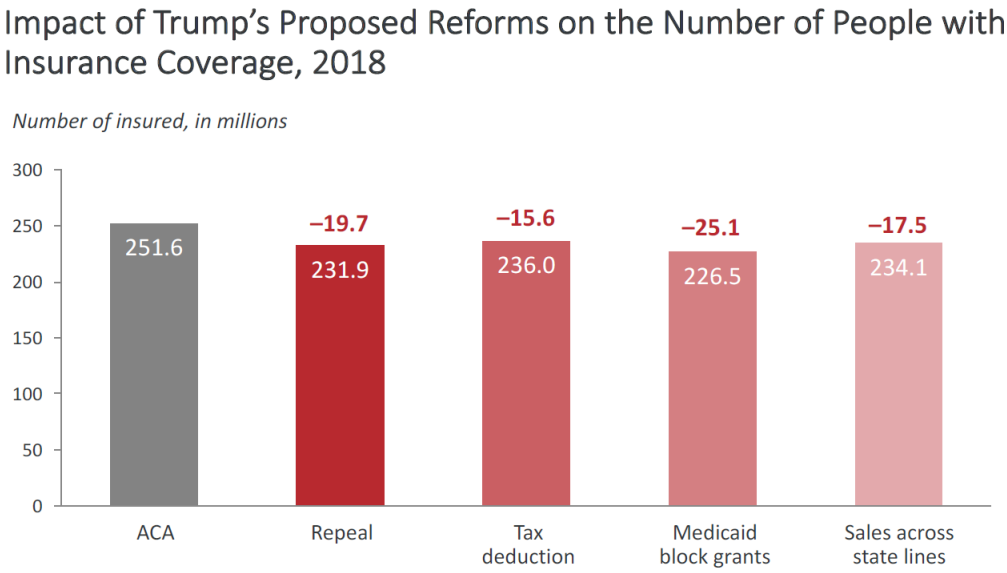
CHAPTER 14: POLICY ANALYSIS OF INSURANCE REFORMS

Overview

Many of the highest profile policy analyses examine the impact of health reform and coverage expansion policies (for example, the Affordable Care Act, single payer). Given their prominence, it is worth understanding how modelers approach policies that will have ripple effects throughout the system.



From: Saltzman E and C Eibner. Donald Trump's Health Care Reform Proposals: Anticipated Effects on Insurance Coverage, Out-of-Pocket Costs, and the Federal Deficit. The Commonwealth Fund. September 2016.

Most of the models used to predict the impact of health reform policies are large, complex, proprietary, and have been developed over many years. In some cases, they are a product that firms (like the Lewin Group) or individuals (for example, Professor Stephen Parente at the University of Minnesota) market and sell. So we will not try to replicate them. Instead, the goal is to try to understand how they work. How do they predict how a policy, like subsidizing individuals to buy private insurance, will affect coverage rates, employer behavior, federal spending, etc.?

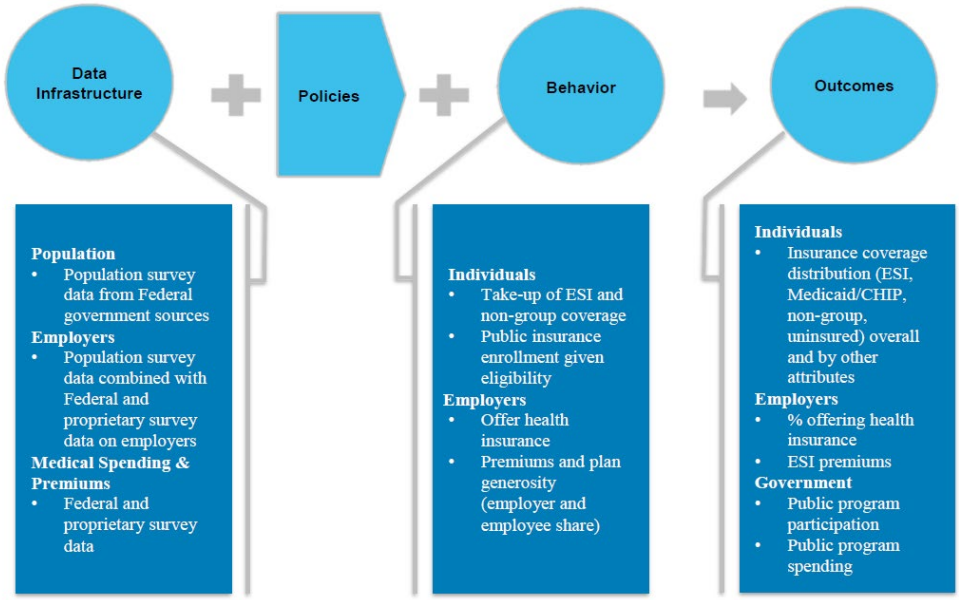
We are going to draw heavily on a paper by Sherry Glied and Nicholas Tilipman (Simulation Modeling of Health Care Policy *Annual Review of Public Health* 2010;31:439-455). Dr. Glied worked in the Obama administration during the passage of the Affordable Care Act and has conducted research on which some key assumptions behind these models are based.

Health reform models have played an important role in assessing, designing, and gaining support for coverage expansions. But that wasn't always the case. Glied and Tilipman write:

> ministrations. Over this period, without the constraint of a balanced budget in place, the importance of budget estimators diminished (115). When President Lyndon Johnson developed the Medicare program, for example, he waved away objections about the cost of the program saying, "I'll go a hundred million or a billion on health or education. I don't argue about that any more than I argue about Lady Bird [Mrs. Johnson] buying flour. You got to have flour and coffee in your house and education and health" (88).

Key assumptions

The models rely on a number of assumptions.



From: Abraham JM. Predicting the effects of the Affordable Care Act: A comparative analysis of health policy microsimulation models. State Health Reform Assistance Network. Robert Wood Johnson Foundation. Policy Brief. March 2012.

Parameters	Issues
Baseline	
Uninsured counts	• No administrative count of uninsured
	• Discrepancy between surveys (CPS, MEPS, SIPP) in uninsured counts
	• Selection of appropriate uninsured definition (full year, part year, etc.)
Price of health insurance	• Poor data on nongroup prices
	• Information on loading is dated
Provider supply	• Difficult to obtain data on physician and hospital availability at the local level
Expenditures	• MEPS data omits services including in the National Health Accounts
	• National Health Accounts report only aggregate data and cannot stratify by subpopulation
Behavioral	
Coverage participation	• Significant variation in estimates of take-up rates for public programs, price elasticity of demand, and crowd-out
	• Family decisions surrounding public program enrollment can affect take-up
Employer behavior	• Treating each worker as representative of his or her firm excludes characteristics of other workers at the firm
	• Few studies on the nature of actual firm decision rules
	• Estimates on the firm's decision to offer health coverage based on the price of firm offer vary
Nonprice factors	• Difficult to incorporate nonprice barriers to enrollment (administrative barriers, rules limiting coverage, perceived benefits, stigma, etc.)
Provider behavior	• Estimates of the relationship between public program fees and provider willingness to participate vary
	• Provider behavior is affected by level and nature of payment

There are "counting" assumptions. For example, how many people are uninsured? The Congressional Budget Office's model bases assumptions on the Survey of Income and Program Participation, the Medical Expenditure Panel Survey, the National Health Expenditure Accounts, and the National Compensation Survey.

There are a number of behavioral assumptions. For example, how will an increase in the share of a firm's workers who are eligible for subsidized individual coverage affect the firm's decision to offer coverage? Will a firm drop coverage if a large share of its workers are eligible for Medicaid or other free public programs? Will individuals limit their income to stay under the threshold to qualify for Medicaid?

Just because a person is eligible for free or heavily subsidized coverage does not mean they will take advantage of it. (There is an important lesson here generally: just because you make a product or service free does not mean everyone will use it.) Models incorporate assumptions to reflect actual, rather than optimal, use and enrollment of public programs.

Non-price factors. Most insurance reform models base participation in coverage primarily on the cost of coverage. Many other factors, however, affect participation, including administrative hurdles (complex application forms, recertification processes, etc.), rules limiting coverage to those without alternative coverage available, the nature of coverage offered, the extent of beneficiary educational efforts, and stigma associated with public programs (43, 100, 109). Many policy proposals would alter

The earliest health reform models expressed behavioral responses to policy changes in terms of elasticities. For example, a modeler might assume there are 10,000 small firms,

each with 10 workers, and that a 10% decrease in the price of insurance will increase the share of small firms that offer coverage to employees by 9%. A model might include assumptions about the elasticity for individual coverage, employers' decision to offer coverage, and workers' decision to buy insurance through their employer.

Source	Reported elasticity	Universe
Feldman et al. (1997) (47)	Single cov: −3.91; family cov: −5.82	2000 small firms in Minnesota (1993)
Finkelstein (2002) (48)	Range −0.42 to −0.54	Canadian General Social Surveys (1991–1994), Quebec
Gentry & Peress (1994) (52)	−1.8	U.S. workers (1988–1992)
Gruber & Lettau (2000) (62)	Range −0.31 to −0.41	Workers (1983–1995)
Hadley & Reschovsky (2002) (66)	−0.54	Small-firms in 1996
Helms et al. (1992) (68)	Range by state: −0.1 to −1.1	Small-firms in 8 states (1991)
Leibowitz & Chernew (1992) (83)	To premiums: −0.8 to subsidies: −2.9	U.S. workers (1989)
Marquis & Long (2001) (90)	−0.14	Workers in 10 states (1993)
Morrisey et al. (1994) (96)	−0.92	Small-firms (<50) in 1993
Royalty (1999) (114)	−0.63	Full-time, nonelderly U.S. workers (1988 and 1993)
Thorpe et al. (1992) (121)	Range −0.07 to −0.33	Small-firms (<20) in Albany, Poughkeepsie, and Brooklyn (1988)

Another approach to modeling behavior, which is used in some of the newer models, is to specify individual and firm utility and base predictions on utility maximizing behavior. For example, the utility of an individual may depend on whether or not they have insurance and money (a stand-in for all other goods). Individuals choose whether or not to buy coverage:

Utility(insured) = U(Covered, Income - premium)

Utility(not covered) = U(Not covered, Income)

Individuals will buy coverage if the utility of being insured, which requires that they pay a premium, is greater than the utility of not being covered.

Buy coverage if: Utility(insured) > Utility(not covered)

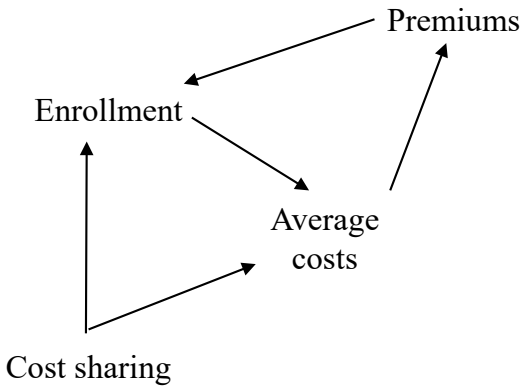
Government policy takes the form of a subsidy:

Utility(insured) = U(Covered, Income - premium + subsidy)

The size of the subsidy affects the purchase decision. We cannot actually observe individuals' utility functions. We can infer information about the functions based on actual behavior (the same way we can estimate price elasticities).

The actual utility functions used in models include more arguments describing the characteristics of insurance. For example, utility may depend on premiums, copayments, deductibles, and whether the coverage is private or public (if you think public coverage has a stigma or requires complex application forms). Individuals may select from amongst multiple different types of coverage. Utility functions may include parameters that vary the utility that individuals obtain from coverage based on their age, health status, marital status, etc.

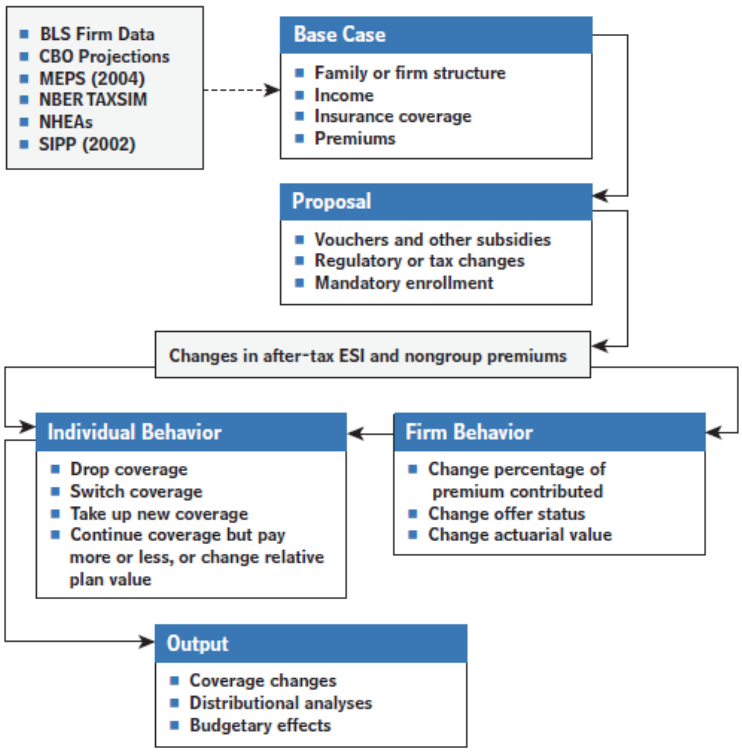
Models will incorporate feedback loops. For example, under community rating, premiums reflect the average costs of the pool of people who buy coverage. Who buys coverage will depend on premiums.



Modelers create "synthetic firms" made up of workers, and each worker has his or her own utility function. Firms consider the utility of their workers when deciding whether to offer coverage and the generosity of coverage.

Figure 1.

CBO's Health Insurance Simulation Model



Source: Congressional Budget Office.

Notes: This diagram represents the basic flow and key components of the model. Although some elements or pathways are shown for illustration, the diagram is not meant to present every interaction or behavioral response in the model.

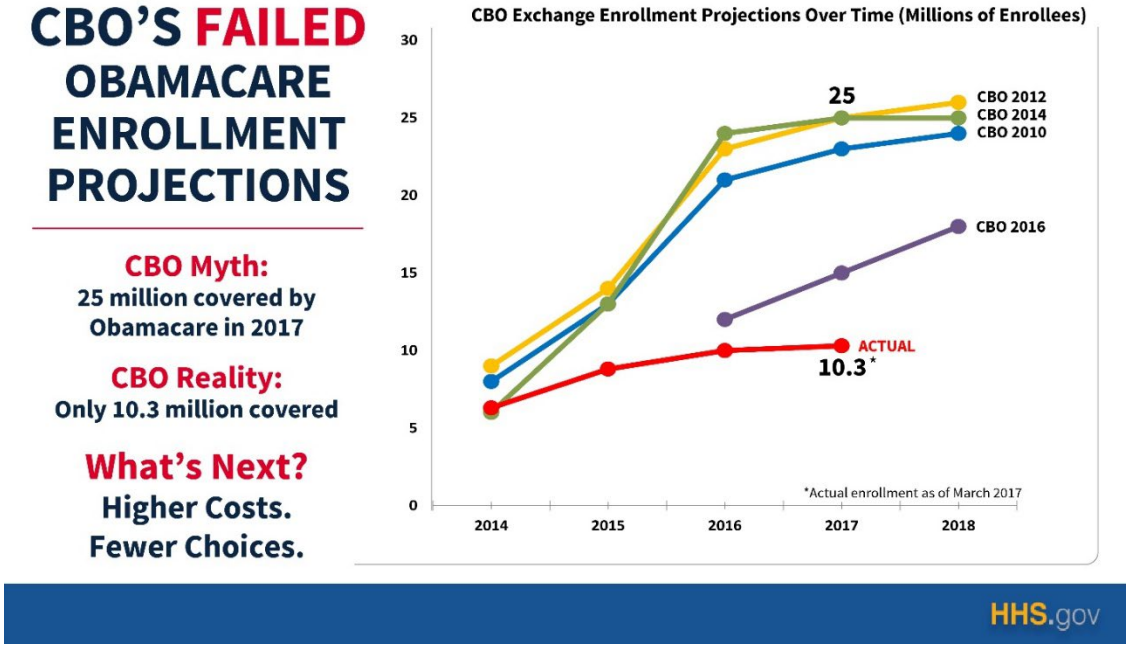
BLS = Bureau of Labor Statistics; MEPS = Medical Expenditure Panel Survey; NBER TAXSIM = National Bureau of Economic Research Tax Simulator; NHEAs = national health expenditure accounts; SIPP = Survey of Income and Program Participation; ESI = employer-sponsored insurance.

Model performance

Glied and Tilipman present a table comparing model's predictions with actual spending, indicating that the models perform pretty well.

Proposal	Year of prediction[a]	Estimated coverage impact (thousands)	Estimated cost impact[b] (millions)	Actual coverage impact (thousands)	Actual cost impact[b] (millions)
Medicare	1967	19,000 (27)	$22,400 (27)	19,500 (10)	$30,600 (11)
Medicaid Expansions[c]	1988–1992	3,050 (17)	$3,863 (26)	3,400 (71)	$4,655 (71)
MA Health Reform[d]	2007–2008	136 (38, 122)	$610 (91)	176 (92)	$733 (91)
Medicare Drug Coverage	2007	38,000 (18)	$60,900 (18, 19)	40,000 (76)	$49,500 (46)

However, the Congressional Budget Office's model overestimated enrollment in the exchanges (as shown in this slide from the Trump-era Department of Health and Human Services).



Provider behavior

Up until now, we have focused on health reform and insurance markets. But some models have many moving pieces that address other segments of the health care system. For example, some health reform proposals, such as the Affordable Care Act, fund a portion of the cost of insurance expansions by cutting Medicare payments to physicians and other providers. They may react. The Congressional Budget Office assumes a 10% reduction in physician fees will lead to a 2.8% increase in the use of services.