



How CBO and JCT Analyze Major Proposals That Would Affect Health Insurance Coverage

Summary

The Congressional Budget Office and the staff of the Joint Committee on Taxation (JCT) estimate the budgetary effects of most types of major legislative proposals that would affect both spending and revenues using a process that involves many steps and many analysts.¹ This report focuses on the process that the agencies use to analyze proposals affecting health insurance coverage for people under age 65, such as legislation that would make major changes to the Affordable Care Act (ACA).

The undertaking is a joint effort: CBO takes the lead in estimating the changes in coverage, premiums, and federal spending, and JCT takes the lead in estimating the tax-related budgetary effects, including those related to changes in the exclusion for employment-based insurance and premium tax credits provided for coverage obtained in the health insurance marketplaces established under the ACA. (This report does not discuss how the agencies project a proposal's macroeconomic effects and their budgetary impact.)²

The process for analyzing health care legislation has much in common with that used to analyze other types of major proposals. It includes the following steps:

- *Develop an analytic strategy.* Analysts from the two agencies first review the proposal and identify the key effects it would have. They then examine implementation issues and assess the potential timing of effects. As part of the process of developing an analytic strategy, the agencies consult with outside experts and review existing evidence.
- *Model the effects of the proposal.* The agencies use several models—including CBO's health insurance simulation model (HISIM), models of Medicaid enrollment and costs, and JCT's individual tax model—to analyze the proposal's effects on health insurance coverage and the federal budget. CBO and JCT translate the features of the proposal into changes, relative to current law, in the price and generosity of health plans and in other factors affecting decisions of all parties involved—states, employers, insurers, individuals, and others—to model the proposal's effects on health insurance coverage and premiums. The agencies then use the results from those models as building blocks to project the proposal's budgetary effects—including those on the costs of the Medicaid program and on receipts of individual income taxes.
- *Review and write about the estimate.* When an estimate of the proposal's total budgetary effect is nearly complete, CBO and JCT thoroughly review it and write up the results, along with a detailed explanation of how the agencies arrived at them.

1. For information about the agencies' general processes for producing estimates, see Congressional Budget Office, *How CBO Prepares Cost Estimates* (February 2018), www.cbo.gov/publication/53519; and Joint Committee on Taxation, *Revenue Estimating Process* (January 2017), www.jct.gov/publications.html?func=startdown&id=4969.

2. For information about such estimates, see Congressional Budget Office, "Dynamic Analysis," www.cbo.gov/topics/dynamic-analysis.

Develop an Analytic Strategy

Although CBO and JCT do not finish developing an analytic strategy for a major proposal until Congressional staff have provided the specifications of the proposal, an official request has been made to analyze it, and competing demands on the agencies' time allow them to begin work on it, they typically begin thinking about how they might analyze it well before that point. The agencies often provide informal technical assistance to Congressional staff while the staff is still drafting the proposal. For example, they might review a draft, query staff about the proposal's intent, identify ambiguities in the legislative language, or answer technical questions. CBO and JCT might also identify possible obstacles to implementing the proposal or unintended consequences it might have. Such discussions are usually confidential because they typically occur before a proposal has been made public. In keeping with their mandates to provide objective, impartial analysis, neither agency makes any policy recommendations.

Review the Proposal to Understand Its Specifications and Intent

CBO and JCT usually start by analyzing the policy specifications that Congressional staff provide. The agencies generally ask the staff clarifying questions to confirm that they have understood the authors' intent, including the intended timing for implementing the proposal. Sometimes the details of the proposal's specifications do not exactly match the authors' intentions, so answering such questions may lead Congressional staff to refine the specifications to better align them with those intentions.

CBO and JCT study the proposal to identify the specific aspects of current law that would be modified. The agencies' attorneys assess how the proposal would interact with provisions of current law that would be kept in place. They might, for example, identify where the proposed legislation would override state laws. The agencies' analysts also examine how the proposal differs from any earlier versions that they have previously reviewed.

Once they receive the legislative language, which sometimes occurs late in the estimating process, CBO and JCT carefully read the text and study the proposal to verify that the legislative language is consistent with the intent that the committee staff expressed in its previous conversations with the agencies and in summaries of the proposal's specifications. If there are any discrepancies between the legislative language and the agencies'

understanding of the legislative intent, CBO and JCT estimate the effects of the legislative language (taking extra time to do so if needed) because that is what could eventually become law.

Identify the Key Effects That the Proposal Would Most Likely Have

The agencies' analysts consider how a proposal might change the decisions about health insurance made by state governments, affect employers and insurance markets, and change people's incentives to choose a particular type of coverage. CBO and JCT's models are, by their nature, simplifications that are intended to focus on the main ways in which a proposal would affect health insurance coverage and the federal budget. In developing an analytic strategy, analysts identify the changes in policy that are most likely to have key effects on coverage or cost; those are the changes that CBO and JCT model.

Sometimes that process is straightforward, such as when a proposal would change the eligibility requirements for a tax credit. But sometimes a proposal involves more complex outcomes—such as when it specifies that states would have discretion in how to implement a policy. In those cases, analysts identify different ways in which states might respond to the proposal. For example, when analyzing the American Health Care Act of 2017, which would have allowed states to obtain waivers exempting them from complying with certain provisions of the ACA, CBO and JCT focused on three different ways in which states might respond: Some states would choose not to obtain waivers, others would obtain waivers that would allow insurers to provide fewer benefits, and still others would obtain waivers that would also allow premiums in a substantial portion of the nongroup market to be set on the basis of an individual's health status. In the latter two cases, the effects of the proposal would differ in important ways from those in the first case.³

Assess the Timing of the Proposal's Effects

CBO and JCT identify the types of regulations and other administrative infrastructure that would be needed to implement key provisions of the legislation and how long it would take to put them in place. Whether a proposal would build on a current system or require a new

3. See Congressional Budget Office, cost estimate for H.R. 1628, the American Health Care Act of 2017, as passed by the House of Representatives (May 24, 2017), www.cbo.gov/publication/52752.

one affects CBO and JCT's estimation of how quickly the legislation could realistically be implemented, even in cases in which the proposal specifies a date by which the policy changes must be implemented. If the agencies conclude that new administrative infrastructure—such as eligibility verification systems—would be needed, then they estimate how long it would take for that change to become operational on the basis of information about other times that infrastructure of a similar complexity has been developed.

The agencies also estimate how quickly states, employers, insurers, and individuals would respond to legislation—namely, how long it would take states to make institutional changes, employers to adjust their compensation plans, insurers to revise their insurance offerings, and individuals to change their insurance coverage. The agencies then consider how those behavioral responses would change over time and when the effects of the legislation would reach a relatively steady state in which enrollment and premiums stabilized. To help inform their assessment, CBO and JCT look to cases when similar large-scale programs were implemented in the past, such as states' expansions of Medicaid and the establishment of the Children's Health Insurance Program and of certain tax credits, including subsidies provided through the marketplaces.

Consult With Outside Experts and Review Existing Evidence

To help inform their understanding of states', employers', and insurers' behavior and of the institutional factors that people would face under the legislation, CBO and JCT talk to people in government and industry, such as state insurance commissioners, insurers, actuaries, and employers, as well as to academics and other outside experts, to the extent that they are able to do so without revealing confidential information about the proposal. (If the proposal is confidential, the agencies ask for permission from Congressional staff before discussing it outside of CBO and JCT.) The agencies may also consult with members of CBO's Panel of Health Advisers, a group of widely recognized experts on health policy and the health care sector.⁴ In addition, CBO and JCT may consult with executive branch agencies, such as the Centers for Medicare & Medicaid Services and the Treasury Department. Those discussions revolve around how the

executive agencies might respond to such a proposal and how the proposal would interact with current law. CBO and JCT carefully consider all of the information that they obtain from those outside experts, but they ultimately rely on their own independent analyses.

In addition, the agencies review the empirical evidence from existing research studies for information about the anticipated behavioral responses to the proposal. For example, the agencies recently reviewed the economic literature on the nongroup market that existed before the enactment of the ACA, including data on premiums, coverage, competition, and the effects of the insurance reforms enacted by several states in the mid-1990s. CBO and JCT also considered the markets in states that did not attempt such reforms. That information was used to help inform the agencies' projections of how states might waive certain rules imposed by the ACA, such as those that would not allow premiums in the nongroup market to be set on the basis of an individual's health status. Throughout the estimating process, CBO and JCT also track and review any estimates by other organizations of the proposal's effects on cost and coverage.

Model the Effects of the Proposal

CBO and JCT rely on several models of the health insurance system to analyze behavioral responses to proposals. The most important of those models—CBO's health insurance simulation model, models of Medicaid enrollment and costs, and JCT's individual tax model—are built to optimize use of the following types of data: information about the health insurance coverage of all people under age 65, records of enrollment and expenditures in Medicaid, and tax returns with detailed information on income.

For provisions of a proposal affecting the nongroup market or employment-based insurance, the effects on health insurance coverage and premiums are typically estimated using HISIM, which is designed to model individuals' and employers' coverage choices on the basis of projected market conditions. For provisions that would primarily affect funding available to states—such as limiting Medicaid spending to a specified amount per enrollee or supplying funds that would have been provided to pay for coverage for states' residents in the absence of a waiver (known as pass-through funds)—the amount of funding provided is estimated, and then the effects on insurance coverage and on the budget stemming from that funding are modeled. For proposals that require

4. For a list of current members of the panel, see the "Panel of Health Advisers" page on CBO's website (www.cbo.gov/about/processes/panel-health-advisers).

modeling multiple scenarios, such as sets of states' responses, the agencies estimate both the proportion of the population that would be affected by each scenario and the budgetary effects it would have.

For a proposal that would affect many different components of the health care system, modeling of several factors—responses of states, employers, insurers, and individuals—is done using a multitrack approach. For example, the agencies relied on such an approach to analyze the effects of the Better Care Reconciliation Act of 2017, which included provisions that would have made major changes to Medicaid and to tax credits and would have made it easier for states to obtain waivers allowing them to change the minimum standards of coverage that insurers in the nongroup and small group markets must meet.⁵

CBO and JCT use information about the behavior of states, employers, and insurers to make initial projections of certain aspects of their responses that HISIM cannot project. The agencies incorporate those initial projections as inputs to HISIM, which accounts for interactions between those responses and the responses of individuals. The estimated budgetary effects—including those on Medicaid spending and on revenues—are derived from those estimates (see Figure 1).

Projections of Potential Actions by States

States' responses may be an important part of the estimates of the budgetary effects of a proposal if, for example, the proposal would give states flexibility in spending federal funds related to health insurance coverage or allow them to modify rules governing the nongroup market. In such cases, CBO and JCT analyze and project states' behavior. The agencies collect information on states' past actions that are relevant to the legislation, such as previous expansions of Medicaid coverage, past regulation of the nongroup insurance market, and previous instances of states' using federal grants. Those historical tendencies—not information about the current political dynamics within states—form the basis for the projections. CBO and JCT also consider how any funding made available under the proposal would be allocated to states, including the amount of funding each state

would be eligible to receive and whether funding would be contingent on states' meeting certain requirements.

Using that analysis, CBO and JCT project the approximate shares of the population residing in states that would fall into different broad categories of responses to a proposal. Because of uncertainty regarding states' responses, CBO and JCT's estimates reflect an assessment of the probabilities of different outcomes (without any explicit prediction of which states make which choices) with the goal of being in the middle of the distribution of possible outcomes. And because some groups of states would be in a position to respond more quickly than others, the agencies use information on past actions by states to assess the timing of the states' responses to new policies and develop projections of how those shares of the population would change over time.

Projections of Employers' Behavior

CBO and JCT use HISIM to estimate changes in the number of employers who would offer insurance to their employees on the basis of changes in the availability and price of alternative coverage options under a proposal. But certain aspects of employers' responses have to be assessed separately.

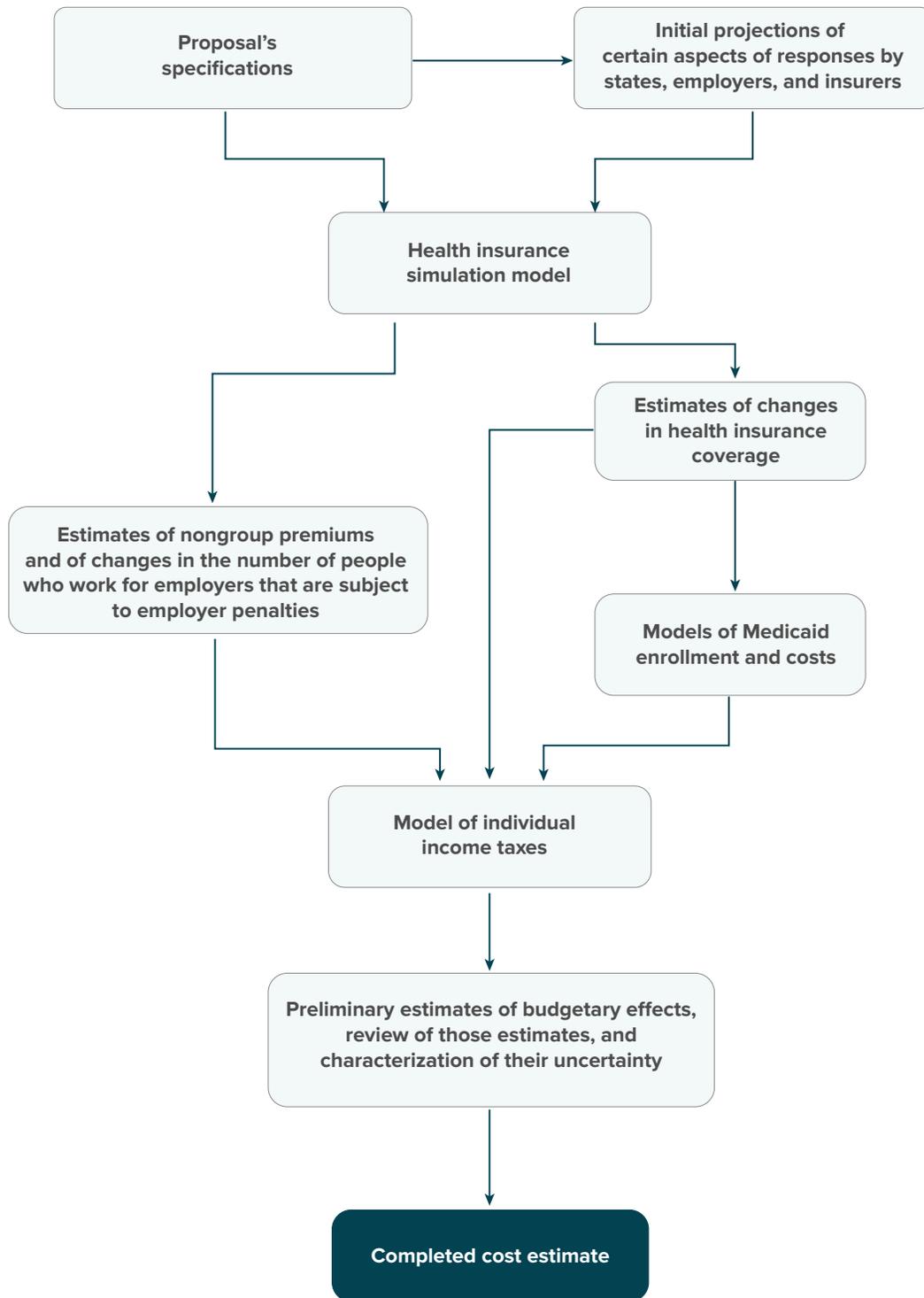
HISIM was developed, in part, to estimate employers' behavior, and it incorporates research literature estimating the responsiveness of employers to changes in the price of insurance options by the size of the firm and other characteristics. When modeling employers' decisions about the insurance that they would offer to employees, CBO and JCT account for employers' perceptions of their employees' preferences for receiving compensation in the form of insurance or wages. Those preferences depend on the relative attractiveness of employment-based plans and other alternatives, such as Medicaid and subsidized insurance in the nongroup market, which vary depending on the income, age, and health characteristics of employees.

The employer decisionmaking framework is derived from labor market research that indicates that employers structure their compensation packages to attract the best employees at the lowest cost. Certain provisions—the tax exclusion for employment-based coverage, for example—can play a big role in that calculation. For analysis of certain proposals, the framework built into HISIM is augmented to account for the fact that employers are more likely to offer coverage when the scope of benefits

5. See Congressional Budget Office, cost estimate for H.R. 1628, the Better Care Reconciliation Act of 2017, an amendment in the nature of a substitute (June 26, 2017), www.cbo.gov/publication/52849.

Figure 1.

An Example of CBO and JCT’s Process: Analysis of the Better Care Reconciliation Act of 2017



Source: Congressional Budget Office and the staff of the Joint Committee on Taxation (JCT).

and actuarial value of alternative sources of coverage differ significantly from typical employment-based insurance or when the availability and affordability of such alternatives in the future are unclear.⁶

However, HISIM does not account for the fact that it takes time for employers and individuals to learn about changes in laws or policies and respond to them and that employers' responses to alternative coverage options may therefore change gradually over time. Employers do not typically make abrupt decisions about offering coverage from year to year. Those who have offered insurance in the past are more likely to continue offering insurance to their employees, and CBO and JCT take that tendency into account.

In addition, if a proposal would affect a particular subgroup of employees—if, for example, it would significantly change the eligibility for premium tax credits in the marketplaces—CBO and JCT would seek evidence from the research literature or information from industry experts and then incorporate information relevant to that subgroup into their analysis.

Projections of Insurers' Participation and Market Stability

CBO and JCT use economic theory, historical evidence, and feedback from outside experts to evaluate the likelihood that insurers would participate in the nongroup market under the proposal. For example, some insurers who participate in the nongroup market under current law might choose to exit that market under a proposal, thereby reducing competition among insurers and potentially increasing average premiums, which would affect individuals' and employers' decisions about health insurance coverage. Conversely, some insurers who do not participate in the nongroup market under current law might choose to enter the market under a proposal, depending on the specifications of the policy. Insurers' participation is not modeled in HISIM, so this assessment is done outside that model.

The agencies also consider market stability and uncertainties surrounding the nongroup market. For example, if HISIM's results showed that premiums for certain groups would enter into an unsustainable spiral in which average costs continued to rise as an increasing number of healthier people left the market, CBO and JCT would anticipate that insurers would leave the market until eventually none were willing to participate and that people who previously had coverage through the nongroup market would either obtain coverage through other sources or be uninsured. Sometimes a proposal includes changes that would increase the uncertainties surrounding the stability of the marketplaces, such as to what extent certain people with poor health would be more likely than healthier people to purchase health insurance. CBO and JCT incorporate that information into their projections of premiums and of the attractiveness of marketplace plans under the proposal.

Projections of Plan Offerings and Individuals' Responses

In CBO and JCT's analysis, the number of individuals who would enroll in different insurance options under a proposal depends on the price of the options for which they would be eligible, their eligibility for Medicaid, and certain additional factors (such as how easily individuals and employers could obtain details about the price and availability of coverage options offered in the nongroup market). The agencies calculate values for such factors on the basis of the proposal's specifications, historical experience, and data from the insurance industry. Furthermore, CBO and JCT account for the attractiveness of plans on the basis of such characteristics as the size of the insurer's provider network, the amount of the deductible, the insurance company's marketing, and any perceived stigma associated with the marketplaces or Medicaid. Those values are then used in HISIM to model individuals' responses.

The agencies group people by income and by health insurance needs and then model separate responses for those different groups. For example, if a proposal would significantly increase deductibles in the nongroup market (that is, if beneficiaries would be required to pay large amounts for covered health care services out of pocket before the insurer began to pay), some people—especially those with low incomes—would, CBO and JCT estimate, remain uninsured or obtain coverage through sources outside that market, such as employment-based coverage.

6. For further discussion of how employers' behavior is modeled in HISIM, see Congressional Budget Office, *CBO and JCT's Estimates of the Effects of the Affordable Care Act on the Number of People Obtaining Employment-Based Health Insurance* (March 2012), www.cbo.gov/publication/43082.

Projections of Interactions of Effects on Coverage and Premiums

CBO and JCT use HISIM to simultaneously estimate individuals', families', and employers' responses to new health insurance coverage options. They also use the model to make baseline projections of insurance coverage for the entire population under age 65. In addition, the agencies use HISIM to simulate premiums, which are a key input into estimates of the subsidies available through the marketplaces. CBO and JCT periodically update the model to incorporate feedback from outside analysts as well as new research and data.

CBO's Health Insurance Simulation Model. HISIM captures how individuals' and employers' choices about insurance coverage might change on the basis of the relative price and generosity of the different health insurance options available, including employment-based insurance, insurance purchased through the marketplaces, Medicaid, Medicare, or being uninsured. In the model, individuals are assigned to employers, and offers of insurance by employers depend on the characteristics of the employees assigned to them. The model also incorporates information from the research literature about the responsiveness of individuals to changes in eligibility for public coverage. Using that detailed information, HISIM simulates the different decisions about health insurance that individuals in its sample population would make under a proposal on the basis of their income, family size, health status, and the insurance options available to them.

HISIM incorporates a wide range of data obtained through the Census Bureau's Survey of Income and Program Participation, a survey of a representative sample of individuals and families that includes detailed information on respondents' demographic characteristics, income, employment, health status, and health insurance coverage. The coverage projections produced by the model are calibrated using current survey data and administrative data on participation in the marketplaces and in Medicaid.⁷

How Information About HISIM Is Provided and Feedback Is Obtained. CBO and JCT regularly make presentations about projections of health insurance

coverage and the methods used to prepare those projections—including detailed discussion of how HISIM works.⁸ Those formal presentations are complemented by more frequent informal discussions with experts about various modeling issues. Feedback from those interactions, along with reviews of research and availability of new data, informs updates to the model.

CBO also has a dedicated section of its website with additional information about the methods it uses to analyze health insurance coverage.⁹ Information available there includes an overview of the model, a detailed discussion of data sources used to measure health insurance coverage underlying HISIM, and a technical description of the model itself.¹⁰

Projections of Medicaid Enrollment and Costs

For proposals that would broadly change the sources of insurance coverage for people under age 65, CBO and JCT generally use estimates from HISIM of the number of people who would be enrolled in Medicaid as inputs to a more detailed Medicaid model to estimate the cost

7. The surveys used for that calibration are the National Health Interview Survey, the Household and Insurance Components of the Medical Expenditure Panel Survey, and the Current Population Survey.

8. For example, see Jessica Banthin, Deputy Assistant Director, Health, Retirement, and Long-Term Analysis Division, Congressional Budget Office, "An Overview of CBO's Estimates of Federal Subsidies for Health Insurance for People Under Age 65: 2017 to 2027" (presentation at a Congressional Research Service seminar, Washington, D.C., January 10, 2018), www.cbo.gov/publication/53447; Sarah Masi, Principal Analyst, Congressional Budget Office, "Estimating the Costs of Proposals Affecting Health Insurance Coverage" (presentation at a Congressional Research Service seminar, Washington, D.C., January 10, 2018), www.cbo.gov/publication/53448; and Alexandra Minicozzi, Unit Chief, Health Insurance Modeling Unit, Congressional Budget Office, "Modeling the Effects of the Individual Mandate on Health Insurance Coverage" (presentation at a meeting of CBO's Panel of Health Advisers, Washington, D.C., September 15, 2017), www.cbo.gov/publication/53105. Other presentations are available at www.cbo.gov/taxonomy/term/1634/latest?type=5.

9. See Congressional Budget Office, "Methods for Analyzing Health Insurance Coverage," www.cbo.gov/topics/health-care/methods-analyzing-health-insurance-coverage.

10. See Congressional Budget Office, "The Health Insurance Simulation Model Used in Preparing CBO's 2018 Baseline" (February 2018), www.cbo.gov/publication/53592; Jared Maeda and Susan Yeh Beyer, "How Does CBO Define and Estimate Health Insurance Coverage for People Under Age 65," *CBO Blog* (December 20, 2016), www.cbo.gov/publication/52352; and Congressional Budget Office, *CBO's Health Insurance Simulation Model: A Technical Description* (October 2007), www.cbo.gov/publication/19224.

of that program to the federal government under the proposal. That model first divides Medicaid enrollees into eligibility groups, such as disabled children or nondisabled children, because each group has a different average per capita cost based on the underlying health risk of the group and the share of the program's costs for those enrollees that is paid by the federal government. The agencies use analysis of historical spending to apply per capita costs to each group and project those costs over the next 10 years.

Proposals that would make large-scale changes to Medicaid involve additional modeling. If, for example, a proposal would place caps on per capita costs of Medicaid enrollees, CBO and JCT would estimate the federal savings that would result from those caps by calculating the difference between the per capita cost growth projected under current law and the growth projected under the proposal. Furthermore, if federal caps on Medicaid spending limited it to amounts lower than those projected under current law, states would, in the agencies' estimation, respond to the cost pressures by lowering payment rates to providers, limiting optional services, or reducing enrollment, either by restricting Medicaid eligibility or by changing enrollment policies and procedures in ways that would make enrollment in the program more difficult.

The agencies use other models as needed to examine the specific factors involved in a proposal. If a proposal would impose work requirements on Medicaid enrollees, CBO and JCT would consider several factors to assess its effects on Medicaid enrollment and spending. Examples of such factors include the degree of flexibility that states would be given to implement that requirement (in terms of timing or whether states would have the option of not implementing it at all), whether the requirement would apply to all Medicaid enrollees or if certain eligibility groups would be exempted from working, and the type of work that would satisfy the requirement. Similarly, if a proposal would change the number of Medicaid enrollees or uninsured people, CBO and JCT would analyze how the proposal would affect the allotments from Medicare that states receive to help cover the costs of uncompensated care in certain hospitals.

Projections of Changes in Individual Income Taxes

Many of the subsidies for individuals to purchase health insurance and the penalties for employers who fail to provide health insurance coverage to their employees are

implemented through the Internal Revenue Code. The three largest tax subsidies most often affected by legislative proposals related to health insurance coverage are these:

- The exclusion from taxation of contributions that employers make to their employees' health care benefits,
- The refundable tax credit for the purchase of insurance through the marketplaces that people who meet certain income and other requirements are eligible for, and
- The tax deduction for the cost of purchasing insurance that self-employed individuals (who are not eligible for the tax exclusion for employment-based coverage) can take.

JCT is typically responsible for estimating the revenue effects of proposals that would change tax liability.

JCT's Individual Tax Model. Because proposals affecting health insurance coverage are generally expected to affect tax liability, estimates of changes in coverage and premiums produced by HISIM and other models are used as inputs to JCT's individual tax model, which is used to calculate the budgetary effects of those coverage and premium changes. The specific inputs to the individual tax model include the following:

- The changes in the number of people who would receive employment-based coverage;
- The changes in the number of people who would purchase nongroup coverage through the marketplaces;
- The changes in the number of self-employed individuals who would purchase nongroup coverage;
- The changes in the number of people who would work for employers that would be subject to employer penalties; and
- The change in average premiums in the marketplaces.

Those changes in health insurance coverage and premiums are estimated separately for individuals and for families in different income groups.

JCT's individual tax model is used to determine how those changes in coverage and premiums would affect the tax liability of individuals. That model simulates the effects of legislative proposals on federal income tax and payroll (or social insurance) tax liabilities for a representative sample of over 350,000 individuals (including nonfilers, for whom it imputes returns). The model contains data on sources of income and on deductions, exemptions, and credits claimed by each taxpayer. It also includes imputed values for each individual's type of health insurance coverage, if any, along with the cost of that coverage.¹¹ The agencies use the model to estimate the overall change in federal tax liability that would result from employers' offering different health insurance plans to their employees than those they would offer under current law.

How Changes in Coverage Affect Revenues. Changes in insurance coverage often affect federal tax revenues because they affect how much of employees' total compensation is taxable (wages, for example) and how much is exempt from taxation (such as employers' contributions to their employees' health insurance). The total compensation that employers pay their employees is determined by the labor market, and that labor market outcome is largely shaped by the value that employees contribute to firms' ability to generate income. CBO and JCT estimate that there is a trade-off within total compensation between wages and other benefits like health insurance—that is, if employers offered more nonwage compensation, they would pay correspondingly lower wages (and if they provided less nonwage compensation, they would increase wages). Over time, employers make adjustments to the mix of wages and benefits that they provide in response to changes in subsidies for health insurance because of that trade-off.

For example, one way that the ACA affected employers' decisions to provide their employees with health insurance was by establishing subsidies to help individuals who do not have access to employment-based coverage purchase health insurance through the marketplaces. When the ACA was enacted, CBO and JCT anticipated that some employers would choose not to provide health insurance to their employees so that the

employees could take advantage of those subsidies. The agencies estimated that market forces would cause those employers to maintain the total compensation they paid to their employees by increasing their wages, which are taxable. That wage increase would, in turn, lead to an increase in income and payroll taxes. Self-employed individuals who decided to purchase health insurance coverage would be able to deduct the cost of that coverage from their taxable income from self-employment, reducing federal income tax revenues. The agencies used JCT's individual tax model to estimate those effects of the ACA. For analysis of proposals that would alter the ACA's provisions, they use the model in a similar manner to project aggregate changes in federal income and payroll taxes that would result from changes in the mix of compensation.

JCT's individual tax model is also used to estimate the cost of the federal subsidies available to taxpayers who purchase health insurance through the marketplaces. That model's databases contain the information needed to calculate taxpayers' modified adjusted gross income, which is used to determine whether they are eligible to receive the subsidies. In addition, the agencies use historical data on tax administration to assess the anticipated effects on coverage and cost of any administrative considerations or factors affecting compliance (such as the availability of information that would help detect erroneous claims on tax returns).

Review and Write About the Estimate

Analysts and managers review the results of the analysis several times throughout the estimating process for objectivity and analytical soundness. That rigorous process involves multiple people at different levels in CBO and JCT. Because simulating a proposal's effects on health insurance coverage with HISIM requires a substantial amount of computing time, a group of a dozen or more analysts from CBO and JCT review the results for one or more representative years in the 10-year projection period early on in the process to evaluate the separate components of the proposal and confirm that those components were incorporated into the analysis as intended. If, for example, the agencies conclude that the analysis has not captured the effect on premiums of decreased competition among insurers, they may make adjustments to better account for those effects and restart the modeling process. If a proposal could be implemented in more than one way by states, analysts would compare the coverage and cost changes that

11. For more information, see Joint Committee on Taxation, *Estimating Changes in the Federal Individual Income Tax: Description of the Individual Tax Model*, JCX-75-15 (April 23, 2015), pp. 17–18, www.jct.gov/publications.html?func=startdown&cid=4776.

resulted from modeling each approach with the others to ensure that all of the results produced by the model were plausible.

After reviewing one or more years in the projection period, CBO and JCT assess results for the entire 10-year projection period with the aim of having the final point estimates represent the middle of the distribution of possible outcomes. As part of that process, the agencies pay particular attention to changes in health insurance coverage and premiums in the first few years following the effective date of the proposal to ensure that the analysis has captured the pace at which people and employers would respond to changes under the proposal. They compare the results with those from their previous analyses of similar proposals to be sure that the differences in projected outcomes logically reflect differences in the specifications of the proposals or differences in the baseline projections used in modeling the proposal. The agencies also check for programming errors in their models or unexplained results. Finally, to help characterize the main sources of uncertainty, CBO and JCT assess how much the overall results would change if key inputs differed.

In their formal written estimate, the agencies explain their estimate of the proposal's net budgetary effect and the changes in coverage and premiums that form the basis of that estimate, and they discuss the ways that elements of the proposal would generate those changes. Before sending the completed estimate to the Congress and posting it on CBO's website, a group of analysts, senior staff, and managers from CBO and JCT carefully reviews it for quality and clarity.

This report is part of the Congressional Budget Office's continuing effort to make its work transparent. In keeping with CBO's mandate to provide objective, impartial analysis, the document makes no recommendations.

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