

Exhibit A-9:

Details on the Analysis of
Terminating City Benefits for
non-Medicare Eligibles under the
Affordable Healthcare Act

Overview

The Patient Protection and Affordable Care Act (known as the ACA) creates “insurance exchanges” and provides subsidies for individuals and families with household income under 400% of the federal poverty line. Our analysis projects costs to annuitants under the assumption that they will purchase health insurance through the exchanges if the city ceases to offer them a plan. This appendix details the methodology used to produce these cost estimates (for calendar year 2014). We proceed in 3 steps. First, using publically available data on a nationally representative sample of early retirees, we estimate a regression model¹ of the relationship between total household income and retiree family characteristics and annuity amounts. Second, we pair the resulting regression estimates with data on family structure and annuity amounts for non-Medicare eligible annuitants participating in Chicago’s health plan to predict their total household income. Third, we estimate the price of exchange-based health insurance for each retiree. This estimate incorporates both predicted subsidies and predicted premiums (based on age and family structure). Below, we discuss each of these steps in turn.

Step 1: Building a model of household income for early retirees

We estimate a model of total household income using a sample of retirees in the Current Population Survey (CPS) for March 2010 and 2012.² We limit the sample to retirees whose monthly pension income falls between the 1st and 99th percentile of annuity amounts for our sample of Chicago annuitants, so as to ensure comparability of the two populations. We further censor the sample at the 1st and 99th percent of income, as extreme observations will exert undue influence on the regression estimates.³

We use regression analysis to estimate how logged total household income varies as a function of logged pension income and household characteristics. The regression’s intercept and the effect of logged pension income, logged pension income squared and logged retiree age are allowed to vary with the Cartesian product of the sex of the retiree, whether the retiree is over or under 65, whether the retiree has a spouse and whether that spouse is over or under 65. The regression also controls for the average age of the retiree’s children.⁴

¹ A regression model is a statistical tool for exploring the relationship between an outcome of interest and various predictors of that outcome. We estimate a regression model for household income using annuity income, family structure, age and gender as predictors. The regression produces estimates that enable us to predict household income for Chicago retirees, for whom we lack data on household income (but have data on the predictor variables).

² For the purposes of determining a household’s family structure, we define adults as those over 25 and children as those under 25. We include households with 0-8 children and 1-2 adults.

³ Summary statistics for the regression sample are available upon request.

⁴ The model has an R-squared of .455.

Step 2: Predicting household income for Chicago city annuitants

We predict total household income for Chicago city annuitants by pairing the regression parameter estimates with the City's data on annuity amounts, family structure, age and gender. Because the policy we are analyzing only affects non-Medicare annuitants, we exclude all annuitants with Medicare-only households. We also exclude a small number of households with missing or irregular plan data or household characteristics. We follow the CPS in topcoding ages at 85.

The Chicago sample has much higher retirement income, on average, than does the CPS sample. Although our regression analysis controls for these and other differences across the samples, statistical analysis suggests our predicted household incomes are an upper bound on true household incomes; hence we use the term "most conservative" for labeling the scenario incorporating these predictions. Chicago annuity income alone serves as a lower bound on the predicted income for households. We also perform our analysis using this assumption, using the term "least conservative" for the scenarios using this income estimate.

Step 3: Predicting annuitant contributions to premiums for plans purchased through the state exchange

We predict annuitant contributions to plans purchased on the exchange in two steps. First, we predict the unsubsidized price of a "silver plan" offered through the exchange, incorporating household members' ages. Second, we predict subsidy amounts based on estimated household income and family structure. We subtract the subsidy from the premium to estimate annuitants' contributions to premiums. Greater detail is provided below. Some subsets of the annuitant population require different treatment depending on whether their spouses and dependents are Medicare-eligible.

A. Simplest case: all household members are enrolled in the Chicago city plan, and none are eligible for Medicare

We begin by using the Kaiser Family Foundation's online calculator to obtain premium estimates for each individual in each family, and for a family policy with the annuitant as the policyholder (<http://healthreform.kff.org/subsidycalculator.aspx#incomeAgeTables>). These premiums vary by age. We use the "medium" cost option generated by the calculator. We use as our predicted premium for an exchange plan the cheaper of the sum of the premiums for individual plans or the premium for a family plan.

Next, we obtain a predicted maximum premium that the annuitant will have to pay based upon the exchange subsidies. We use predicted income as well as the annuitant's family size to determine the maximum percent of income that individuals will have to contribute to a plan under the ACA.

If the predicted maximum premium is smaller than the entire plan premium, we assume households pay the former. Otherwise they are assumed to pay the entire plan premium.

B. More complicated cases: some household members are enrolled in Chicago city plan, others are enrolled in Medicare or eligible to be enrolled in Medicare'

The complicated cases can be subdivided into two groups:

1. Families in which some individuals have Medicare and no individuals over 65 lacked Medicare. This analysis is more complicated because there are no readily available guidelines explaining how exchange subsidies will be determined for households with one adult purchasing exchange insurance and other members receiving Medicare.

In order to complete the analysis, we exclude individuals with Medicare from the family size calculation and use $\frac{1}{2}$ of the family income to calculate where the household stands relative to the federal poverty line.

We exclude premiums for spouses and dependents' Medicare supplemental health coverage from both "City costs" and "annuitant costs" in our analysis.

2. Families in which some individuals were 65 or older and lacked Medicare

We follow the same procedures outlined above, however we assume these households are ineligible for exchange subsidies.⁶

Caveats

There are a number of limitations to this analysis. Here, we highlight a few:

⁵ As child dependents with Medicare are exceedingly rare, we assumed that no children had Medicare and therefore that all children would require coverage through the exchanges.

⁶ Recall that Medicare-eligible individuals are not eligible for subsidies. Only a small number of households in this category could conceivably qualify for subsidies), specifically those with a member under age 65. 85% of the households in this group do not contain individuals under 65, leaving a maximum of 170 families who could be affected by this simplifying assumption.

1. We simplify the insurance coverage decisions of households by assuming that all retirees will move to the exchange. In reality, some households may have access to much more affordable insurance options through a spouse's employment. By assuming none of the households exercise this option, the analysis projects much higher costs for annuitants than is likely to be the case (holding all else constant).
2. For city retirees, we do not observe actual family structure; rather we infer it from insurance coverage decisions. Thus our estimates of total household size and income will both be too small. As poverty cutoffs are a ratio of the two, whether this contributes to under- or over-estimates of annuitant costs is unknown.