on the ACA's marketplaces. We considered a scenario that would reduce the contribution level for those with incomes between 300 percent and 400 percent of poverty from 9.95 percent to 8.5 percent of income for a benchmark plan, with commensurate reductions for lower-income individuals. To incorporate this change, we adjusted the maximum percentage contributions by a factor of (8.5/9.95)=0.8543. After these adjustments, the percentage contribution amounts ranged from 1.79 percent of income for those with incomes between 100 percent and 138 percent of poverty and no other affordable source of coverage to 8.5 percent of income for those with incomes between 300 percent and 400 percent of poverty. This policy is similar to a proposal suggested during the 2016 presidential election campaign that we modeled in a previous Commonwealth Fund brief.[22]

Reinsurance. Reinsurance pays insurers some or all the cost of health plan enrollees with costly conditions. Reinsurance reduces insurers' risk of experiencing a catastrophic financial loss. Further, if individual market reinsurance is funded through external sources (e.g., from government investment or through taxes levied outside of the individual market), it reduces the average cost of insuring an individual market enrollee, leading to lower premiums. Under the ACA, a transitional reinsurance program was available from 2014 to 2016. The reinsurance program was funded by a per capita contribution from individuals covered by individual and employer health plans, including self-insured plans. We consider two reinsurance scenarios. The standard reinsurance scenario is based on the ACA's 2016 payment parameters: individual market insurers would be eligible for reinsurance payments for enrollees whose annual claims exceed $90,000; the payments would cover 50 percent of claims between $90,000 and $250,000.[23] The generous reinsurance scenario is based on the ACA's 2014 payment parameters: individual market insurers would be eligible for reinsurance payments for enrollees whose annual claims exceed $45,000; the payments would cover 100 percent of claims between $45,000 and $250,000.[24] We used the annual expenditures of individual market enrollees to calculate the cost of the reinsurance program. We assume that the reinsurance program is fully funded by a per capita fee levied on all individual market, group, and self-insured health plan enrollees.

We estimate that the total cost of the reinsurance program would range from $6.3 billion in the standard scenario to $33.9 billion in the generous scenario. As modeled, the reinsurance program would be funded through a fee levied on all health plans, including group, self-insured, and nongroup plans. On a per enrollee basis, the fee would be $37 per enrollee in the standard scenario and $197 per enrollee in the generous scenario. Because the fee is levied on all plans, including marketplace plans, a portion of the fee is paid for by the federal government as part of the APTC. In the deficit table reported in the main text (Exhibit 4), the change in federal APTC spending reflects the net effect of the reinsurance fee and the premium reductions caused by the reinsurance program. Despite the new fee, federal spending on APTCs falls because the additional cost of the reinsurance fee is more than offset by premium reductions caused by the inflow of reinsurance funding into the nongroup market from taxes on group and self-funded health plans.

When we estimate the total cost of the reinsurance program to taxpayers (Exhibit 5), we consider the change in the deficit plus the cost of the reinsurance fee to health plan enrollees. Because fees levied on subsidized marketplace plans are incorporated into APTC spending, they are reflected in the deficit change, and need to be removed from the reinsurance fee calculations to avoid double counting. For enrollees who receive APTCs, we model the federal contribution to reinsurance taxes as *Min(Reinsurance Tax, APTC)*. To calculate the nonfederal cost of the reinsurance program, we subtract these federal payments from the total cost of the reinsurance program. Exhibit A2 reports the total cost of the reinsurance program, and shows the amount incorporated into APTC spending (federal reinsurance payments) and the amount paid by private health plan enrollees. In calculating the cost to taxpayers, we sum the deficit impact and private reinsurance payments.

Exhibit A2. Cost of Reinsurance Options (in $ billions), 2020

	Standard reinsurance	Generous reinsurance
Total cost of the reinsurance program	6.3	33.9
Federal reinsurance payments (incorporated into federal APTC spending)	0.4	2.3
Private reinsurance payments (paid by all health plan enrollees)	5.9	31.6

Notes: APTC = advance premium tax credit. Analysis assumes reinsurance is funded through a per capita fee on all group, nongroup, and self-funded health plans. The federal government bears most of the cost of the fee for people who are enrolled in APTC-eligible marketplace plans. The remaining cost is borne directly by health plan enrollees.

Comparison to Prior Results

We previously analyzed these policy options to expand individual market enrollment,[25] prior to the elimination of the individual mandate penalty, halting of federal payments for CSRs, and extension of the duration of short-term plans to 12 months. A comparison of the current results to the prior results is shown in Exhibit A3.

Compared to the prior results, we found that the recent policy changes reduced individual market enrollment under the options considered, except for extending APTCs to people above 400 percent of FPL. The slightly larger enrollment effect in the "extend APTC" scenario reflects CSR nonpayment, which increases the cost of the silver plans relative to other plan options, hence both increasing the number of people who are newly eligible for tax credits when APTCS are extended, and making those

Exhibit A3. Comparison of Current Results to Prior Results, 2020

	Enhance APTCs for young adults	Increase APTCs	Extend APTCs	Increase and extend APTCs	Standard reinsurance	Generous reinsurance
Change in total insured (millions)						
Prior results	0.8	1.0	1.2	2.6	0.9	3.4
Current results	0.3	0.4	1.7	2.4	0.3	2.0
Change in individual market enrollees (millions)						
Prior results	1.0	1.4	1.6	3.4	1.2	5.4
Current results	0.4	0.6	2.0	3.0	0.6	3.2
Change in silver premium, 40-year-old nonsmoker						
Prior results	–0.8%	–0.2%	–2.5%	–4.8%	–3.9%	–19.3%
Current results	–1.1%	0.1%	–2.7%	–3.1%	–2.4%	–10.7%
Change in federal spending for APTCs ($ billions)						
Prior results	$1.8	$4.8	$3.2	$9.0	–$4.1	–$18.7
Current results	$1.2	$6.5	$9.9	$18.9	–$2.5	–$9.0
Change in net deficit impact ($ billions)						
Prior results	$2.5	$5.9	$4.9	$11.8	–$2.9	–$13.1
Current results	$1.1	$6.4	$9.9	$18.8	–$2.3	–$8.8
Additional taxpayer cost per new enrollee						
Prior results	$3,112	$5,737	$3,969	$4,448	$3,537	$5,571
Current results	$3,480	$14,827	$5,675	$7,721	$11,701	$11,555

Notes: APTCs = advance premium tax credits. The prior results reflect policies including the individual mandate penalty and federal payment for CSRs. The current results reflect recent policies that eliminate the individual mandate penalty, halt federal payments for CSRs, and allow 12-month short-term plans.

credits go further for bronze, gold, and platinum coverage. The changes in individual market silver premiums reflect increases resulting from CSR nonpayment that may be offset by decreases from people newly enrolling in individual market coverage because of increased and/or extended APTCs and reinsurance.

The net federal deficit and taxpayer impact of the options considered follows the same trend as our prior results. Without revenues from individual mandate penalties, the federal revenue impact is diminished. However, the four scenarios with modified APTCs still increase the deficit, because of increased spending on APTCs. Compared to the prior results, there is a larger deficit increase in the option that extends APTCs to people above 400 percent of FPL, corresponding to the larger number of newly subsidized enrollees. Although the reinsurance policies are designed to be budget neutral by collecting fees from health plan enrollees, the deficit is still reduced because of lower APTC spending. The additional taxpayer costs per new enrollee are higher in the current results because of higher APTC spending and/or lower numbers of new enrollees.

APPENDIX NOTES

1. Amado Cordova et al., "The COMPARE Microsimulation Model and the U.S. Affordable Care Act," *International Journal of Microsimulation* 6, no. 3 (Winter 2013): 78–117.

2. The individual mandate penalty is still in effect through 2018; it is to be eliminated in 2019.

3. This approach follows Dana P. Goldman, Joan L. Buchanan, and Emmett B. Keeler, "Simulating the Impact of Medical Savings Accounts on Small Business," *Health Services Research* 35, no. 1 Part 1 (Apr. 2000): 53–75.

4. Other sources of coverage include Medicare for the nonelderly with qualifying conditions and military-related sources of coverage, such as TRICARE.

5. Internal Revenue Service, *Tax Gap Estimates for Tax Years 2008–2010* (IRS, Apr. 2016).

6. Molly Frean, Jonathan Gruber, and Benjamin D. Sommers, "Premium Subsidies, the Mandate, and Medicaid Expansion: Coverage Effects of the Affordable Care Act," *Journal of Health Economics* 53 (May 2017): 72–86.

7. U.S. Department of Health and Human Services, "Patient Protection and Affordable Care Act; Health Insurance Market Rules; Rate Review," *Federal Register* 78, no. 39 (Feb. 27, 2013): 13406–42.

8. Jon R. Gabel et al., "More Than Half of Individual Health Plans Offer Coverage That Falls Short of What Can Be Sold Through Exchanges as of 2014," *Health Affairs* 31 no. 6 (June 2012): 1339–48.

9. Centers for Medicare and Medicaid Services, "March 31, 2016 Effectuated Enrollment Snapshot," Fact sheet (CMS, June 30, 2016).

10. U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation "About 2.5 Million People Who Currently Buy Coverage Off-Marketplace May be Eligible for ACA Subsidies," ASPE Data Point (ASPE, Oct. 4, 2016).

11. Internal Revenue Service, *SOI Tax Stats — Individual Statistical Tables by Size of Adjusted Gross Income* (IRS, 2015).

12. Center for Consumer Information and Insurance Oversight, *Market Rating Reforms: State Specific Rating Variations* (CCIIO, Centers for Medicare and Medicaid Services, updated June 2, 2017).

13. Congressional Budget Office, *Repealing the Individual Health Insurance Mandate: An Updated Estimate* (CBO, Nov. 2017); and Linda J. Blumberg, Matthew Buettgens, and Robin Wang, *The Potential Impact of Short-Term Limited-Duration Policies on Insurance Coverage, Premiums, and Federal Spending* (Urban Institute, Feb. 2018).

14. United States Census Bureau, *2014 National Population Projections Tables* (Census Bureau, updated May 9, 2017).

15. Christine Eibner and Jodi Liu, *Options to Expand Health Insurance Enrollment in the Individual Market* (Commonwealth Fund, Oct. 2017).

16. Internal Revenue Service, Rev. Proc. 2017-36 (IRS, 2017).

17. Eibner and Liu, *Options to Expand,* 2017.

18. Senator Tammy Baldwin, "U.S. Senator Tammy Baldwin Introduces Legislation to Improve Health Coverage Affordability for Young Adults," News release, Mar. 8, 2018.

19. Arguably, it would make more sense to extend tax credits to lower-income individuals, rather than providing additional federal assistance to people with incomes above 400% of FPL. However, because extending tax credits to lower-income populations might cause some states to rescind Medicaid expansion, extending tax credits to lower-income individuals may be a less viable policy option than extending them to those with incomes above 400% of FPL.

20. Senator Heidi Heitkamp, *Addressing Affordability for More Americans Act of 2017,* S. 1529, 115th Congress, introduced July 11, 2017; and Senator Dianne Feinstein, "Senators Introduce Legislation to Improve Affordable Care Act, Make Coverage More Affordable for Middle-Class Families," News release, June 7, 2017.

21. Jodi Liu and Christine Eibner, *Extending Marketplace Tax Credits Would Make Coverage More Affordable for Middle-Income Adults* (Commonwealth Fund, July 2017).

22. Christine Eibner, Sarah A. Nowak, and Jodi Liu, *Hillary Clinton's Health Care Reform Proposals: Anticipated Effects on Insurance Coverage, Out-of-Pocket Costs, and the Federal Deficit* (Commonwealth Fund, Sept. 2016).

23. Centers for Medicare and Medicaid Services, *Final HHS Notice of Benefit and Payment Parameters for 2016* (CMS, 2016).

24. Centers for Medicare and Medicaid Services, *Transitional Reinsurance Program: Pro Rata Adjustment to the National Coinsurance Rate for the 2014 Benefit Year* (CMS, June 17, 2015).

25. Eibner and Liu, *Options to Expand,* 2017.