

## **Detailed Technical Appendix for Pollin, Heintz, Arno, and Wicks-Lim, "Economic Analysis of Health California"**

In this appendix, we provide a more complete set of the details on the data and methods we used to produce the estimates presented in "Section 4: Impact on Individual California Families and Businesses."

### **Calculations of the Impact on Individual California Families**

In Section 4 of the main text, we provide estimates of the impact of Healthy California on seven representative families. To do this we compiled data on three components, estimated for the average family within each family type. These three components include: (1) total income and wages, (2) consumer spending, (3) current health care expenditures and tax subsidies. We use these data to determine how we expect health care spending to change from under the existing system to Healthy California. In the following, we explain how we estimate each of these three components for our seven family types: low-income with Medi-Cal, low-income uninsured, middle-income under-insured, middle-income with an individual-market plan, middle-income with employer-sponsored insurance (ESI), high-income (from the top quintile) with ESI, and high-income (from the top decile) with ESI.

#### **1. Total income and wages**

Our estimates for the income levels of each family type come from the American Community Survey. The ACS is an annual household survey administered by the U.S. Census Bureau and serves as the Census' primary method for collecting detailed information about the U.S. workforce and overall population in between decennial censuses. The ACS is specifically designed to provide estimates at the state and local levels, surveying roughly 3 million households.

For the overall family income values we use the most recent ACS published estimates of mean incomes by income quintile in California. For our low-income family with Medi-Cal we use the average income for the lowest quintile. This figure -- \$13,000 -- is well below the 138% federal poverty line income eligibility threshold for Medi-Cal for a family of 3.

For our other low-income family, we use the mean income of the 2<sup>nd</sup> lowest quintile. Our middle-income households have the mean income of the middle quintile. Our high-income household has an income equal to the mean for top quintile. The highest income household has the mean income of the top decile in California.

For our estimates of wage income for our low-income and middle-income families, we use data from the Consumer Expenditure Survey (CEX). The CEX is

a national survey administrated by the U.S. Census Bureau for the Labor Department. The survey provides nationally representative data on expenditures, income, and demographic characteristics of consumers in the United States.

The mean income per income quintile, as estimated in the CEX, is similar to those reported in the ACS for California. As a result, we use the CEX data to calculate the share of total income that comes from wages and salaries and apply this share to the mean income values from the ACS (described above). We used the supplemental data to the Congressional Budget Office's report, "The Distribution of Household Income and Federal Taxes, 2013," published June 8, 2016, to estimate how much wages and salaries contribute to total family income for the upper income households (see: [www.cbo.gov/publication/51361](http://www.cbo.gov/publication/51361)). We use the CBO figures because the CBO mean incomes better approximate the mean income figures for the upper-income California households from the ACS.

## 2. Consumption spending

In all cases, we use data from the CEX to calculate the expenditures for various categories as a share of income. We apply these shares to the income values for California. For the low-income, Medi-Cal eligible family, we used the CEX table specifically for a family of three, and use the values for consumer units with income between \$10,000 and \$15,000.

## 3. Current household spending on health care

To determine current spending on health care, we estimate three parts: annual premiums (if insured) that the household pays, out of pocket (OOP) costs, and tax subsidies that offset households' current health spending.

*Low-income households.* We assume these households do not purchase private health insurance. As a result, they do not have an annual health insurance premium, only OOP costs.

The California Health Care Foundation database provides estimates of OOP expenses by insurance status, including with Medi-Cal or uninsured for 2015. We adjust these figures for 2016 to reflect an annual average growth rate in health expenditures of 6 percent: \$665 for the Medi-Cal eligible low-income family and \$775 for the uninsured low-income family.

*Middle-income households.* We assume that under-insured and those insured through their employer have the average insurance premium for family coverage as reported by the California Health Care Foundation database, or \$19,600. The typical premium cost-sharing between employer and employee is 25% (employee) and 75% (employer). We assume this cost sharing for our analysis for their health insurance premiums. For the individual-market insurance plans, we use the

average premium per capita in California reported by the Kaiser Family Foundation’s “State Health Facts” database. Their most recent data are for 2013. As a result, we inflated their figure (\$225 per capita per month, or \$8,300 annually for a family of 3) to reflect the average annual growth in health care spending. We estimate an annual expense of \$9,300.

Households with ESI plans enjoy significant tax subsidies by virtue of receiving a portion of their compensation through untaxed health insurance benefits, as well as being able to pay their portion their insurance premium pre-tax. These tax subsidies are, therefore, effectively equal to these families’ marginal income tax rate times the value of their insurance premium. For these middle-income households, their marginal income tax rate is 15 percent (federal) and 4 percent (state). Moreover, these families do not have to pay the worker’s share of payroll tax (7.65%) on the total value of their health premium. This is again because the employer’s contribution to their health premium is not counted as part of payroll and the family’s contribution to their health premium is pre-tax. See Table DA.1 below. For a detailed discussion of tax subsidies for private health insurance see the Kaiser Family Foundation’s Issue Brief, “Tax Subsidies for Private Health Insurance,” by Matthew Rae et al. (October 2014).

**Table DA-1. ESI-Related Tax Subsidies, Middle-Income Families**

Assumptions:

- \$43,000 taxable wages
- \$19,600 total annual health insurance premium

<b>Compensation excluded from taxable income:</b>	
1. Employer contribution (75%) to cover health insurance premium	\$14,700
2. Household pre-tax contribution (25%) to cover health insurance premium	\$4,900
3. Total compensation excluded from taxable income (rows 1 + 2)	\$19,600
<b>Tax subsidies due to compensation excluded from taxable income</b>	
4. Federal Income Tax subsidy (marginal tax rate of 15%) (=\$19,500*15%)	\$2,940
5. State Income Tax subsidy (marginal tax rate of 4%) =\$19,500*4%)	\$784
6. Employee FICA (employee’s share of payroll tax 7.65%) (=\$19,500*7.65%)	\$1,499
<b>Total tax subsidy (=row 4 + row 5 + row 6)</b>	<b>\$5,223</b>

Households that purchase their insurance on the individual market are eligible for certain tax credits, based on their income. Our middle-income households are eligible for the Premium Tax Credit since their average income is between 100 percent of the federal poverty line (FPL) and below 400% FPL for a family of 3. To estimate the value of the PTC for our middle income family, we use the

Tax Policy Center's 2017 national estimate of the average credit received by middle-income households that receive a credit, or \$6,200.

In addition to this tax subsidy, individuals can deduct from their taxable income spending on insurance premiums that exceed 10 percent of their income. In the case of our middle-income household that purchases their plan on the individual market, about \$3,000 of their insurance premium cost can be deducted from their taxable income. At their marginal tax rates (see above), this results in an additional \$600 tax subsidy for a total of \$6,800.

To estimate OOP costs, we start with the national average out of pocket cost estimates from, "Out-of-Pocket Health Care Expenses by Age and Insurance Coverage, 2011," by Steven R. Machlin, MS and Kelly Carper, Agency for Healthcare Research and Quality Statistical Brief #441, June 2014. These figures are based on the Medical Expenditure Panel Survey (MEPS). For 2011, the average OOP per capita is \$700. We inflate this figure to reflect (1) average annual growth in healthcare expenditures in CA and, (2) a family of 3 for a figure of \$2,655 for 2016. Finally, we adjust this figure slightly downward to \$2,430 to reflect how California residents tend to spend somewhat less than the nation overall (see: Kaiser Family Foundation's State Health Facts database, "Health Expenditures Per Capita by State of Residence."). This is the figure we use for those with ESI plans.

For under-insured families, we estimate OOP costs by applying the definition of under-insured (see discussion in main text): OOP costs equal to 10 percent or more of income. This is equal to \$6,230 for our middle-income family.

To determine the OOP for the middle-income family that purchases their insurance on the individual market, we use information from the report, "Consumer Cost-sharing in Marketplace vs. Employer Health Insurance Plans, 2015," by Jon Gabel et al. (published by the Commonwealth Fund, December 2015). According to Gabel et al., ESI plans tend to have cost sharing terms similar to the Gold plans available in the individual marketplace. These plans are supposed to cover all but 20 percent of OOP costs. The most popular metal tier purchased on the individual market is Silver – plans with worse cost-sharing terms than Gold Plans (i.e., higher OOP costs). Silver plans are supposed to cover all but 30 percent of OOP costs. We therefore assume that the OOP costs for the family individually insured has higher OOP costs – 50 percent higher – than the family with an ESI, or \$3,645.

*High-income households.* For high-income families, we assume that their health insurance is provided through their employer and has a \$29,400 annual premium. We estimate this annual premium by comparing the premium of Platinum to Silver metal plan premiums. In other words, we use the Platinum metal tier to approximate a "Cadillac-type" plan. We examined premium estimates available at

[www.healthpocket.com](http://www.healthpocket.com). According to their premium listings, Platinum plans are roughly 150% that of the Silver plans. As a result, we estimate the ESI premium for our high-income families to equal 150 percent of the ESI premium for our middle-income family, or \$22,050 ( $=\$19,600 \times 1.5$ ). This figure compares reasonably to what has been reported in the news as “Cadillac plans” (see, for example, reporting by National Public Radio, “Cadillac Insurance Plans explained,” March 19, 2009 at: <http://www.npr.org/templates/story/story.php?storyId=112979225>).

As we show in the main text, these high-income households with ESI plans benefit the most from tax subsidies. This is because these households tend to choose more expensive health plans, and therefore the dollar amount of their compensation that has no income tax liability is higher than for other households. In addition, the amount these high-income households spend on their health insurance premium pre-tax is also higher than for other households. Finally, these high-income households have higher marginal income tax rates. The marginal tax rates for the “Top 20 percent” family is 25 percent (federal) and 9.3 percent (state), and the payroll tax rate is 7.65 percent. For the “Top 10 percent” these rates are 28 percent (federal), 9.3% (state), and 1.45 percent (payroll). The payroll tax rate is lower for these families because their income exceeds \$120,000 and therefore would not be subject to the Social Security portion of FICA. The total tax subsidy for “Top 20 percent” family and “Top 10 percent” family from receiving an ESI with an annual premium of \$29,400 is \$10,500 and \$11,400, respectively.

**Table DA-2. ESI-Related Tax Subsidies, High-Income Families (Top 20 percent)**

Assumptions:

- \$122,200 taxable wages
- \$29,400 total annual health insurance premium

<b>Compensation excluded from taxable income:</b>	
1. Employer contribution (75%) to cover health insurance premium	\$22,050
2. Household pre-tax contribution (25%) to cover health insurance premium	\$7,350
3. Total compensation excluded from taxable income (rows 1 + 2)	\$29,400
<b>Tax subsidies due to compensation excluded from taxable income</b>	
4. Federal Income Tax subsidy (marginal tax rate of 25%) ( $=\$29,400 \times 25\%$ )	\$7,350
5. State Income Tax subsidy (marginal tax rate of 9.3%) ( $=\$29,400 \times 9.3\%$ )	\$2,734
6. Employee FICA (employee’s share of payroll tax 7.65%) ( $=\$29,400 \times 1.45\%$ )*	\$426
<b>Total tax subsidy (=row 4 + row 5 + row 6)</b>	<b>\$10,511</b>

**Table DA-3. ESI-Related Tax Subsidies, High-Income Families (Top 10 percent)**

**Assumptions:**

- \$207,000 taxable wages
- \$29,400 total annual health insurance premium

<b>Compensation excluded from taxable income:</b>	
1. Employer contribution (75%) to cover health insurance premium	\$22,050
2. Household pre-tax contribution (25%) to cover health insurance premium	\$7,350
3. Total compensation excluded from taxable income (rows 1 + 2)	\$29,400
<b>Tax subsidies due to compensation excluded from taxable income</b>	
4. Federal Income Tax subsidy (marginal tax rate of 28%) (=\$29,400*28%)	\$8,232
5. State Income Tax subsidy (marginal tax rate of 9.3%) (=\$29,400*9.3%)	\$2,734
6. Employee FICA (employee's share of payroll tax 7.65%) (=\$29,400*1.45%)*	\$426
<b>Total tax subsidy (=row 4 + row 5 + row 6)</b>	<b>\$11,393</b>

The OOP costs for these high-end health plans should be smaller than what is typically purchased by middle-income households. We estimate the OOP costs for these high-end plans by again using the relative difference in cost-sharing between different metal tier plans offered on the individual market. In this case, we compare the OOP costs of silver plans to platinum plans available on the individual market.

As noted above, the average middle-income OOP cost of \$2,430. The typical silver plan has an actuarial value of 70 percent indicating that the plan covers 70 percent of potential OOP costs. Platinum plans, in contrast, cover 90 percent. This suggests that the OOP cost for the high-income households is about 1/3 that of middle-income households, or \$810.

**Calculations of the Impact on Individual California Businesses**

In Section 4 of the main text, we provide estimates of the impact of Healthy California on six representative businesses. To do this we compiled data on five components, estimated for the average business within each business type. These five components include: (1) number of workers, (2) annual payroll, (3) annual gross receipts, (4) cost of health insurance per worker and (5) related tax subsidies. We compile these data to determine how we expect health care spending to change from under the existing system to under Healthy California. In the following, we explain how we estimate each of these five components for our six business types: small business (0-9 employees) providing no health benefits, small business (0-9 employees) providing health benefits, medium business (10-19 employees) providing health benefits, medium business (20-99

employees) providing health benefits, large business (100-499 employees) providing health benefits and large business (500+ employees) providing health benefits.

### 1. Employment by firm size

We estimate the average number of workers per firm size for California firms from the most recent data available (2011). These data are from the Statistics of U.S. Business (SUSB) compiled by the U.S. Census Bureau and published by the U.S. Small Business Administration.

### 2. Payroll by firm size

We need to combine several sources of data to estimate payroll by firm size for California firms for 2016. We start with the ratio of payroll/worker across all firms for 2015 published by the U.S. Census Bureau's County Business Pattern, "2015 Geography Area Series: County Business Patterns by Employment Size Class." We inflate the overall figure using the average annual growth rate in this ratio for California from 2011 to 2015 to estimate the 2016 payroll/worker ratio across all firms.

We then use the most recent data available (2011) on payroll/worker by firm size from the SUSB to determine how the ratio "payroll/worker" for each firm size compares to the ratio for firms overall. We apply this relative ratio to the ratio for firms overall in 2016 described above. This gives us a 2016 payroll/worker value for each firm size. We then multiply this ratio by the number of workers per firm described above.

### 3. Gross receipts by firm size

The most recent data published on gross receipts by firm size for California is from 2007. These figures are published by U.S. Small Business Administration. We inflate these figures to 2016 values using the average nominal GDP growth rate in California from 2007 to 2016 of 33 percent. We then divide these gross receipts figures by the number of firms within each firm size class to get the average 2016 gross receipts value per firm by firm size.

### 4. Average employer cost of health insurance per worker

We use the average family premiums, as well as, average employee and employer contributions to health insurance by firm size reported in the California Health Care Foundation database.

### 5. Business health care tax subsidy

Employers' receive tax subsidies when they provide part of their workers' compensation through health insurance. The IRS instructs employers (<https://www.irs.gov/pub/irs-pdf/p15.pdf>) that if they pay the cost of "an accident or health insurance plan for their

employees, including an employee's spouse and dependents, their payments are not to be treated as wages and are not subject to Social Security, Medicare, and FUTA taxes, or federal income tax withholding." Our estimates of tax subsidies for firms are equal to the taxes they would have had to pay if their spending on their workers' health benefits were included in payroll. We estimate these tax subsidy amounts at the rate of 7.65% of healthcare spending.