

An Assessment of the New York Health Act

A Single-Payer Option for New York State

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Preface

As of July 2018, the New York State legislature is considering a comprehensive single-payer health plan (the New York State Health Act). The plan would provide coverage to all residents of the state, including undocumented immigrants, and would transform the delivery and financing of health care in the state. To understand the near-term and longer-term impact of the single-payer proposal, the New York State Health Foundation (NYSHealth) commissioned RAND to assess how the plan would affect a number of outcomes, including health care utilization and spending. This report presents the results of RAND's analysis.

Support for this work was provided by NYSHealth. The mission of NYSHealth is to expand health insurance coverage, increase access to high-quality health care services, and improve public and community health. The views presented here are those of the authors and not necessarily those of NYSHealth or its directors, officers, and staff.

The research was conducted in RAND Health, a division of the RAND Corporation. A profile of RAND Health, abstracts of its publications, and ordering information can be found at www.rand.org/health.

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Summary

Background, Purpose, and Approach

The New York State legislature is considering single-payer legislation—the New York Health Act (NYHA)—that would transform the landscape of health insurance coverage and financing in the state. The NYHA would create a state-sponsored single-payer health program called New York Health (NYH). The NYH plan would provide coverage to all residents of New York State. Health benefits under the NYH plan would be comprehensive, including all benefits covered by Medicare, Medicaid, Child Health Plus, and those mandated under the Affordable Care Act (ACA); the exception is long-term care (LTC) benefits that would not be covered under the NYHA initially but could be added later. Patients would have no deductibles, copayments, or other out-of-pocket costs at the point of service for covered benefits. The NYH program would be financed through a new trust with funds from the federal government (in lieu of federal financing for current health programs if federal waivers are approved), current state funding for health care programs, and revenues from two new progressively graduated state taxes: a payroll tax paid jointly by employers (80 percent) and employees (20 percent), and a tax on income not subject to the payroll tax, such as interest, dividends, and capital gains.

To understand the near-term and longer-term impact of the single-payer proposal, the New York State Health Foundation commissioned RAND to assess how the plan would affect health care coverage and costs in the state. We used a microsimulation modeling approach to estimate the plan’s effects on key outcomes and compare them with outcomes under the status quo (SQ) for three future years: 2022, 2026, and 2031.

Key assumptions of our modeling analysis include the following:

- Federal waivers for Medicaid, Medicare, and ACA requirements are approved.
- The NYHA is fully implemented in all three years.
- All residents of New York State have insurance coverage from the NYH plan.
- NYH does not cover long-term care benefits in the base case scenario (note that this is varied in sensitivity scenarios), but Medicaid- and Medicare-eligible enrollees would continue to be eligible for nursing home and home health services under waiver arrangements.
- We compare outcomes such as total health spending, taxes, and health insurance coverage estimated under the NYHA to outcomes under the “status quo,” which reflects federal and state health care policies currently in place. In our status quo scenario, we assumed the ACA continues without the individual mandate penalty.
- In our base case assumptions, we assumed provider payment rates in NYH in 2022 would be similar to the dollar-weighted average payment rate across all payers in the status quo,

and grow at a rate equal to payment rate growth in public health care programs like Medicare and Medicaid (see Figure S.1). We assumed the administrative rate in NYH would be 6 percent of spending for health care services.

- We compare total health care spending under alternative assumptions for the NYHA to spending under the status quo in sensitivity analyses.

Assumptions about provider payment rates are particularly important for estimating the health care cost under the NYHA. While moving to an all-payer average would reduce payment for services currently billed to commercial payers, the change would increase payment for services currently billed to Medicaid. Medicare payment rates in the status quo are similar to the all-payer average rates.

Key Findings

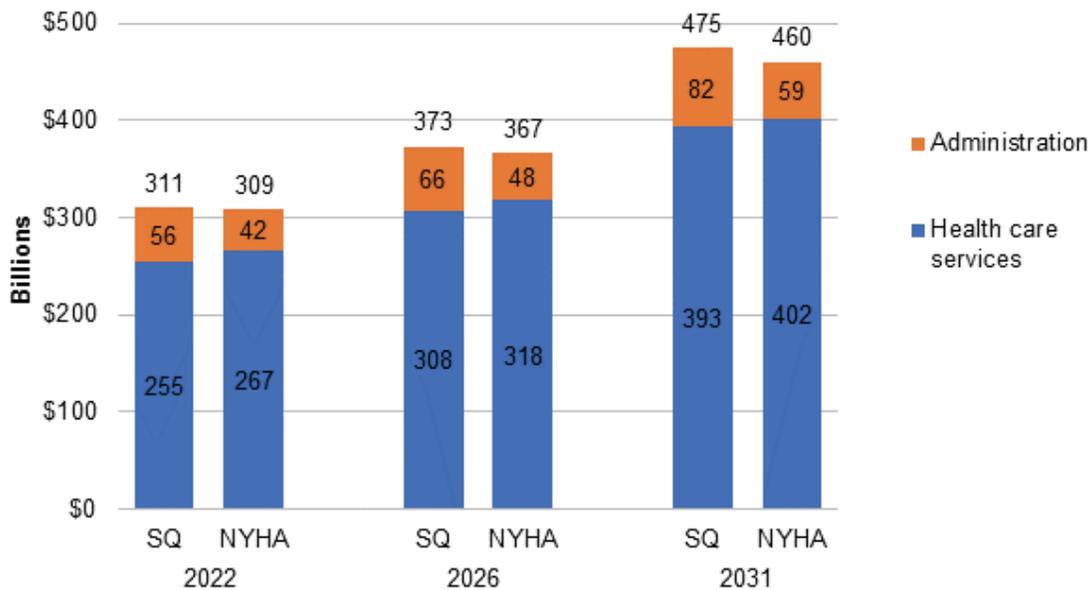
Health Care Spending and Utilization

- We estimate that under the status quo, total health care spending would be \$311 billion in 2022 and rise to \$475 billion in 2031, which would be approximately 17 to 18 percent of New York's gross state product.
- Under our base case assumptions, total health care spending under the NYHA would be slightly lower than spending under the status quo (Figure S.2). We estimate that spending would be similar in 2022 and 3 percent lower by 2031, with the ten-year cumulative net savings being about \$80 billion, or 2 percent. The initial similarity reflects the net effect of increased utilization of health care services offset by reduced administrative costs, while the decrease over time reflects the assumption that provider payment rates would grow more slowly under the NYHA.
- Increased spending for health care services under the NYHA would result from increased utilization stemming from covering the previously uninsured and from the elimination of cost sharing for all. However, reduced administrative costs would offset the increases in utilization.

Health Care Financing and Payment

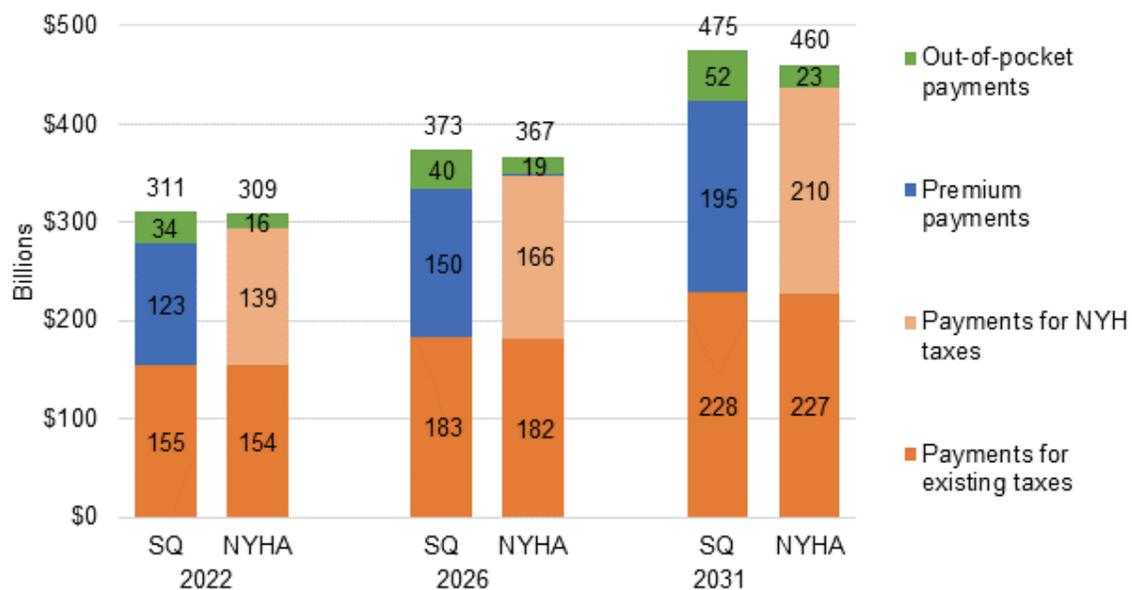
- The NYHA would require large shifts in the types of payments people make for health care, with tax payments replacing premiums and out-of-pocket payments for covered services (Figure S.2).

Figure S.1. Health Care Spending



NOTES: Health care services are personal health care services (hospital care, physician and clinical services, other professional services, dental services, and other health, residential, and personal care services, prescription drugs and devices, other nondurable medical products, home health care, and nursing care) less provider administration. Administration includes provider administration, health plan administration (by private plans and public health care programs), other state administration (by taxation and finance and financial services departments), and employer administration for health benefits.

Figure S.2. Health Care Payments



NOTES: Payments for existing taxes supporting health care programs include those for federal income, Medicare payroll, state income taxes, and other taxes. Premium payments are for employer coverage (made by employees and employers), individual marketplace coverage, Essential Plan, Child Health Plus, Medicare, Medicare supplemental plans, and TRICARE. Payments for NYH taxes are the NYH payroll tax (paid by employees and employers) and NYH nonpayroll tax payments. Out-of-pocket payments are payments at the point of service; the remaining out-of-pocket payments under the NYHA are for services not covered by the NYH plan, such as long-term care, cosmetic surgeries, and over-the-counter drugs.

- We assumed that federal health care outlays for New Yorkers would be unchanged under the NYHA compared with the status quo, given the required budget neutrality under waivers. State health care outlays would increase fivefold under the NYHA. We estimate that the additional state tax collections from the NYH payroll and nonpayroll taxes would need to be \$139.1 billion in 2022 (relative to a projected \$89.3 billion in total state tax collections in the status quo) and \$210.1 billion in 2031 to fully finance NYH.
- Although the NYHA proposes progressively graduated taxes, the bill does not specify tax rates and how progressive the schedule would be across income groups. The progressive tax schedules for the NYH payroll tax and the nonpayroll tax could be designed in a number of ways. We estimate one possible set of graduated marginal tax rates in three income brackets, with the lower bracket set at approximately the federal poverty level for a family of four and the top bracket set at the maximum taxable earnings level for the Social Security payroll tax (Table S.1).

Table S.1. New York Health Payroll and Nonpayroll Marginal Tax Rates, by Income Bracket

Income Bracket in 2022 ^a	Marginal Tax Rate					
	NYH Payroll Tax (%)			NYH Nonpayroll Tax (%)		
	2022	2026	2031	2022	2026	2031
≤\$27,500	6.1	6.3	6.7	6.2	6.2	6.2
\$27,501–\$141,200	12.2	12.6	13.4	12.4	12.4	12.5
>\$141,200	18.3	18.8	20.0	18.6	18.6	18.7

NOTES: These marginal tax rates are for taxes dedicated to NYH, and are additional tax rates on top of existing taxes (the existing New York State personal income tax rates ranged from 4 to 8.82 percent in 2017). For each bracket, the rate applies to income above the prior bracket.

^a We increased the dollar value of the thresholds for the income brackets over time based on the consumer price index (CPI). The thresholds started at \$25,000 (approximately the federal poverty level for a family of four) and \$128,400 (the maximum taxable earnings for Social Security) in 2018. For the payroll tax, the brackets apply to wages and salaries. For the nonpayroll tax, the brackets apply to nonwage income.

- Under these tax schedules, payments for health care (premiums, out-of-pocket payments, and tax payments supporting health care) would decline among lower-income residents under the NYHA, and would rise substantially among the highest-income residents. Among New Yorkers with household compensation below the ninetieth percentile under the status quo in 2022 (average household compensation \$105,300), average health care payments would decrease by about \$2,800 per person, which is a decrease from 23 percent of compensation per person to 16 percent.¹ We considered household

¹ Not everyone in each income group would experience a decrease in health care payments. Although payments for those below the ninetieth percentile of household compensation decline on average, some households would experience an increase in payments, and others would experience a decrease. See Figure B.4 for details.

compensation to include household income and employer contributions to health care. For those in the ninetieth to ninety-fifth percentile of household compensation in 2022 (average household compensation \$337,800), average health care payments would increase by about \$1,700 per person, which is an increase from 23 percent of compensation per person to 24 percent. The top fifth percentile of New Yorkers by household compensation—a heterogeneous group with average household compensation of \$1,255,700—would have an average payment increase of about \$50,200 per person in 2022, which is an increase from 23 percent of compensation per person to 35 percent.

- For employers offering health benefits under the status quo, average contributions to the NYH payroll tax would be less than their contributions to health insurance and the Medicare payroll tax under the status quo (a decrease of \$200 to \$800 per worker in 2022, depending on firm size). For employers not offering health benefits under the status quo, contributions would increase from the Medicare payroll tax under the status quo to both the Medicare payroll tax and the mandatory NYH payroll tax under the NYHA (an increase of \$1,200 to \$1,800 per worker in 2022, depending on firm size).
- We estimate a nearly 2-percent increase in employment under the NYHA compared with the status quo, due to changes in the health care services and insurance sectors and changes in health care payments leading to changes in household disposable income.

Sensitivity to Assumptions

A large body of evidence suggests that the size of the tax base may be affected by the marginal tax rate—for example, because people change investment decisions or take advantage of deductions and loopholes to avoid paying taxes. Because the NYHA would apply new taxes to a broad tax base that includes both wage and nonwage income, residents may have limited opportunity to avoid the taxes by changing investment decisions. However, people could avoid taxes by moving or switching their primary residence to another state. While the literature on migration in response to new taxes is less developed than the literature on tax avoidance, there is evidence to suggest that wealthy and high-skilled individuals may move in response to state taxes. Because the costs of funding the NYHA would fall disproportionately on a very small subset of high-income tax filers, even a small tax migration or avoidance effect could influence the state's ability to finance the program. For example, if the wealthiest 0.5 percent of tax filers left the state or found other ways to avoid payment, annual revenue from the NYH nonpayroll tax would decline by about \$33.5 billion in 2022, which represents about 11 percent of the total cost of NYH.

Our results are sensitive to changes across a range of assumptions. We considered alternative assumptions related to the implementation of the NYHA, NYH specifications, and provider responses. Overall, we find that our alternative assumptions about the provider payment rates,

administrative costs, and drug payments have the largest impacts on our estimates of how spending could change under the NYHA, which could result in up to a 12-percent decrease or 7-percent increase relative to the status quo in 2022, and a 15-percent decrease or a 12-percent increase in 2031 (Table S.2). For example, if payment negotiations between the state and providers lead to higher or lower rates, costs could increase or decrease substantially. To a lesser extent, our variations to the assumptions about covering long-term care benefits, including modest cost sharing, and alternative provider responses to payment rates and patient demand could result in up to a 5 percent decrease to an 8 percent increase relative to the status quo.

Table S.2. Projected Percent Difference in Total Health Care Spending Under the New York Health Act with Alternative Assumptions, Relative to the Status Quo

Scenario	2022 (%)	2031 (%)
Base case:		
NYH provider payment rates grow at same rate as public health care in SQ		
NYH health plan administrative rate 6%		
NYH drug prices 10 percent lower than Medicare prices in SQ		
NYH does not cover LTC	-1	-3
No cost sharing		
Providers have medium sensitivity to payment rates		
Providers have medium sensitivity to patient demand		
Alternative implementation assumptions		
1a: NYH provider payment rates grow at same rate as private health care in SQ	-1	3
1b: NYH provider payment rates 5% below SQ in 2022	-4	-6
2a: NYH health plan administrative rate 12%	5	2
2b: NYH health plan administrative rate 3%	-4	-6
3a: NYH drug payments 2.5% higher than SQ	1	<1
3b: NYH drug prices equal to Medicaid in SQ	-5	-10
4a: combined higher provider payment (1a), administrative rate (2a), drug payments (3a)	7	12
4b: combined lower provider payment (1b), administrative rate (2b), drug payments (3b)	-12	-15
Alternative NYH specifications		
5: NYH covers LTC benefits	5	2
5a: larger increase in LTC demand	8	4
5b: smaller increase in LTC demand	3	<-1
6: NYH with modest cost sharing	-2	-4
Alternative provider behavior assumptions		
7a: providers less sensitive to payment rates	-1	-3
7b: providers more sensitive to payment rates	-1	-4
8a: providers more sensitive to patient demand	1	-1
8b: providers less sensitive to patient demand	-2	-5

Conclusions

We estimate that the NYHA could expand coverage without substantial increases in overall health care spending: in the short term, health care spending would be relatively similar but would grow more slowly over the longer term than under the status quo. A key assumption behind this result is continued restraint in the growth of provider payment rates. Increases in the utilization of health care services under the NYHA could be offset by decreases in provider payment rates and health plan administrative costs.

Under the NYHA, health care would be financed primarily through tax payments rather than premiums and out-of-pocket payments. This financing shift would entail a substantial redistribution in who pays for health care. With payroll and nonpayroll taxes that scale with income, payments for health care could decline substantially among lower-income residents and rise substantially among the highest-income residents under the NYHA.

After redirecting existing federal and state health care outlays to NYH, new state tax revenue required to finance the program through the NYH payroll and nonpayroll taxes would total \$139.1 billion in 2022 and \$210.1 billion in 2031. We estimate one possible graduated tax schedule to fully fund NYH under our base case assumptions, with NYH payroll tax rates ranging from 6 to 18 percent and the NYH nonpayroll tax rates ranging from 6 to 19 percent in 2022. Under this schedule, we estimate that, on average, people with household compensation below the ninetieth percentile would pay less under NYHA under the status quo, but the highest-income households would pay more on average.

The impact of the NYHA depends on a host of factors relating to how the plan is implemented, specifications of the health plan, and how stakeholders respond to the program. We show the range of possible impacts on spending through alternative assumptions in key areas subject to substantial uncertainty and different views ranging from high to low projections. In our analyses of alternative assumptions, we find that the estimated effects depend heavily on the assumptions about provider payments, administrative costs, and drug prices. Thus, the extent to which the state is willing and able to negotiate or set price levels and generate efficiencies would be critical to reducing health care spending under the NYHA.

Several states have considered single-payer proposals. Our analysis finds that the NYHA could expand coverage and maintain or reduce total health care spending, assuming the state can reduce administrative expenses and restrain provider payment growth. Although these assumptions are reasonable, they are also highly uncertain and depend on how the state implements the program, and whether the state can successfully negotiate payment rates with providers. Our estimates also depend on the design of the tax schedule under the NYHA and behaviors in response to the new taxes. The NYHA would add new progressively graduated payroll and nonpayroll taxes but does not specify the rates or the degree of progressivity. Our analysis assumes one possible tax schedule that would reduce payments for the majority of

residents but could lead to tax avoidance and migration among a small number of high-income households facing large tax increases. Our results suggest that a single-payer approach has the potential to lower payments among most New Yorkers, but the results are sensitive to assumptions about uncertain factors, such as the state's ability to reduce provider payment rates and administrative expenses, and the response of high-income residents facing new taxes.

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Abbreviations

ACA	Affordable Care Act
ACS	American Community Survey
AHRQ	Agency for Healthcare Research and Quality
APTC	advance premium tax credit
CBO	Congressional Budget Office
CCIIO	Center for Consumer Information and Insurance Oversight
CHIP	Children’s Health Insurance Program
CHP	Child Health Plus
CMS	Centers for Medicare and Medicaid Services
COMPARE	Comprehensive Assessment of Reform Efforts
CPI	consumer price index
CPS	Current Population Survey
CSR	cost-sharing reduction
DFS	Department of Financial Services
DME	durable medical equipment
DSH	disproportionate share hospital
DTF	Department of Taxation and Finance
EP	Essential Plan
ERISA	Employee Retirement Income Security Act
ESI	employer-sponsored insurance
FFS	fee-for-service
FPL	federal poverty level
FY	fiscal year
HCBS	home- and community-based services
HHS	Department of Health and Human Services
HHS OIG	Department of Health and Human Services, Office of the Inspector General

HMO	health maintenance organization
IMPLAN	Impact Analysis for Planning
IRS	Internal Revenue Service
KFF	Kaiser Family Foundation
LIS	Low-Income Subsidy
LTC	long-term care
MedPAC	Medicare Payment Advisory Commission
MEPS	Medical Expenditure Panel Survey
NAIC	National Association of Insurance Commissioners
NHEA	National Health Expenditure Accounts
NYH	New York Health
NYHA	New York Health Act
NYS	New York State
NYSDOB	New York State Division of the Budget
NYSDOH	New York State Department of Health
NYSOH	New York State of Health
OAG	Office of the Attorney General
OMB	Office of Management and Budget
OMIG	Office of the Medicaid Inspector General
PADSIM	Payment and Delivery Simulation Model
PPO	preferred provider organization
PUMS	Public Use Microdata Sample
SFY	state fiscal year
SHE	state health expenditures
SHEA	State Health Expenditure Accounts
SQ	status quo

1. Introduction

New York State has long been committed to expanding health insurance coverage and access to health care for its residents. New York was one of three states that created a state-funded child health coverage program before the creation of the federal Children’s Health Insurance Program (CHIP) in 1997 (Hill and Benatar, 2012). The state expanded eligibility for Medicaid in 2001, establishing the Family Health Plus program, which provided coverage for parents up to 150 percent of the federal poverty level (FPL), and single adults up to 100 percent. New York again expanded coverage under the Affordable Care Act (ACA) and saw Medicaid enrollment increase by over 2 million people (New York State Department of Health [NYSDOH], last updated June 2018), many of whom had been previously eligible but had not enrolled in the program. Nonetheless, census figures indicate that about 1.2 million individuals, or 6.1 percent of the population, remain uninsured in New York in 2017 (Barnett and Berchick, 2017).

One option for expanding coverage is a single-payer system. Recently, attention to single-payer systems has gained momentum, partly due to Senator Bernie Sanders’s Medicare-for-all proposal, as well as state-level proposals (Levitt, 2018). New York State Assembly Member Richard Gottfried, chair of the Health Committee, has introduced single-payer legislation in numerous assembly sessions since 1992.

In the 2017–2018 legislative session of the New York Assembly and Senate, Assemblyman Gottfried and Senator Gustavo Rivera introduced the New York Health Act (NYHA; Assembly Bill A. 4738-A/Senate Bill S. 4840-A, amended as of February 2, 2018), which would establish a single-payer plan in New York State (New York State Assembly, 2018). The NYHA has been passed by the assembly several times (as A. 5062 in 2015 and 2016, as A. 4738 in 2017, and most recently as A. 4738-A in June 2018); the bill has not been brought to a vote in the Senate. In this analysis, we estimate the potential impacts of the NYHA on health care utilization and spending; net savings or costs to individuals, employers, and governments; and employment effects in New York.

New York Health Act

The NYHA would create the New York Health (NYH) program to provide health care coverage to residents of New York State. All state residents, including undocumented immigrants, would be eligible for NYH. The NYH plan would provide comprehensive coverage of health care benefits, including all benefits covered by Medicare, Medicaid, Child Health Plus (CHP), and those mandated under the ACA. Patients would have no deductibles, copayments, or other out-of-pocket costs at the point of service. All enrollees would have a care coordinator,

which could be a primary care physician, specialist, hospital, or other agency or facility. Long-term care (LTC) benefits would not be covered initially, but within the first two years, the NYH commission would consider proposals to fund long-term care benefits.

Contingent on federal waiver approvals, Medicaid and Medicare benefits would be delivered under NYH. With a single-payer approach through waivers, the aim would be to have federal payments for Medicaid and Medicare beneficiaries enrolled through NYH directed to the NYH trust fund. The waiver agreements are required to be budget neutral from the perspective of the federal government.

The New York State Department of Health or a designated commission would pay all health care claims for enrolled New York residents through a fee-for-service schedule until and unless another payment methodology is established. Commercial insurers, including Medicaid managed care organizations, would likely have no role in premium collection and claims processing for residents. Nonprofit or government entities may be approved by the department to provide care coordination services under NYH.

Individuals would not pay premiums for NYH. Instead, the program would be financed by new graduated state taxes on payroll and nonpayroll income (such as interest, dividends, and capital gains) and redirected federal funding through waivers and state funding for current health care programs. While the NYHA does not prohibit employers from offering health insurance, it does include a mandatory employer payroll tax contribution to help fund NYH.

Prior Analyses of Single-Payer Proposals

Analyses of single-payer proposals are challenging because of uncertainties in how any far-reaching proposal would be implemented and how it would interact with various parts of the complex U.S. health care system, including providers, employers, and existing private health plans and government-sponsored health programs (Aaron, 2003; Pollack, 2015), as well as the larger economy. Analysts and policymakers disagree on several factors that could significantly affect net costs and savings under a single-payer system.

Estimates of the impacts of single-payer proposals on total health care system costs have ranged from increases to substantial net savings. The variation in cost estimates contributed to Vermont's decision not to establish a single-payer plan. Vermont pursued a single-payer system from 2011 to 2014, during which three separate analyses estimated that systemwide cost savings would range widely from a modest savings of 1.6 percent over the medium term to a much larger savings of 24–25 percent over the long term (McDonough, 2015). Although all three analyses included estimates of savings, the necessary taxes, estimated to be an 11.5-percent payroll tax and a sliding-scale income tax from 0 to 9.5 percent of income, were viewed as unworkable given the economic and political climate (Shumlin, 2014; McDonough, 2015). These analyses differed in their assumptions, such as the extent of administrative savings and federal funding

that could be rechanneled into the single-payer plan. Similarly, estimates of Senator Sanders’s proposal during his 2016 presidential campaign ranged widely, from a net savings of \$6 trillion to a net cost of \$3–\$10 trillion over a decade (Friedman, 2016; Thorpe, 2016; Committee for a Responsible Federal Budget, 2016; Holahan et al., 2016).

To date, analyses of the NYHA have been published in two reports. These two analyses arrived at different conclusions. Friedman (2015) estimated that the NYHA would reduce health care spending by \$44.7 billion in 2019 (or about 15.6 percent of projected total health care spending, \$287.4 billion in 2019) and create 200,000 new jobs. The reductions in spending were attributed to reduced administrative costs by health plans, providers, and employers; reduced prices paid for prescription drugs and medical devices; and improved fraud detection and enforcement. On the other hand, an analysis from the Foundation for Research on Equal Opportunity contended that Friedman’s analysis assumed overly optimistic projections of cost savings and did not address violations of federal law (Roy, 2017). While Friedman estimated that the NYHA would require new state revenues totaling \$91 billion in 2019, Roy estimated that \$226 billion would be needed to fully finance the program—which is more than 2.7 times the projected state budget of \$82 billion in 2019.

The goal of this report is to provide an independent and unbiased analysis that is rigorous and transparent about assumptions. Estimates of health reform proposals depend on assumptions about the complex interplay between consumers, providers, and government officials and policies, and therefore we strive for transparency in the assumptions that we necessarily make in order to estimate the impact of the NYHA. As health care reform progresses in New York State and nationwide, independent and rigorous analyses are essential for policymakers and other stakeholders to conduct thoughtful debate on policy proposals.

Objective of This Analysis

The objective of this analysis is to assess the extent to which the NYHA would impact

- the utilization of health care services
- administrative costs
- drug and device costs
- fraud and abuse detection costs
- taxes required to finance health care
- net cost or savings for New Yorkers
- net costs or savings to employers in New York
- employment
- net costs or savings to the government
- long-term care costs and utilization.

We compare estimates for the NYHA to the status quo (SQ), projecting current policies forward for 2022, 2026, and 2031. We present base case estimates for the NYHA and provide sensitivity analysis using alternative assumptions and specifications of the NYHA. The sensitivity scenarios include variations in the assumed payment rates, administrative costs, drug prices, coverage of long-term care benefits, cost sharing, and provider responses to payment rates and patient demand for health care services.

2. Status Quo in New York

In this chapter, we describe the status quo in New York State. The status quo represents a continuation of state and federal law and policy in place as of May 2018, including the ACA and subsequent modifications. We summarize the key specifications for modeling the status quo.

Health Insurance Coverage and Financial Assistance

Under the status quo, New Yorkers receive health insurance from a mixture of public and private sources, as shown in Table 2.1. About 1.1 million individuals, or 6 percent of the population, in New York are uninsured. New York opted to expand Medicaid eligibility under the ACA, which extended eligibility to all adults with incomes up to 138 percent of FPL; 100 percent of FPL is \$12,140 for a single individual and \$25,100 for a family of four in 2018. Medicaid eligibility limits are 223 percent of FPL for pregnant women and infants and 154 percent of FPL for most other children ages 18 and under (Kaiser Family Foundation [KFF], 2018). New York offers subsidized premiums to children enrolled in CHP, with no premiums for those with household income below 160 percent of FPL, and premiums on a sliding scale for those between 160 and 400 percent of FPL; children in households with income above 400 percent of FPL can purchase CHP at the full premium.

Table 2.1. Health Insurance Enrollment in New York Under the Status Quo

Insurance Category	Enrollment (Millions)
Enrollment for the full population, estimates from the 2016 Current Population Survey (CPS)	
Employer-sponsored insurance (ESI)	9.77
Nongroup	1.29
Medicaid or CHIP	4.62
Medicare	2.52
Other public	0.18
Uninsured	1.09
Total	19.47
Marketplace enrollment, estimates from the New York State of Health 2018 Marketplace Enrollment Report	
Nongroup coverage, purchased through the marketplace	0.25
Essential Plan	0.74
CHP	0.37
Medicaid	2.97
Total	4.33

SOURCES: 2016 CPS, compiled by the Kaiser Family Foundation (KFF) n.d.; New York State of Health (NYSOH), 2018.

New York is one of two states (the other is Minnesota) that exercised an option under the ACA to offer a Basic Health Program to individuals with incomes between 138 and 200 percent of FPL. New York calls its Basic Health Program the Essential Plan (EP). The EP is either free or costs \$20 per month per individual, depending on a family’s income (NYSOH, 2017b). New York’s EP is not risk adjusted with the individual market (Medicaid and CHIP Learning Collaborative, 2015). In 2018, there were 740,000 individuals enrolled in the EP.

New York has full community rating, requiring insurers to charge all adults² purchasing individual market plans the same premiums regardless of age or tobacco use status (Center for Consumer Information and Insurance Oversight [CCIIO], 2017).³ Under the ACA, individuals with incomes between 200 and 250 percent of FPL are eligible for cost-sharing reduction (CSR) subsidies if they purchase silver plans through the ACA marketplace. These plans reduce out-of-pocket payments, increasing the effective actuarial value of the silver plan from 70 to 73 percent for enrolled individuals. Under the ACA, individuals with incomes between 100 and 400 percent of FPL and without other affordable sources of coverage are eligible for advance premium tax credits (APTCs) on the marketplace, which reduce premium payments by these enrollees. In 2017, New York had an estimated 243,000 enrollees on the marketplace, 59 percent (about 143,000) of whom received APTCs (NYSOH, 2017b). Table 2.2 describes the financial assistance available under the status quo in New York.

Table 2.2. Financial Assistance in New York Under the Status Quo

Household Income	Financial Assistance
All ages	
<138% FPL ^a	Medicaid
138%–200% FPL	EP for those without any other source of affordable coverage
201%–250% FPL	APTCs and CSRs for those without any other source of affordable coverage
251%–400% FPL	APTCs for those without any other source of affordable coverage
Ages 18 and under	
154%–400% FPL	CHP with subsidized premiums (no premiums below 160% FPL, sliding scale >160% FPL)

^a Eligibility limits are 223 percent of the FPL for pregnant women and infants and 154 percent of the FPL for most other children ages 18 and under.

² Most children on individual plans are effectively charged lower premiums than adults, as New York’s rating rules establish that premiums for a family plan with one adult and one or more children are 1.7 times the cost of a plan for a single adult, and a plan for two adults and one or more children costs 2.85 times the cost of a plan for a single adult.

³ Most other states use the maximum rate bands allowed under the ACA, which are 3:1 for age rating (older adults can be charged three times as much for premiums as younger adults) and 1.5:1 for tobacco use (tobacco users can be charged one and a half times as much as nonusers).

Federal policy changes and proposed rules have occurred under the Trump administration in 2017 and 2018 and affect how states implement the ACA. First, in December 2017, Congress passed the Tax Cuts and Jobs Act, which eliminated the individual mandate penalty, effective January 1, 2019. The Congressional Budget Office (CBO) estimated that, at the national level, eliminating the individual mandate penalty would reduce health insurance enrollment for those age 65 and younger by 7 million in 2020 and 13 million by 2027, while increasing premiums on the individual market by around 10 percent (CBO, 2017d).⁴

Second, federal funding for CSRs has changed. Under the ACA, insurers are required to provide reduced cost sharing to individuals with incomes between 100 and 250 percent of FPL who purchase silver individual plans through the marketplace. Moreover, under the ACA, the federal government had been making payments to health insurance companies to cover the CSR costs. However, in late 2017, after a legal opinion provided by the attorney general concluded that Congress did not appropriate funding for CSRs, the Trump administration halted federal payment to insurers to cover these costs (Hargan, 2017). In response, silver plan premiums in most states were increased (Kamal et al., 2017) in order to generate the revenue necessary to cover the CSR costs. However, the increases in silver premiums were smaller in New York than in most other states—1.1 percent or less compared to 7 to 38 percent in other states (Kamal et al., 2017).⁵

Finally, there have been proposed rules related to short-term, limited-duration (STLD) and association health plans; however, these rules are expected to have little or uncertain impact. In February 2018, the Departments of the Treasury, Labor, and Health and Human Services proposed a rule that would expand health insurers' ability to sell STLD plans by increasing the maximum duration of such plans from 3 months to 12 months. Changes to regulations on STLD plans are not expected to have much, if any, impact in New York because it is one of three states that prohibit such plans entirely (Lucia et al., 2018). In June 2018, the Department of Labor published a final rule allowing small businesses and self-employed workers to form association health plans. It is difficult to predict how small businesses and individuals will band together and how the association health plans would affect negotiations.

⁴ Impacts on premiums in New York State may differ from national-level impacts because of the state's community rating regulations and EP. In addition to New York, only one state (Vermont) has community rating on its individual market and only Minnesota has a Basic Health Program similar to New York's EP, so the effects of these regulations on New York residents are not captured in national-level analysis (CCIIO, 2017).

⁵ The small premium increase in New York attributable to the elimination of CSR payments results from the fact that, due to the affordability and popularity of its EP, New York has relatively few individuals who sought to qualify for CSRs.

Financing

Health care services are financed through a variety of different payments originating from individuals. The sum of all health care payments made by individuals equals the aggregate dollar value of health care services received by individuals—i.e., total health care spending (Box 1).

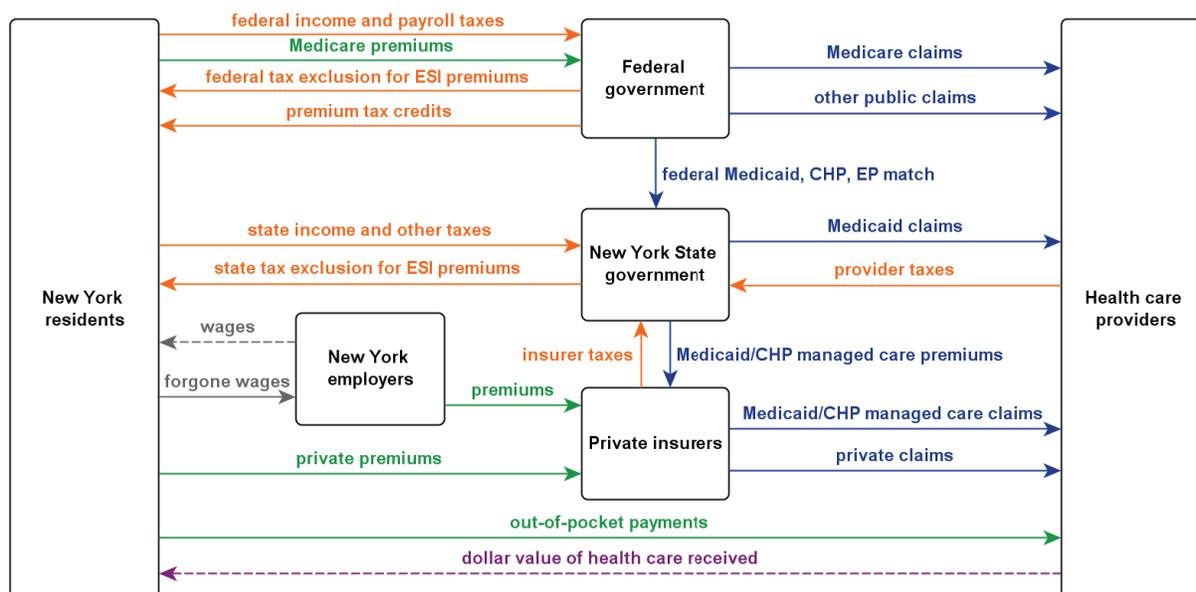
Box 1. Health Care Payments Versus Health Care Spending

Health care payments are payments for health care services made by individuals. Direct payments include premiums and out-of-pocket payments. Indirect payments include tax payments that may be used to fund government-sponsored health care programs. Premium contributions by employers are paid by workers through forgone wages.

In this report, **health care spending** refers to the dollar amount of health care services and associated administrative services received by individuals. Services received by a given individual may be paid by that individual, by others, or a combination. For example, services received by a child on an employer-sponsored family plan are paid for by other members of the household. Services received by a Medicaid enrollee are paid by federal and state taxpayers.

Figure 2.1 shows health care payments made by New York residents under the status quo, and the financing flows from payers to health care providers. (For comparison, see Figure 3.1 for

Figure 2.1. Health Care Payments Under the Status Quo



NOTES: This figure depicts financing flows for health care services from New York residents to health care providers. The solid arrows are payments. Direct payments—premium and out-of-pocket payments—are shown in green. Tax payments, credits, and exclusions related to health care are shown in orange. Federal and state outlays and private claims payments are shown in blue. Forgone wages (for employer-paid health benefits) are shown in gray. Wages are shown as a dotted arrow in gray. All payments originate from residents. The sum of all payments equals the sum of the dollar value of health care received, which is shown as a dotted arrow in purple. See Figure 3.1 for health care payments under the NYHA.

financing under the NYHA.) From these payments, the payers in the status quo—public payers such as Medicare and Medicaid and private payers—reimburse providers for health care services on behalf of plan enrollees (see Table A.1 for New York state health expenditures [SHE] by payer); provider payments and prescription drug prices are discussed in the next section.

In this analysis, we consider three categories of payments:

- premium payments
- tax payments supporting health care programs
- out-of-pocket payments.

Premium Payments

Under the status quo, individuals with ESI make premium contributions through their employers. Employers may also make premium contributions on behalf of their employees.⁶ According to data from the 2016 Medical Expenditure Panel Survey (MEPS) Insurance Component, the average employee premium contribution among private-sector employees enrolled in single ESI coverage in New York was 20.5 percent of the total premium (Agency for Healthcare Research and Quality [AHRQ], 2016a). Individuals enrolled in plans through the New York State of Health—New York’s enrollment platform for publicly subsidized insurance coverage, including qualified health plans, EP, and CHP—also pay premiums. Medicare premiums are paid by Medicare beneficiaries according to income for Parts A and B and if enrolled in Parts C and D.

Tax Payments

Households make federal and state income tax payments that may be used to support public health care programs such as Medicare and Medicaid. Federal taxes earmarked for health care include the Medicare payroll tax (2.9 percent, split between employers and employees), the additional Medicare tax (0.9 percent on income above \$200,000 for single returns and \$250,000 for joint returns), and the Medicare net investment income tax (3.8 percent on certain net investment income if adjusted gross income is above \$200,000 for single returns and \$250,000 for joint returns).

State income taxes and other state and local taxes going to the general fund are used to support the state share of funding for Medicaid. In addition, New York’s Health Care Reform Act funds collected from provider fees (hospital surcharge, hospital assessment, and nursing home assessment), insurer fees (covered lives assessment), and cigarette taxes are used to fund various programs, including the state share of Medicaid.

⁶ Although employers may make premium contributions on behalf of employees, the economic incidence of employer premium payments is on workers who forgo wages in place of health benefits.

Subsidies related to health insurance are provided by the federal and state government in the form of the tax exclusion for ESI (see Box 2) and financial assistance for marketplace plans. Under the ACA, individuals enrolled in marketplace coverage may be eligible for APTCs if their income is below 400 percent of FPL and they have no other affordable source of insurance, as discussed earlier.

Box 2. Tax Exclusion of Employer-Sponsored Insurance

ESI receives favorable tax treatment under state and federal law. Employer payments for ESI are excluded from workers' taxable income for federal and state income and payroll taxes, and they are also treated as a business expense for purposes of corporate income taxes. ESI premium payments by workers are also generally excluded from the workers' income if, as is typically the case, the employer has established a Section 125 ("cafeteria") plan.

Tax expenditures refers to government tax revenues that are forgone—i.e., not collected—due to a provision in tax law intended to subsidize or promote a desirable activity. The Joint Committee on Taxation projects that the federal income tax expenditures associated with the ESI exclusion will grow from \$150.6 billion in 2017 to \$191.0 billion in 2021 (Joint Committee on Taxation, 2018). The CBO estimates that the federal payroll tax expenditures for ESI are nearly as large as the federal income tax expenditures (Shakin, 2017).

Out-of-Pocket Payments

Out-of-pocket payments include deductibles, copayments, and coinsurance at the point of service, as well as the direct purchase of health care services and products outside insurance.

Provider Payment Rates and Prescription Drug Prices

A key factor that drives health care spending is prices paid to health care providers and for prescription drugs. A "provider payment rate" equals the amount a health care provider is paid per unit of service, including out-of-pocket expenses plus payments by a health plan, and taking into account the complexity and mix of services provided. The units of service vary depending on the provider type. To illustrate, in the physician office setting, each patient visit is assigned a score, or relative value unit, based on billing codes and the complexity of the visit. A medium-complexity evaluation and management visit with an established patient (i.e., Healthcare Common Procedure Coding System code 99213) was assigned 2.05 relative value units in 2016, and the Medicare-allowed amount for that service in Manhattan was \$83.19—that represents a Medicare payment rate of \$40.58 (Medicare payment rates are lower in other parts of New York State).

Historically, provider payment rates and prescription drug prices have varied widely depending on the patient's source of health insurance coverage, with private health plans

typically paying rates much higher than Medicare and Medicaid (Bloniarz, Winter, and Glass, 2017; Trish, 2018). Table 2.3 shows relative rates for selected service categories by payer in New York under the status quo.

Table 2.3. Relative Provider Payment Rates and Prescription Drug Prices in New York for Selected Service Categories by Payer Under the Status Quo, 2016

Health Care Service Category	ESI	Medicare	Medicaid	NYS All-Payer Weighted Average
Hospitals	1.20	0.93	0.89	1.00
Physicians	1.20	1.11	0.62	1.00
Prescription drugs	1.27	1.01	0.63	1.00

SOURCES: Authors' analysis based on RAND Hospital Data, 2018; Medicare Payment Advisory Commission (MedPAC), 2018, Ch. 4; Centers for Medicare and Medicaid Services (CMS), 2017a; Nguyen, Kronick, and Sheingold, 2013; Zuckerman, Skopec, and Epstein, 2017; Roehrig, 2018; Gagnon and Wolfe, 2015; Government Accountability Office, 2014; Cook, 2013; CBO, 2016.

NOTES: For hospitals, payment rates reflect payments per case-mix-adjusted discharge equivalent (for details on the calculation of discharge equivalents, see RAND Hospital Data, 2018). For physicians, payment rates are per relative value unit. For prescription drugs, the standardized unit is a broad market basket.

3. New York Health Program

In this chapter, we describe the specifications for the NYHA based on A. 4738-A (Gottfried)/S. 4840-A (Rivera) and how the NYHA would change health care financing and payment in New York.

Eligibility and Benefits

NYH would be a state-sponsored health plan providing universal coverage to all New York State residents, regardless of immigration status. The plan would provide health care benefits to individuals currently enrolled in Medicaid and Medicare in the status quo (contingent on federal waiver approvals). The NYHA would prohibit health plans from duplicating coverage provided by NYH.⁷ While the NYHA would not prohibit ESI, we assumed employers would no longer offer insurance to state residents if the NYH plan were available and paid for through mandatory taxes. Thus, NYH effectively would replace ESI, individual marketplace plans, and the EP for state residents.

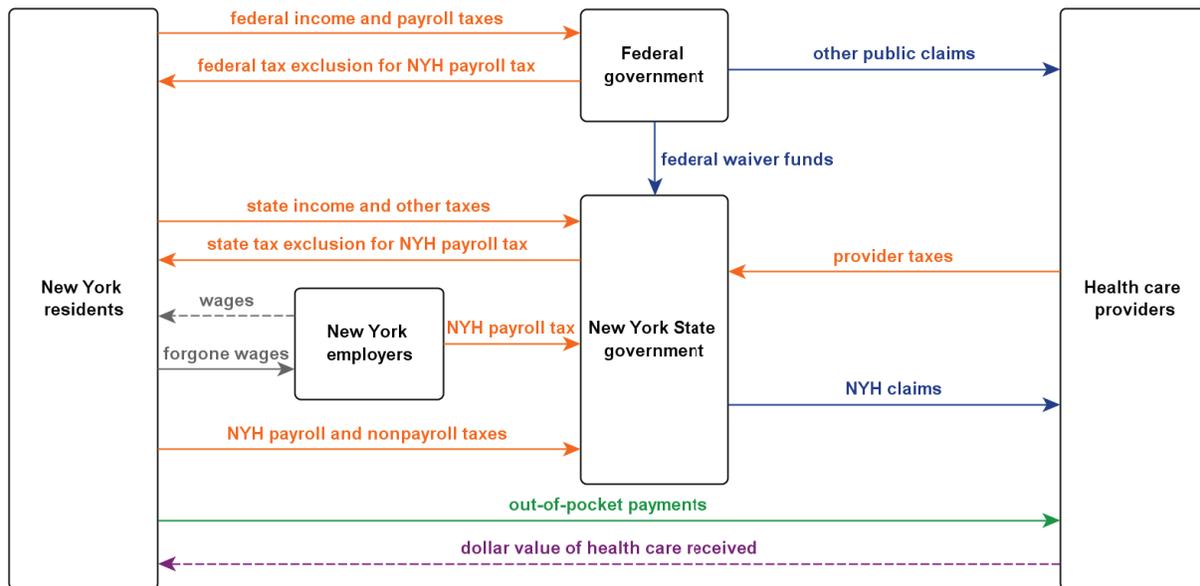
The health care services covered by NYH would be comprehensive and include all services currently covered by Medicaid, Medicare, and the essential health benefits offered under the ACA. We further assume that NYH would cover vision and dental benefits. As noted, initially, long-term care benefits would not be covered by NYH. Within two years of the passage of the NYHA, the NYH commission would develop a plan for coverage of long-term care benefits. NYH would have no patient cost sharing. Patients would pay no out-of-pocket costs in the form of deductibles, copayments, or coinsurance for covered services. Although NYH would cover a comprehensive set of services, there are certain services, such as cosmetic surgeries, infertility treatments, and adult orthodontics, that are currently excluded from New York Medicaid coverage; we assumed these services would also be excluded from NYH coverage. In addition, we assumed that nondurable medical products such as over-the-counter drugs and medical sundries paid for out of pocket in the status quo would also not be covered by NYH.

Financing

Under NYH, nearly all health care services would be paid from a single pool of funds financed by various taxes. The funding pool would come from redirected federal and state outlays for health care programs financed by existing taxes and the new NYH taxes (Figure 3.1). The

⁷ The NYHA does not prohibit individuals from contracting directly with physicians, e.g., for concierge care.

Figure 3.1. Health Care Payments Under the New York Health Act



NOTES: This figure depicts financing flows for health care services from New York residents to health care providers. Direct payments—out-of-pocket payments—are shown in green. Tax payments, credits, and exclusions related to health care are shown in orange. Federal and state outlays are shown in blue. Forgone wages (for the employer portion of the NYH payroll tax) are shown in gray. Wages are shown as a dotted arrow in gray. All payments originate from residents. The sum of all payments equals the sum of the dollar value of health care received, which is shown as a dotted arrow in purple.

remaining out-of-pocket payments under the NYHA would be for the small subset of services and products not covered by NYH, such as elective services, over-the-counter drugs and medical sundries, and long-term services and supports if not covered by NYH or remaining coverage through mechanisms established in Medicaid and Medicare waivers.

Existing tax payments supporting health care programs in the status quo—federal income, federal payroll, state income, and other state and local taxes—would mostly remain constant under the NYHA. The differences in revenue from existing taxes would be caused by changes in the tax base—e.g., changes in wages due to modified employer contributions for health care benefits—and by the elimination of taxes on insurers, such as the Health Care Reform Act’s covered lives assessment, as commercial insurers would no longer be the primary source of insurance for any New York State residents. Under the assumption that federal waivers would be approved, federal funding for Medicaid, Medicare, and marketplace tax credits would be redirected to NYH; other federal health care programs, such as the Veterans Health Administration, may continue paying claims for beneficiaries in New York. New York State would likely need to continue tracking Medicaid and Medicare eligibility in order to apply for federal matching funds through the waivers.

The new state tax revenue from the NYH payroll tax and the NYH nonpayroll tax (on taxable income not subject to the payroll tax) would replace premiums and the majority of out-of-pocket

payments under the status quo. The New York State Department of Taxation and Finance (DTF) and Department of Health, or other designated agencies, would collect the tax revenue and pay health care claims on behalf of New York State residents. Both of the NYH taxes would be progressively graduated. Like federal payroll taxes and most ESI premiums, NYH payroll tax payments would be jointly paid by employees and employers.⁸ Employees would pay 20 percent and employers would pay 80 percent of the NYH payroll tax.

Provider Payment Rates and Prescription Drug Prices

Under the NYHA, payments to health care providers would, at least initially, be made on a fee-for-service basis, meaning that providers would bill NYH and be paid separately for each service provided. Payments to providers would be based on a set of fee schedules, likely with a separate fee schedule for each major provider category (e.g., short-stay hospital inpatient services, hospital outpatient services, physician office-based services). The payment rates would be established by the NYH Board of Trustees with collective negotiations with provider representatives. The exception to the fee-for-service payments would be payments for care coordination, which could be paid on a fixed basis per enrollee. The NYHA sets out a vision for transitioning to alternative non-fee-for-service payment arrangements for health care but does not establish a timeline for that transition or benchmarks for the share of expenditures under specific payment arrangements.

Under the NYHA, the prescription drug benefit would be run under the Medicaid Preferred Drug Program, and other existing programs could be applied. Under New York Medicaid, drug manufacturers provide rebates for drugs prescribed to Medicaid patients. The Medicaid pharmacy benefit programs include the Preferred Drug Program and Clinical Drug Review Program, which encourages providers to prescribe preferred drugs by requiring prior authorization for nonpreferred drugs, with the state typically receiving a supplemental rebate from manufacturers for preferred products.⁹ Commercial insurers typically also have drug lists, or formularies, through pharmacy benefit managers who may negotiate different prices, set different cost sharing based on tiers, or exclude certain drugs. Other Medicaid programs include the Mandatory Generic Drug Program (which excludes coverage of brand-name drugs if an approved generic equivalent is available, unless prior authorization is obtained), Brand Less

⁸ Self-employed individuals pay the full payroll tax amount. For New York State residents who work out of state for an employer subject to New York State law, the employer and employee would pay the payroll tax as if the employee worked in the state. For New York State residents who work out of state for an employer not subject to the New York State law, the employee would pay the full payroll tax amount as if the employee were self-employed. Out-of-state residents who work in New York and their employers can take a credit against the payroll tax.

⁹ Note that the Medicaid Drug Rebate Program under Section 1927 of the Social Security Act, which requires manufacturers to provide rebates to Medicaid, also requires Medicaid to cover most of the manufacturers' drugs (CMS, 2017c).

Than Generic Program (which promotes the use of brand-name drugs when the cost is less than its generic version), and the Preferred Diabetic Supply Program (which is a preferred supply list for blood glucose monitoring and testing supplies) (NYSDOH, 2015). New York Medicaid has also capped prescription drug spending growth (Helgerson, 2017). Providers covered by the 340B drug pricing program also receive discounted prices from drug manufacturers.

Federal Waivers and Legal Considerations

The implementation of the NYHA depends on federal government approval of waivers to allow for federal funds currently paid to the state and its residents to instead be redirected to NYH. In addition to federal waivers, there are legal considerations relating to employer coverage offered by self-funded employers, which are subject to the federal Employee Retirement Income Security Act of 1974 (ERISA) and to the employer shared responsibility provision under the ACA.

Medicaid Waivers

States are required to provide Medicaid to certain groups that are eligible by statute, including low-income children and parents, and those who are disabled. Section 1115 of the Social Security Act allows the secretary of Health and Human Services to waive certain Medicaid rules for states that wish to implement alternative coverage approaches, provided that those states meet specific requirements, such as covering required eligibility groups and benefits (KFF, 2011). Because New York's proposed waiver would cover all currently eligible Medicaid enrollees with coverage that aligns with Medicaid's mandatory minimum requirements, it is possible that the scope of waivers needed to move Medicaid enrollees to the state plan would be limited (Manatt Health, 2018). However, the state would need to meet all current access and coverage requirements, such as providing adequate transportation benefits and ensuring that enrollees had access to Federally Qualified Health Centers. Medicaid beneficiaries are also afforded protections pertaining to prescription drug coverage, which would likely need to be maintained. While states continue to receive federal funding under 1115 waivers, the proposal must be "budget neutral" from the federal government's perspective (CMS, n.d.). The determination of budget neutrality would likely be the most complex aspect of the waiver negotiation, given the scale and magnitude of change in program implementation.

To recoup federal funding for current Medicaid enrollees, New York would need to set up an eligibility tracking system to determine which individuals meet current federal eligibility criteria, and collect and analyze claims data to estimate the federal contribution. Such an approach would create an ongoing administrative cost for New York. In addition to the administrative challenges, it might be difficult to compel enrollees to comply with eligibility determination rules, because coverage under NYH would not be conditional on eligibility status. Where possible, New York State uses third-party sources (e.g., tax records and documentation of other program eligibility)

to document Medicaid eligibility. To the extent that these third-party sources reliably identify sufficient information to verify Medicaid eligibility, the state may be able to avoid seeking additional documentation from enrollees. However, for cases in which third-party data are incomplete, it may be necessary for the state to compel enrollees to provide proof of Medicaid eligibility to avoid losing federal matching funds.

Potentially, the state could propose a block grant or per capita cap approach to receiving federal funding, which is an idea that recently had momentum in Congress.¹⁰ With a block grant or per capita approach, it might be possible to avoid closely tracking eligibility and instead calculate the federal contribution by inflating past spending amounts. Moving to a block grant approach, or making other changes to methods for determining and maintaining program eligibility, would likely require federal waivers. Further, the CBO concluded that this approach will lead to diminished federal funding over time if growth in health care costs exceed the growth rate used to update the federal funding allocation (Hall, 2017).

Medicare Waivers

Under current law, workers pay taxes to support Medicare and are entitled to eligibility when they turn 65 if they (or a spouse) contributed to the program via payroll taxes for at least ten years. People can also become eligible for Medicare if they have a qualifying disability, or if they have end-stage renal disease. Currently, Medicare has cost-sharing requirements, and enrollees must also pay premium contributions (CMS, 2018a). To achieve a single-payer approach, New York would need to move Medicare enrollees into the state plan. Alternatively, the NYHA authorizes the commissioner of health to create a new Medicare Advantage option that is consistent with the NYH plan (e.g., no cost sharing for enrollees, scope of benefits aligned with those proposed in the bill).

Moving Medicare enrollees onto NYH could be done if New York were able to obtain a 402(b) or 1115a waiver to conduct a state-based demonstration in the Medicare program. Such waivers must be budget neutral for the federal government (CMS, 2010). While prior Medicare waivers have allowed hospital and all-payer rate regulation (Manatt Health, 2018), a Medicare waiver that would affect enrollee benefits would be unprecedented.

It is possible that the waivers could be legally challenged by beneficiaries who prefer to receive benefits under the current system. However, because the waiver would be granted only if the federal government agreed that the single-payer approach met established legal requirements, it is unclear whether challenges to the program would be successful.

¹⁰ Block grants and per capita caps were included in several ACA repeal-and-replace proposals, including the Graham-Cassidy-Heller-Johnson amendment, the American Health Care Act of 2017, and the Better Care Reconciliation Act of 2017.

If such a waiver were impossible to obtain, New York could consider other options, such as funding wraparound benefits for Medicare beneficiaries or designing and offering a Medicare Advantage plan that did include premium contributions or beneficiary cost sharing.¹¹

Affordable Care Act Section 1332 Waiver

The ACA allows states to apply for Section 1332 waivers, which enable the state to opt out of ACA requirements related to the health insurance marketplaces and insurance mandates¹² and instead receive the funding that the federal government would have spent on tax credits and CSRs to fund an alternative state program. By statute, the alternate state program must cover at least as many people and provide coverage that is at least as comprehensive and affordable as would have been provided without the waiver (CCIIO, n.d.). In addition, the program must not increase the federal deficit.

Currently, large employers can face tax penalties if they do not offer coverage and an employee seeks ACA tax credits on the ACA's marketplaces. Without a 1332 waiver, it is likely that New York State firms would face such penalties, due to out-of-state employees who would become eligible for tax credits if they lost access to employer coverage. If New York received a 1332 waiver exempting firms from the employer shared responsibility provision, it is possible that tax credit costs for out-of-state workers would be considered by the federal government when calculating the deficit effects of the 1332 waiver. These costs would then be subtracted from New York's pass-through funding.

Through a successful 1332 waiver, New York could exempt state businesses from the employer mandate and receive pass-through funding for federal funding that otherwise would have been spent on marketplace tax credits under current law.

As noted earlier, states have the option to move individuals with incomes between 138 and 200 percent of FPL into a Basic Health Program, and New York has exercised this option by creating the EP. In lieu of tax credits, the federal government provides New York funding for the EP equal to 95 percent of what the eligible population would have gotten if they received federal assistance through the marketplace. It is unclear whether New York would be able to recoup funding for the EP through a 1332 waiver. The ACA authorizes 1332 pass-through funding only for premium tax credits, small-business tax credits, and CSRs; funding for the Basic Health Program is not explicitly mentioned. Citing this argument, CMS recently declined to provide pass-through funding for Basic Health Program enrollees under a 1332 waiver proposed by Minnesota (Department of Health and Human Services [HHS], 2017). To avoid this issue,

¹¹ We did not explore the feasibility of these alternative Medicare approaches in this analysis.

¹² Section 1332 of the ACA allows the state to opt out of both the employer mandate and the individual mandate. However, the ability to opt out of the individual mandate is no longer relevant, given that the Tax Cut and Jobs Act of 2017 eliminated the individual mandate penalty.

New York could repeal the EP in conjunction with the NYHA and seek federal reimbursement under the assumption that EP enrollees would otherwise be eligible for marketplace tax credits. This approach has the additional benefit that it would allow New York to receive 100 percent of premium tax credit funding for those with incomes in the EP-eligible range, as opposed to 95 percent of such funding allotted under the Basic Health Program.

To receive a 1332 waiver, the state must show that the proposal is deficit neutral to the federal government. In its response to previous 1332 applications, the U.S. Department of Health and Human Services has signaled that it will consider federal administrative costs associated with implementing the waiver, lost federal revenue stemming from the elimination of employer shared responsibility payments, and lost revenue stemming from the elimination of exchange user fees and the Patient Centered Outcome Fee as factors that may affect the deficit (Pate, 2017). It is possible that the budget neutrality calculations could also take into account changes in federal tax expenditures resulting from new state taxes to support the NYHA (see Box 1). These costs would be subtracted from any pass-through funding provided to the state via a 1332 waiver.

Federal Regulation of Employer-Sponsored Health Benefits

The NYHA would likely displace employer-sponsored health insurance coverage for New York residents with NYH. This approach raises challenges for firms with out-of-state employees, who would lose access to employer-provided coverage if their firms stopped offering in response to the NYHA.

Even if the federal government waived the employer shared responsibility requirement, some New York businesses may find it difficult to stop offering coverage to out-of-state workers without losing these workers to businesses in neighboring states. This is a concern for the New York City region, where many workers commute from New Jersey and Connecticut, and for businesses close to state lines bordering Pennsylvania and Vermont. The NYHA would allow businesses to receive a tax credit to cover the cost for out-of-state workers, but firms would still need to address the practical implications of offering coverage for a subset of workers. For example, firms may not have enough out-of-state workers to maintain a self-insured risk pool, requiring them to offer an alternative, fully insured plan. Further, it is unclear that firms could legally limit benefit offerings to out-of-state workers while precluding state residents from enrolling. If firms were required to make benefits available to New York State residents, and if these residents opted to enroll, firms would face two costs for these workers—the payroll tax and the cost of offering health insurance.

ERISA, which preempts states' regulation of self-funded health plans, could also pose a barrier to implementing the NYHA. Because the single-payer plan would provide universal coverage and use payroll taxes to help fund the system, self-funded employers operating in New York could argue that the option inappropriately regulates their self-funded plan by effectively compelling them to discontinue their current health plans and offer alternative

benefits. In *RILA v. Fielder*, the Fourth Circuit Court of Appeals ruled against a Maryland state law that would have compelled large firms to spend 8 percent of payroll on employees' health care or pay into a general state health care fund. It was found unlawful because it effectively required firms that had been spending less than 8 percent of wages on health care to increase their contributions to ERISA plans (Takashima, 2007). However, in a subsequent case, the Ninth Circuit Court of Appeals upheld a San Francisco law that required employers to either spend a certain amount on employees' health benefits or make payments into a city fund that would be credited toward discounted health plan services or a city-administered medical reimbursement account for those enrollees (*Golden Gate Restaurant Association v. San Francisco*, 2008). The ambiguity of prior case law suggests that there could be an ERISA-based challenge to any state single-payer system; however, the legal outcome of such a challenge is far from clear (Healthcare Finance, 2013).

4. Overview of Methods

We estimated health care spending and payments in New York State for the years 2022, 2026, and 2031. We assumed the NYHA is fully implemented in all years, and compared the NYHA with a status quo scenario trended forward, applying the current law as of May 2018.

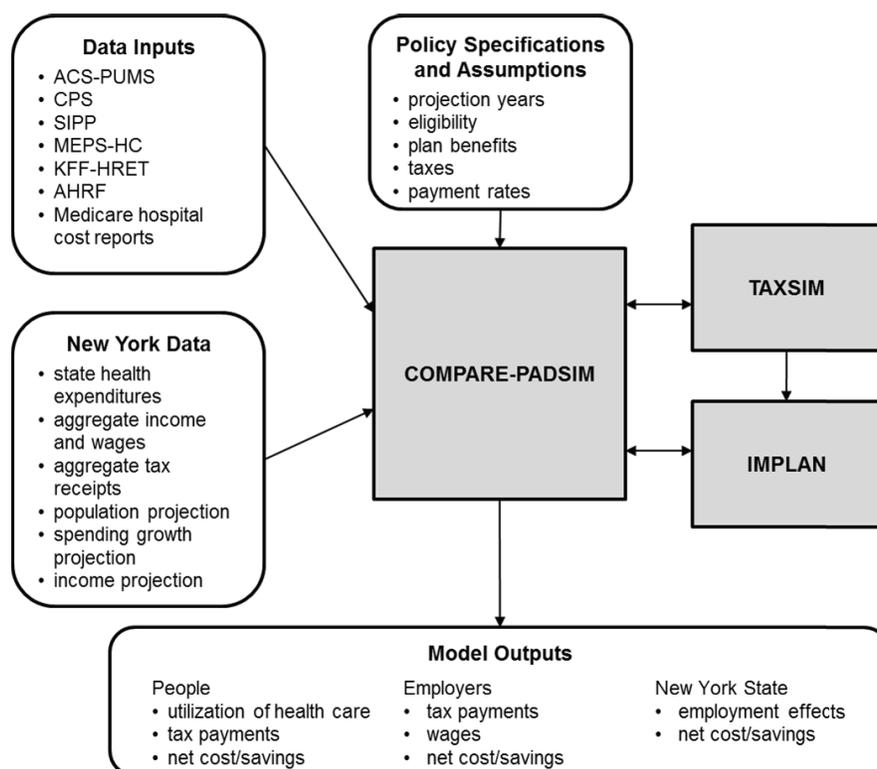
No one data source or model is adequate to address the multiple outcomes of interest in an analysis of as far-reaching a proposal as the NYHA. We started with the most recent historical data available and used growth factors to estimate the population, income, and health care spending in the projection years.

We used RAND's Comprehensive Assessment of Reform Efforts (COMPARE) model and RAND's Health Care Payment and Delivery Simulation Model (PADSIM) to project utilization and financing of health care services under the status quo and under the NYHA. COMPARE is designed to simulate health insurance enrollment decisions and spending, and PADSIM is designed to simulate utilization and spending, taking into account patient demand and provider supply. We combined the modeling output from COMPARE and PADSIM with tax and employment estimates from two other widely used simulation models, the National Bureau of Economic Research TAXSIM model and the Impact Analysis for Planning (IMPLAN) model. Figure 4.1 is a schematic of the modeling approach.

We determined the inputs to these models based on the policy specifications in the NYHA, as well as assumptions drawn from the literature and insights from experts knowledgeable about health care policies nationally and in New York. From the modeling outputs, we calculated changes in health care expenditures; net costs and savings to New Yorkers, employers, and governments; and employment effects.

We conducted environmental scans and interviews with health care policy experts to inform the model parameters and assumptions used in our analysis of the NYHA and the status quo in New York (see Table 4.1 for our assumptions). We focused the literature searches and interviews on administrative costs, drug and device prices, fraud and abuse activities, demand for long-term care, payment rates, and migration (see Appendix A for details). We conducted 14 interviews with subject-matter experts. The interviewees included current and former New York State officials, New York State health care policy experts, and national health care policy experts. We received feedback on key areas for consideration, feasibility, modeling assumptions, and sensitivity specifications and incorporated the feedback into our modeling of a base case NYH scenario and several sensitivity scenarios with alternative assumptions.

Figure 4.1. Overview of Modeling Approach



NOTES: ACS = American Community Survey; PUMS = Public Use Microdata Sample; SIPP = Survey of Income and Program Participation; HC = Household Component; HRET = Health Research & Educational Trust; AHRF = Area Health Resources Files.

Modeling Approach

Population and Health Care Spending

In order to estimate health care spending overall and for different groups of individuals in New York under different policy options, we constructed a synthetic population of New York residents that projected this population over a ten-year period from 2022 to 2031. We used the New York records in the 2016 ACS PUMS as the synthetic population of New York residents.

We started with New York’s aggregate personal health care expenditures from the 2014 CMS State Health Expenditure Accounts (SHEA) (CMS, 2017b). For total health care expenditures, we also added medical structures and equipment expenditures and administrative expenditures to personal health care expenditures (see Box 3). We benchmarked Medicaid expenditures to the fiscal year (FY) 2019 state budget (New York State Division of the Budget [NYSDOB], 2018b).

Box 3. Definitions of Health Care Spending and Service Categories

In this report, we refer to total health care spending as the sum of expenditures for personal health care, medical structures and equipment, health plan administration, state government administration related to health care programs and insurance (other than health plan administration), and employer health benefit administration.

The term **personal health care expenditures** refers to spending on treatments for individuals with specific medical conditions. The service categories of personal health care spending in the CMS SHEA are the following:

- hospital care
- physician and clinical services
- other professional services
- dental services
- home health services
- prescription drugs and other nondurable medical products
- durable medical products
- nursing home care
- other health, residential, and personal care.

Expenditures on **medical structures and equipment** reflect purchases of or investments in structures and equipment in the medical sector. **Health plan administration** includes the costs of running government health care programs and the difference between premiums collected and claims paid by private insurers. **State government administrative expenditures** related to health care programs and insurance (other than health plan administration) are costs of regulating health insurance and revenue collection for health care programs. In this analysis, **employer health benefit administrative expenditures** are the portion of wages for compensation and benefits managers dedicated to managing employee health benefits.

We allocated the aggregate SHE amounts to individuals in the synthetic population by service category and payer (Medicare, Medicaid, and other) based on the distribution of expenditures in the 2014 and 2015 MEPS, Household Component. Then, for each combination of service category and primary source of health insurance coverage, we estimated statewide average provider payment rates and aggregate total revenues to providers (aggregate quantities of services provided are calculated by dividing total revenues by the average payment rate). See Appendix A for details on the service categories, imputation of the MEPS expenditures to the synthetic population, and allocation of aggregate expenditures to individuals.

To project the population, income, and health care expenditures in future years, we applied growth factors shown in Table A.2.

Utilization of Health Care Services

We used COMPARE and PADSIM to quantify the impacts of changes from both the demand side (e.g., due to changes in health insurance coverage and cost sharing) and the supply side (e.g., due to provider payment rate setting). To model how individuals would respond to NYH in terms of health care utilization, we allowed demand for services to change based on past experience, which shows that people’s demand for health care increases when out-of-pocket costs fall (Newhouse and Insurance Experiment Group, 1993; Finkelstein et al., 2012). Total spending, however, depends both on individuals’ demand for services and on providers’ willingness and ability to supply these services.

The resulting changes in utilization and health care spending reflect a balance between patient demand for health care services and provider response to demand and payment arrangements. This integrated approach allows us to address one of the key criticisms of single-payer systems offering “free care for all”—that increased demand from universal coverage and no out-of-pocket costs would be constrained by shortages of health care services supplied by providers and increased wait times.

Further details on these two models are provided in Appendix A. Briefly, COMPARE is a microsimulation model that uses economic theory and past experiences to estimate the effect of health care policy changes on insurance coverage, health care utilization, and spending. COMPARE estimates utilization of health care services based on the cost sharing (deductibles and coinsurance) associated with each individual’s insurance plan. PADSIM is a simulation model that estimates the effects of changes to provider payment policy on health care utilization, access, and spending. In the model, providers respond to patient demand and payment arrangements, and the difference between patient demand and provider supply is quantified as a measure of potential access issues.

Taxes Supporting Health Care Programs

We used income data from the ACS to estimate existing tax payments that support health care programs and the new tax payments under the NYHA. Because personal income, wages, and salaries in the ACS are self-reported and top coded, we adjusted income and wages to match aggregate income and wages reported in the New York FY 2019 Executive Budget Economic and Revenue Outlook (NYSDOB, 2018a); see Appendix A for more details and Table A.3 for the distribution of the population by income groups.

For existing tax payments, we used TAXSIM to estimate federal income, federal payroll, and state income tax liabilities, as well as the corresponding marginal tax rates for New York State residents. TAXSIM is a tax simulation model that is freely available from the National Bureau of Economic Research (Feenberg and Coutts, 1993). The model accounts for federal and state tax laws and individual characteristics such as filing status and income by source. Internet TAXSIM version 27 incorporates the Tax Cuts and Job Act provisions, except for the business income

deduction. Based on historical and projected federal outlays for health care programs and other programs, we estimated the share of federal income taxes that is devoted to health care programs (see Table A.4). We also assigned Health Care Reform Act taxes to individuals and assigned other state and local taxes based on the distribution of state income taxes.

The NYHA would create two new taxes: one on payroll (including wages, salaries, and self-employed income) and the other on taxable income not subject to the payroll tax (such as interest, dividends, and capital gains). We assigned 20 percent of the NYH payroll tax to be paid by employees and 80 percent to be paid by employers, as specified in the NYHA. We used payroll and nonpayroll income in the synthetic population as the tax bases, respectively, and calculated the necessary tax rates to finance NYH.

As the NYHA intends for the NYH taxes to be progressively graduated, we set the NYH payroll tax levels in three brackets with thresholds that increase with the consumer price index (CPI). Note that many different tax schedules with varying degrees of progressivity and regressivity could be established to meet the financing needs of NYH; we present one set of possible rates. We set three brackets: less than \$25,000, \$25,000 to \$128,400, and above \$128,400 in 2018. We set the lower threshold of \$25,000 based on the approximate federal poverty level for a family of four. We set the upper threshold of \$128,400 to be equal to the maximum taxable earnings for the Social Security payroll tax—i.e., the level at which earnings are no longer taxed for Social Security. We fixed the relative payroll tax rate structure for the three brackets to be $1x$, $2x$, and $3x$, and calculated x such that aggregate employer payments under the NYHA equals aggregate employer payments in the status quo. In other words, employers would pay approximately the same amount, on average, before and after the reform.¹³ For the NYH nonpayroll tax, we used these same brackets for taxable nonwage income and the same relative rate schedule, and set the tax rates to produce the necessary funds to cover all remaining costs.

We assumed employer savings on health care payments would be passed back to workers, and increases in employer payments for health benefits would result in lower wages. We calculated the change in wages equal to the average difference in employer spending on ESI premiums and NYH payroll taxes by income group (see Table A.3 for the income groups). Employers that do not offer ESI in the status quo would see an increase in employer payments through the NYH payroll tax, and decrease wages accordingly.¹⁴ Employers with high wages

¹³ Although aggregate employer contributions to health benefits would be the same, individual employers may pay more or less depending on whether they offered ESI in the status quo, as well as the wage distribution in their firm. Whether employees pay more or less would depend on whether they accepted an ESI offer in the status quo and their wages. Employers who do not offer health insurance to their workers in the status quo would pay more under the NYH program, due to the mandatory NYH payroll tax. Conversely, employers who offer health insurance to their workers in the status quo may contribute more or less, depending on the generosity of their benefits in the status quo, employee take-up rates, and the mix of higher- and lower-wage workers on their payroll.

¹⁴ In New York, approximately 56 percent of private-sector establishments do not offer health insurance: 70 percent of establishments with fewer than 25 employees do not offer, versus only 17 percent of establishments with 25–99 employees and 2 percent of establishments with 100 or more employees that do not offer (AHRQ, 2016b).

would also see an increase in employer payments if the NYH payroll tax contributions exceed ESI premium contributions in the status quo.

In this analysis, we calculated the tax exclusion for ESI by first calculating total premium payments and then applying the marginal tax rates for federal and state income and payroll taxes. When calculating payments by individuals for health care, we treated the tax exclusion (referred to as tax expenditures by the government) as a subsidy, and we subtracted that amount from the sum of premium payments, tax payments supporting health care programs, and out-of-pocket payments.

Under the NYHA, we assumed the employer portion of the NYH payroll tax, like the employer portion of federal payroll taxes, would be excluded from workers' taxable income for federal and state income and payroll taxes. We accounted for the value of the tax exclusion in the same way in calculating total health care payments made by individuals.

Employment Effects

Employment and labor supply under the NYHA could change in different ways, and the net effect is uncertain. In this analysis, we used the 2016 New York data in the IMPLAN model to estimate how changes in health care spending and disposable income among New Yorkers affect employment, but we did not analyze other ways employment could change. For example, if health insurance is not tied to employment, some individuals may choose to leave the workforce or reduce hours (CBO, 2009). Others may enter the workforce or increase hours if they do not need to face means testing for Medicaid benefits or marketplace tax credits. Changes in marginal tax rates would decrease labor supply, and employers facing new payroll taxes could cut jobs.

IMPLAN is a variation of input-output models used to calculate economic impacts. It assumes Leontief production functions in which fixed value proportions of capital, labor, and intermediate goods are used in production and price changes are not considered. In IMPLAN, each good or service is identified as belonging to one of 536 mutually exclusive sectors. In this analysis, we considered the impact of changes in health care sector revenues and prices, changes in insurance sector revenues, and changes in disposable income among nine household income categories.¹⁵ The resulting changes in employment reflect direct effects on health care and insurance revenues, as well as indirect effects on sectors that provide inputs to health care and insurance sectors. As sectors expand (or contract) from the direct and indirect effects, there is

¹⁵ The health care sectors were hospitals, physicians, outpatient care centers, medical and diagnostic laboratories, dentists, other health practitioners, home health care services, nursing and community care facilities, and other ambulatory health care services. The insurance sectors were insurance brokers and insurance carriers. The nine household income groups were <\$15,000; \$15,000–\$29,999; \$30,000–\$39,999; \$40,000–\$49,999; \$50,000–\$69,999; \$70,000–\$99,999; \$100,000–\$149,999; \$150,000–\$199,999; and >\$200,000.

also an induced effect on employment in those sectors, which leads to increased income for those workers and subsequently greater demand for all goods due to increased household disposable income.

Key Inputs and Modeling Assumptions

Table 4.1 shows our key inputs and base case assumptions in the general modeling approach for both the status quo and the NYHA projections. Further details on the modeling methodology are in Appendix A. Alternative assumptions for the sensitivity analyses are discussed in Chapter Six.

Table 4.1. Inputs and Assumptions in Modeling the Status Quo and the New York Health Act

Inputs and Assumptions		Sources
Population		
Population	New York State population from the 2016 ACS one-year file PUMS Health status information from the 2016 CPS March Supplement	United States Census Bureau, n.d.a, n.d.b
Population growth	New York State population projected to increase at an average annual rate of 0.4% between 2017 and 2031; growth rates vary by age and sex.	Demographics Research Group, 2016
Insurance coverage		
Individual choice of coverage	<u>Status quo</u> : Individuals decide whether to enroll by weighing the cost and benefits of available options: ESI, nongroup, Medicaid, Medicaid-Medicare (duals), Medicare private (Medicare with supplemental coverage), Medicare, other public (military health), uninsured. Assumed continuation of current policies, the elimination of the individual mandate penalty, and no federal CSR payments. <u>NYHA</u> : State residents automatically enrolled in NYH. Assumed the NYH plan equivalent to a 98% actuarial value plan ⁹ across personal health care expenditures and medical structures and equipment, excluding nondurable medical products paid out of pocket and long-term care expenditures. Among those eligible for Medicaid and Medicare in the status quo, assumed nursing home and home health care services would continue to be based on Medicaid and Medicare eligibility via waivers.	Goldman, Buchanan, and Keeler, 2000; Marquis and Long, 1995
Employer decision to offer coverage	<u>Status quo</u> : Firms consider worker preferences for insurance when making decisions; ¹⁰ unionized firms more likely than nonunionized firms to offer coverage, smaller firms less likely to offer coverage than larger firms. <u>NYHA</u> : Assumed firms do not offer insurance to New York State residents, due to the mandatory payroll tax contribution to NYH. Assumed waiver approvals allow employer payroll tax contributions in lieu of the employer mandate requirements.	Monheit and Vistnes, 1999; Pauly, 1986
Utilization		
Demand-side utilization	People use less care when cost sharing (deductibles, copayments) is higher—e.g., those with 25% cost sharing spend about 20% less than those with free care.	Newhouse and Insurance Experiment Group, 1993

Table 4.1—Continued

	Inputs and Assumptions	Sources
Supply-side response to demand	Providers reduce supply of services when payment levels decrease (physician and hospital own-price elasticity of supply equal to 0.6) or financial risk increases (semielasticity of output with respect to “prospectiveness” equal to -0.3).	White et al., 2016; Clemens and Gottlieb, 2014; Dunn and Shapiro, 2012; Hadley and Reschovsky, 2006; He and Mellor, 2012; White and Yee, 2013; Epstein, Begg, and McNeil, 1986
Health care costs		
Health care expenditures	<p>New York aggregate personal health care expenditures from the 2014 SHE, inflated to 2016 dollars using per capita health expenditure growth in the National Health Expenditure Accounts (NHEA). Medical structures and equipment add-on factor equal to 4.59% of nonretail personal health care expenditures in the NHEA.</p> <p>Aggregate medical expenditures allocated to individuals based on distribution of health care expenditures in the 2014–2015 MEPS, Household Component; aggregate institutional long-term care expenditures allocated uniformly to nursing home residents.</p>	CMS, 2018b; AHRQ, 2017
Provider payment	<p>Assumed NYH payments would be predominantly fee-for-service (FFS) and value-based payment arrangements continue at a similar level as in the status quo. Assumed NYH payment rates for hospital, physician, and other clinical services are set at the all-payer average payment rate in the status quo.</p> <p>Assumed payment rate growth under NYH equals growth in public coverage in the status quo. Average annual growth rates from 2017–2031 (see Table A.2):</p> <p><u>Status quo:</u></p> <ul style="list-style-type: none"> • hospital services, private coverage, 3.4% • hospital services, public coverage, 2.6% • physician services, private coverage, 1.2% • physician services, public coverage, 0.4% <p><u>NYHA:</u></p> <ul style="list-style-type: none"> • hospital services, 2.6% • physician services, 0.4% 	RAND assumptions based on GDP price index and excess growth rates. Medicare trustees projected increases in inpatient hospital payment, effects of the Medicare Access and CHIP Reauthorization Act, sequestration, and Medicare spillover effects.
Health plan administration	<p><u>Status quo:</u> Administrative expenses out of personal health care and structures and equipment expenditures, by payer:</p> <ul style="list-style-type: none"> • New York private insurers, 18% • New York Medicaid FFS and managed care, 7% • Medicare FFS and managed care, 7% • Medicare FFS, 3% <p><u>NYHA:</u> Assumed NYH administrative rate of 6%, which is 1 percentage point lower than the estimated New York Medicaid rate in 2016.</p>	National Association of Insurance Commissioners (NAIC), 2017; CMS, 2016; NYSDOB, 2015; Office of the New York State Comptroller, 2017b; CMS, 2018b

Table 4.1—Continued

	Inputs and Assumptions	Sources
State government administration (other than health plan administration)	<p><u>Status quo:</u></p> <ul style="list-style-type: none"> • NYS DTF budget, \$463.6 million in state fiscal year (SFY) 2018–2019 • NYS Department of Financial Services (DFS) budget, \$368.1 million in SFY 2018–2019 (across all forms of insurance—e.g., health, property, casualty). Of this, assumed \$114.8 million of DFS budget relates to health insurance (based on 31% of all insurance carriers employed in health and medical insurance nationwide). <p><u>NYHA:</u></p> <ul style="list-style-type: none"> • Assumed 2% increase in DTF operating costs. • Assumed 50% decrease in DFS operating costs related to health insurance. 	State Operations Budget, S. 7500/A. 9500, 2017–2018; Bureau of Labor Statistics, 2017
Provider administration	<p><u>Status quo:</u> Provider administrative costs by provider type:</p> <ul style="list-style-type: none"> • 13% of physician and clinical service expenditures • 12% of hospital expenditures in New York • 10% of other service expenditures <p><u>NYHA:</u> Assumed 13% reduction in provider administrative costs.</p>	Authors' analysis of RAND Hospital Data, 2018; Blanchfield et al., 2010; Pozen and Cutler, 2010; CMS, 2018b; Aaron, 2003; Woolhandler, Campbell, and Himmelstein, 2003; Morra et al., 2011; Jiwani et al., 2014
Employer administration	<p><u>Status quo:</u> \$879 million in aggregate wages for compensation and benefits managers and compensation, benefits, and job analysis specialists in New York. Of this, assumed 20% dedicated to management of health benefits.</p> <p><u>NYHA:</u> Assumed 10% reduction in compensation and benefits personnel support for health benefits.</p>	Bureau of Labor Statistics, 2017
Drug and device prices	<p><u>Status quo:</u> Medicaid prescription drug prices are approximately 0.66 of Medicare Part D prices, and prices paid by private insurers are approximately 1.22 of Medicare Part D prices.</p> <p>Assumed prescription drug price growth equal to the industry average annual growth rate in pharmaceutical and medicine manufacturing from 2008 to 2017, 5.6%. Assumed medical device price growth equals payment rate growth for physician services.</p> <p><u>NYHA:</u> Assumed drug and device prices are 10% lower than Medicare prices in the status quo.</p>	Roehrig, 2018; Gagnon and Wolfe, 2015; Government Accountability Office, 2014; Cook, 2013; CBO, 2016; Bureau of Labor Statistics, 2018
Fraud and abuse	<p><u>Status quo:</u> Fraud and abuse activities conducted by the NYS Office of the Medicaid Inspector General (OMIG), the NYS Office of the Attorney General (OAG) Medicaid Fraud Control Unit, the Department of Health and Human Services Health Care Fraud and Abuse Control Program and related partnerships, and commercial insurers.</p> <p><u>NYHA:</u> Assumed NYH establishes activities similar to those under Medicaid and commercial insurers, and no change in overall fraud levels and costs of fraud and abuse detection and prevention.</p>	OMIG, 2016; OAG, 2008; Department of Health and Human Services, Office of the Inspector General (HHS OIG), 2017

Table 4.1—Continued

	Inputs and Assumptions	Sources
LTC	<p><u>Status quo</u>: Considered LTC expenditures to be nursing home care, home health care, and the portion of the SHE “other, health, residential, and personal care” related to Medicaid home- and community-based services (HCBS; such that Medicaid LTC expenditures are 36% of total Medicaid expenditures) and residential facility care (based on provider revenues of residential facilities and other ambulatory care).</p> <p>Assumed payment rate growth for nursing services is equal to the industry average annual growth rate in nursing care facilities from 2008 to 2017, 2.0%. Assumed payment rate growth for home health services equals payment rate growth for physician services.</p> <p><u>NYHA</u>: Under the base case NYH scenario without coverage of LTC benefits, assumed LTC expenditures are equal to those in the status quo.</p> <p>If NYH covers LTC benefits, assumed all formal paid LTC (home and institutional care) shifts to being paid by NYH. Assumed 50% of informal home care in the status quo would be eligible for NYH coverage, with 90% of this shift resulting in increased demand for HCBS and 10% increasing demand for institutional care. This results in an approximately 200% increase in demand for HCBS and 10% increase in demand for institutional care. Note that not all of the increased demand results in increased utilization because of supply constraints.</p>	CMS, 2018b; CMS, 2015; United States Census Bureau, 2016a; Bureau of Labor Statistics, 2018; Hurd et al., 2013
Income, wages, and employment		
Income and wages	<p>Total gross income: \$868 billion in 2016 Total wages: \$596 billion in 2016 Total state personal income taxes: \$47.1 billion in 2016 Total federal individual income taxes: \$137.7 billion in 2015</p> <p>Annual per capita growth rate ranges from 3.4% to 6.0% for income and from 2.6% to 4.8% for wages between 2017 and 2031.</p>	NYSOH, 2018; DTF, 2017; Internal Revenue Service (IRS), 2015; CBO, 2017a
Wage pass back	Employers adjust wages based on the difference between spending on payroll tax and health insurance contributions, to maintain employees’ total compensation.	Pauly, 1999
Employment	Employment changes due to direct and indirect effects of changes in health care service utilization and insurance, and induced effects due to changes in the health care and insurance sectors, as well as households’ disposable income reflecting the net effect of changes in health care payments (premiums, taxes, and out-of-pocket payments) and wages.	IMPLAN

^a Health plans can be designed in different ways and have the same actuarial value. The 98-percent actuarial value plan is modeled with a zero-deductible, 2.5-percent coinsurance and \$2,000 out-of-pocket maximum. The coinsurance and out-of-pocket maximum reflect average health care spending for services not covered by NYH.

^b This methodology takes into account both the cost of offering coverage, the tax treatment of employer-sponsored coverage, and the possibility that workers may have outside insurance options (e.g., public coverage), which make employer coverage less valuable.

Provider Payment Rates

The NYHA does not specify the exact level of provider payment rates, which are critical determinants of the costs and impacts of NYH relative to the status quo. The legislation requires that rates are “reasonable and reasonably related to the cost of efficiently providing the health

care service and assuring an adequate and accessible supply of the health care service” (New York State Assembly, 2018) Other single-payer proposals have anticipated that rates would fall on average, due to administrative savings and increased negotiating power on the part of the state, which would become a monopsony buyer (Gaffney et al., 2016). Cross-national studies comparing provider administrative costs find that hospitals and physicians in the United States spend more on administration than other countries with single-payer or heavily regulated multipayer systems (Morra et al., 2011; Himmelstein et al., 2014). Reductions in rates may affect providers’ willingness to supply services—for example, moving to an average rate across payers could cause providers to increase their supply of services for those who were previously eligible for Medicaid (whose rates would increase relative to current law), and to decrease their supply of services to those who formerly had commercial insurance. On the other hand, it is possible that providers, or subsets of providers, would leverage the political process and negotiations to preserve rates. In markets where providers have more negotiating power, payment rates from commercial insurers have been much higher than Medicare payment rates (Ginsburg, 2010). In addition, the consolidation of providers can increase their leverage in rate negotiations (Berenson et al., 2012).

In our modeling of the NYHA, we assumed that NYH payment rates for each service category in 2022 would be set equal to the dollar-weighted average payment rate across all payers under the status quo minus an adjustment for reductions in provider administrative expenses. In general, these NYH payment rates would exceed status quo Medicaid payment rates and fall well below commercial payment rates under the status quo. This means that, overall, health care providers’ revenues relative to their expenses would be comparable to the status quo in this initial year; however, the impact on payment rates experienced by individual providers would depend on their payer mix in the status quo. For example, providers who primarily serve a commercially insured population would see decreases in payment, while providers serving predominantly Medicaid patients would see increases in payment.

Although the NYH payment rates start at the all-payer average payment rate from the status quo, we assumed slower growth in the NYH payment rates over time compared to payments in the status quo. We set the NYH payment growth rate to be equal to payment growth for public coverage under the status quo, which typically increases at a slower rate than payments for private coverage. Thus, the NYH payment rates grow more slowly and diverge from the status quo payment rates over time.

Administrative Costs

In this analysis, we considered four types of health care administration that could change:

- **Health plan administration** (by private plans and by public health care programs such as Medicaid, Medicare, and NYH) includes activities related to eligibility determination, enrollment, insurance broker activities, provider negotiations, provider network formation,

attribution of patients to providers, communications with enrollees, provider profiling, actuarial analyses and premium setting, claims processing, prior authorization, utilization review, and generation of profits.

- **Government administration**, other than health plan administration for public health coverage programs, includes revenue collection, regulatory oversight, premium rate review, and provider licensing. We focused on state government administrative costs based on state department budgets.
- **Provider administration** includes billing, collections, regulatory compliance, negotiations with health plans, and quality reporting.
- **Employer benefit administration** includes choosing which plans to offer, designing benefits, enrollment, collecting and paying premiums, and addressing employee concerns.

Health Plan Administration

The NYH plan would be administered by the state through the Department of Health or other designated state agency. We assumed that NYH would be organized as a system similar to Medicare fee-for-service, with an option for not-for-profit plans or government plans to provide care coordination services. NYH would take over claims processing, provider negotiations, actuarial analysis, and eligibility determinations that are conducted by private and public payers in the status quo. New administrative activities under the NYHA would include verifying residency, qualifying care coordinators, contracting navigator-like functions, and handling out-of-state issues. Reduced health plan administrative costs under the NYHA would include the elimination of profits, no provider network formation, and more limited enrollment activities. While enrollment activities would be more limited without churn between multiple sources of insurance, the state would still need to enroll everyone once, and enroll and disenroll those who move in and out of the state. In addition, the state would likely need to track eligibility for Medicare and Medicaid in order to draw down federal matching funds under waiver arrangements.

We modeled health plan administration costs as an administrative load factor on claims paid by plans. We used several data sources to estimate the administrative load for private insurance, Medicaid, and Medicare in the status quo (see Appendix A for details). To estimate an administrative rate among private insurers in New York, we used filing reports from the National Association of Insurance Commissioners (NAIC, 2017) to estimate an average rate of 18 percent among insurers representing over 80 percent of covered lives among the commercially insured. To estimate the administrative rate in the New York Medicaid program, including administrative costs incurred by managed care organizations, we used data from the Medicaid Budget and Expenditure System/State Children's Health Insurance Program Budget and Expenditure System, budget appropriations for the OMIG and managed care

administrative costs (CMS, 2016; NYSDOB, 2015; Office of the New York State Comptroller, 2017b) and estimated an overall administrative rate of approximately 7 percent. From the CMS NHEA, the Medicare government administrative rate out of personal health care and medical structures and equipment expenditures is 3 percent; when the Medicare net cost of health insurance (for Medicare Advantage and Part D plans) is included, the administrative rate is approximately 7 percent (CMS, 2018b).

Because NYH would take over Medicaid administration and claims processing for a broad population, we assumed the NYH administration rate would be 6 percent, which is 1 percentage point lower than New York Medicaid's administrative rate in the status quo. Although NYH would not have managed care organizations, there would be administrative functions, such as verifying residency for the broader population, dealing with out-of-state services, and continuing to track Medicaid and Medicare eligibility for purposes of drawing down federal matching funds via waivers.

Government Administration (Other Than Health Plan Administration)

Under the NYHA, the state government administrative functions such as tax revenue collection by the DTF would expand. While the new tax revenue under NYH would be sizeable, the incremental administrative cost of collecting the NYH payroll tax and the nonpayroll tax (as part of personal income taxes) would not substantially change DTF operations. However, the DTF may need to expand its operations examining tax evasion. The DFS would have reduced administrative functions related to premium review and oversight of commercial health insurers. We assumed federal government administrative costs related to health care revenue collection and regulations remain constant.

Provider Administration

Provider administration related to billing activities would likely decrease under NYH. Instead of negotiating rates with multiple payers, providers would negotiate rates only with NYH. Although billing may be simplified, providers would still need to submit claims to be reimbursed in a fee-for-service payment system. In addition, the reporting of quality measures would likely be simplified under NYH compared to different reporting guidelines with multiple insurers in the status quo, which would also decrease provider administrative costs.

For possible reductions in provider administration, we found a wide range of estimates from 9 to 73 percent (authors' analysis of RAND Hospital Data, 2018; Blanchfield et al., 2010; Pozen and Cutler, 2010; CMS, 2018b; Aaron, 2003; Woolhandler, Campbell, and Himmelstein, 2003; Morra et al., 2011; Jiwani et al., 2014). We applied the median estimate of 13 percent as the reduction in provider administration costs due to decreased administrative complexity under the

NYHA compared to the status quo.¹⁶ We modeled the decrease in provider administration costs as a reduction in provider expenses, which, holding payment rates per unit of service constant, would allow providers to supply more health care services. Consistent with the sponsor's intent, provider payment rates under the NYHA were reduced modestly relative to the status quo, in order to recoup reductions in providers' administrative expenses.

Employer Benefit Administration

Last, employer administration for health benefits for New York State residents would likely be reduced under the NYHA. Employers would no longer need to manage health insurance choices such as selecting which health plans to offer, designing health benefits, enrolling and disenrolling employees, collecting premiums, and communicating with employees about health benefits. However, we assumed that employer administrative costs would not go to zero because they would need to collect the NYH payroll tax and many businesses would still have employees who live outside New York State—particularly businesses with locations in multiple states and businesses in New York City that may have employees who commute from across the tristate area.

We modeled employer benefit administration costs based on wages for benefits personnel. Employer benefit administration is not currently captured in health expenditure accounts, but we include these costs in our analysis as they are likely to change under the NYHA.

Prices Paid for Prescription Drugs and Medical Devices

Compared to the status quo, in which drug and device prices are negotiated separately by several payers, NYH may have more leverage to negotiate prices and rebates. However, any cost reductions depend on the extent to which the state is willing and able to negotiate or regulate prices and the effectiveness of pricing mechanisms employed.

¹⁶ These estimates are difficult to compare and vary widely partly because they are making different comparisons and studying different provider types. For example, the 9-percent estimate is based on a comparison of hospital administrative costs in Maryland, which has all-payer rate setting for hospitals, and the national average (RAND Hospital Data, 2018). The 73-percent estimate is based on a comparison of the time spent on administrative activities as reported in a small survey of physician practices in the United States and Canada (Morra et al., 2011). Although it is uncertain exactly how NYH would be implemented, it may differ from Maryland's all-payer hospital model and from administration in Canada. Notably, Morra et al. (2011) attribute most of the difference in physician administrative costs to U.S. physicians' obtaining prior authorizations. Under NYH, prior authorizations would be required for prescription drugs not on the preferred drug list and could be used for other services. Thus, we use the median in order to discount the two extremes of the estimates in the range. Without the two extremes, the remaining three estimates are 12 percent (Blanchfield et al., 2010, estimate of physician administration), 13 percent (administrative spending difference between the United States and Canada estimated by Pozen and Cutler, 2010, relative to nonretail personal health care and medical structures and equipment expenditures in NHEA 2002), and 37 percent (the interpretation of Woolhandler, Campbell, and Himmelstein, 2003, by Aaron, 2003).

We used relative price information between Medicaid and other payers, prior analyses of rebates, and generic drug dispensing rates to estimate possible price reductions in NYH. Under the status quo, the prescription drug prices paid by Medicaid (including the basic and inflation-based rebates but not supplemental rebates) are approximately 66 percent of the prices paid by Medicare Part D (Gagnon and Wolfe, 2015; Government Accountability Office, 2014; Cook, 2013; Roehrig, 2018), and the prescription drug prices paid by Medicare Part D plans are approximately 82 percent of the prices paid by commercial payers (Roehrig, 2018).

The drug and device prices under the NYHA would depend on negotiations between NYH and manufacturers. NYH may seek rebates similar to those under the Medicaid program. As a benchmark for a possible rebate, we considered a CBO budget option that would require manufacturers to pay a rebate for brand-name drugs covered under Medicare Part D for Low-Income Subsidy (LIS) enrollees (CBO, 2016). This LIS rebate would be similar to Medicaid rebates, which are at a minimum 23.1 percent of the average manufacturer's price plus an inflation-based rebate if the drug price increases faster than inflation. The CBO scored this option to save \$7 billion in 2019 and \$26 billion in 2026. The Part D LIS program outlays are projected to be \$32 billion in 2019 and \$56 billion in 2026 (CBO, 2017a), meaning that the LIS rebates would reduce spending by 22 percent to 46 percent. We assumed it would be difficult for NYH to negotiate drug prices equal to Medicaid prices for the entire state population (having less leverage than a federal requirement on manufacturers for Medicare beneficiaries), and that the resulting prices would be approximately 10 percent below Medicare Part D prices under the status quo. We assumed that prices for nonretail drugs (e.g., those delivered in physician offices) would follow the changes in provider payment rates.

Negotiations for the prices of durable medical equipment (DME) could be similar to the drug price negotiations (and similar in the use of preferred lists). The extent of price reductions may be limited, given that Medicare has already experienced reductions in DME spending by 19 percent between 2005 and 2014, primarily due to competitive bidding for DME (MedPAC, 2016). In the base case scenario, we assumed that DME prices under the NYHA would also be 10 percent lower than Medicare prices for DME under the status quo.

Fraud and Abuse Detection Costs

Health care fraud and abuse levels are difficult to assess. In the United States, the Federal Bureau of Investigation has estimated that health care fraudulent billing ranges from 3 to 10 percent of total health care expenditures (Federal Bureau of Investigation, 2011). Fraud and abuse occur in both public health care programs and in private insurance. The Departments of Health and Human Services and Justice lead the Health Care Fraud and Abuse Control Program (HHS OIG, 2017) that includes various teams, task forces, audits, and partnerships. State agencies also investigate fraud in Medicaid programs. In New York, the OMIG and the Medicaid Fraud Control Unit under the New York attorney general both review Medicaid fraud, and each has historically recovered approximately 0.5 percent of Medicaid personal health care

expenditures each year (see Table A.5). Commercial insurers may conduct similar fraud and abuse activities, as well as provider screening and claims review.

Under the NYHA, fraud and abuse levels and activities to detect and prevent fraud may change relative to the status quo. On one hand, fraud and abuse could increase if commercial insurers are more successful at preventing fraud than state agencies. In addition, the shift to fee-for-service payments across NYH (versus Medicaid managed care) may result in a system that is susceptible to fraud—e.g., from providers upcoding or billing for services that did not occur. On the other hand, NYH could potentially generate savings through the enforcement power of the state government and by creating efficiencies in monitoring and preventing fraud as a single authority able to analyze industrywide health and tax data, in contrast to current fraud and abuse detection activities, which are spread across multiple agencies and entities, including governments and private companies. Given that the cost effectiveness of fraud prevention activities in the commercial insurers is not publicly reported, we assumed that the net savings rate of fraud prevention in NYH would be approximately the same as fraud prevention by multiple payers in the status quo.

Long-Term Care Costs

The NYHA specifies that the scope of benefits in NYH initially will exclude long-term care, and that the NYH Board of Trustees will develop and submit a proposal to add long-term care benefits. Significant uncertainties surround the timing, content, and likelihood of enactment of a proposal to expand NYH to include long-term care. Therefore, we assumed in our base case modeling that long-term care benefits would not be covered by NYH. Long-term care would, instead, be carved out and financed by the same patchwork as the status quo, including Medicare coverage of limited post-acute services, limited Medicaid coverage of long-term nursing facility care, and significant out-of-pocket financing—assuming waivers allow for this arrangement.

In the base case NYHA scenario without coverage of long-term care benefits, we assumed long-term care expenditures remained constant from the status quo. In the absence of a defined long-term care benefit under the NYHA, we assumed long-term services and supports provided by Medicaid, and skilled nursing facility and home health care provided by Medicare, would still be provided to eligible individuals under a waiver arrangement for NYH, such that no one has less generous coverage than they did in the status quo.

In addition to our base case modeling, we also report an analysis of an alternative NYH policy option that includes coverage of long-term care benefits (see Chapter Six for further details about these alternative specifications for NYH coverage). For this NYHA scenario that covers long-term care benefits, we assumed that all formal paid long-term care—institutional care and home care—paid by any payer or out of pocket under the status quo would shift to being paid by NYH. In addition, we assumed that a portion of informal home care in the status quo is shifted to being paid by NYH.

Limitations

This analysis has several limitations. As with any modeling analysis, we make many assumptions related to the proposed policy itself, how the policy would be implemented, the political leadership, and how a multitude of stakeholders would respond to the policy changes. Simulation modeling, in general, relies on an assumption that policies are adopted as described, and that implementation of these policies is effective. However, we know from experience that there may be administrative, cultural, political, and other issues that could make health care reforms difficult to adopt. Moreover, implementation may not go as planned, due to challenges ranging from technological issues to staff training. Our approach is to be transparent about our assumptions in order to allow policymakers and stakeholders to assess how reasonable our assumptions and results are, and to include sensitivity analyses that show the effects of alternative assumptions.

All of the scenarios we modeled include the assumption that federal waivers are approved. We did not explore the feasibility of alternative approaches if federal waivers are not approved. We also did not explore the feasibility of federal approval for a state waiver application that seeks to maximize federal matching funds beyond current enrollment in Medicaid and other federal programs in the status quo—e.g., by enrolling Medicaid-eligible individuals not currently enrolled in Medicaid. Although the take-up rate for NYH could be higher than the take-up rate for Medicaid among currently uninsured Medicaid-eligible individuals, these individuals typically have low health care spending and would add marginal costs to the program.

With any policy that would entail sweeping changes such as a single-payer health care system, there are uncertainties in how complex, strategic interactions between the governing board, federal government, elected officials, providers, and the general public would unfold. In our analysis, we rely on our best judgment, based on the literature and input we received from our subject-matter experts. Our base case NYH scenario reflects our midpoint assumptions for a number of different parameters. This base case analysis may serve as guidance regarding the possible impact of the NYHA, but it is impossible to predict how the NYH board would implement the program and how various stakeholders would respond. Our sensitivity analyses vary key assumptions across a broad range of possible scenarios, which we designed to capture the wide range of opinions among our expert interviewees and parameters considered in prior analyses.

A large-scale policy change such as the NYHA could have broad effects on the state economy that we do not consider in this analysis. For example, widespread access to health care coverage could affect individuals' labor market participation decisions. On the one hand, some people may retire or reduce their hours at work because they no longer depend on job-based insurance. On the other hand, increased access to health care could improve the overall health of the population, which could increase the state's productivity in the long run. Higher payroll and

nonpayroll taxes could also affect individuals' decisions to establish residency in New York and businesses' decisions to locate within the state. While those who face new taxes under the NYHA might be inclined to leave the state, individuals in need of health care could enter. Taxes could also change investment decisions, the timing of capital gains realizations, or businesses' use of labor versus capital in production processes. In general, our model does not take these broad economic considerations into account. However, we discuss the literature on tax avoidance and how tax changes and access to health insurance affect migration decisions. We also present some out-of-model estimates to illustrate how proposed tax rates might change under alternative assumptions about avoidance strategies.

The NYHA could have a particularly important effect on health care providers, who would experience changes in payment rates and reductions in administrative costs under the plan. We account for provider response through the PADSIM model, which estimates how providers' willingness to supply services will change in response to payment changes. However, the empirical literature on providers' response to payment changes is relatively thin, and studies have not always produced consistent results. Our findings, therefore, are uncertain. We address this issue in our sensitivity analyses that vary providers' response to payment rates and patient demand. We do not directly account for the possibility that providers may leave the state in response to payment changes. However, to the extent that migration is captured in the overall provider response estimated in prior literature, we implicitly account for provider migration in our analyses. Further, we do not consider the possibility that wealthier consumers might be able to contract directly with health care providers (e.g., "concierge care"), which could reduce access for those who rely solely on the NYH plan.

We assumed that businesses would respond to health insurance regulations and taxes by adjusting workers' wages. For example, if a firm stops offering health insurance, we assumed that wages would go up to compensate workers for the loss of the benefit. Conversely, we assumed that firms would respond to higher payroll taxes by adjusting workers' wages downward. These assumptions are consistent with economic theory (Pauly, 1999) and are similar to the assumptions used by other modeling groups, including the CBO (CBO, 2016). However, other literature suggests that wages may not fully adjust to changes in health insurance provision, particularly in the short run (Sommers, 2005). If wages are slow to adjust, our assumptions may be incorrect. However, assumptions about short-run wage rigidity have little practical effect on our results because any increases in wages due to the elimination of health insurance would be offset, in aggregate, by an increase in payroll taxes to cover the cost of NYH. Perhaps a more important concern is that, if businesses that do not currently offer coverage are constrained by the minimum wage, they may not be able to adjust wages downward to account for new payroll taxes. The impact of the minimum wage could be especially important for New York, given that the minimum wage is on track to increase to \$15 per hour over the next several years (New York State, n.d.).

We modeled the impact of the NYHA assuming other social and economic policies remain stable, and that trends in health care cost growth and state economic performance reflect historic experience. While changes in the NYH payroll revenue would be cyclical and health care costs would not, this analysis was conducted at one point in time. However, it is possible that other policy changes—such as a large-scale tax reform—could interact with the NYHA in a manner that would affect our conclusions. We estimated income tax payments under current law reflecting the Tax Cuts and Job Act, but we do not forecast changes in wages due to the act. Similarly, it is possible that major health care innovations (e.g., new technology or new therapies) or disruptive economic events (a recession) could affect our results.

Finally, we do not assess changes in the appropriateness of health care services, health status, or health outcomes. It is possible that access to insurance and reduced fragmentation of the health care system could improve health care delivery and ultimately people's health. However, there is considerable uncertainty in how the program would be implemented and how the program would translate into health outcomes.

5. Results: Estimated Impact of the New York Health Act

This chapter presents the results of our modeling analysis under our base case assumptions (see Chapter Six for results under alternative assumptions). We first discuss the NYHA's estimated effects on health insurance coverage. Next, we present results on total health care spending (for the utilization of health care services and for administration), provider revenues, and health care services received by individuals. We then show health care payments by type (e.g., premium payments and tax payments), government outlays, household payments by income group, and employer payments. Finally, we discuss the effects of including potential effects on employment, long-term care benefits in NYH, and possible migration effects among individuals and firms.

Coverage

- *The NYHA would consolidate the multiple sources of insurance coverage under the status quo into one state-sponsored plan. The number of uninsured would decrease to zero, as nearly all state residents would be covered by NYH and about 1 percent would have primary coverage from other federal programs.*

Table 5.1 shows primary insurance coverage under the status quo and the NYHA. We display individuals assigned to one source of coverage according to a hierarchy; in reality, individuals may have partial year coverage or multiple sources of coverage that contribute to their health care payments. Under the status quo, we estimate the uninsured rate would be 7 percent in 2022 and 6 percent in 2026 and 2031. Under the NYHA, no one is uninsured because all state residents are eligible for coverage through NYH, regardless of immigration status. We assumed that some individuals would continue to have public insurance coverage through federal health care programs such as the Veterans Health Administration and the Indian Health Service; however, these individuals may also receive services paid by NYH.

Health Care Spending

- *Total health care spending under the NYHA would decrease by about 1 percent in 2022 and fall by about 3 percent by 2031 relative to the status quo.*
- *From 2022 through 2031, the ten-year impact of the NYHA on total health care spending is a net savings of \$80 billion, or 2 percent.*
- *Spending on health care services would increase by 2 to 5 percent relative to the status quo, reflecting the net effect of increased utilization and slower provider payment growth over time.*

Table 5.1. Projected Primary Sources of Insurance Coverage in New York

	Number of Individuals, Millions (Share of Population, Percent)		
	2022	2026	2031
Status quo			
Employer	9.6 (47%)	9.7 (47%)	9.9 (48%)
Medicaid	4.0 (20%)	4.0 (19%)	3.9 (19%)
Medicare	2.9 (15%)	3.2 (15%)	3.4 (16%)
Dual Medicaid and Medicare	1.0 (5%)	1.1 (5%)	1.1 (5%)
EP	0.7 (3%)	0.7 (3%)	0.7 (3%)
CHP	0.2 (1%)	0.2 (1%)	0.2 (1%)
Individual	0.3 (2%)	0.3 (2%)	0.3 (2%)
Other public	0.1 (1%)	0.1 (1%)	0.1 (1%)
Uninsured	1.4 (7%)	1.3 (6%)	1.2 (6%)
Total	20.2 (100%)	20.5 (100%)	20.9 (100%)
NYHA			
NYH	20.1 (99%)	20.4 (99%)	20.7 (99%)
Other public	0.1 (1%)	0.1 (1%)	0.1 (1%)
Total	20.2 (100%)	20.5 (100%)	20.9 (100%)

SOURCES: Authors' analysis based on the 2016 ACS; NYSOH, 2017b; and the RAND COMPARE model.

NOTES: Individuals are assigned to one insurance category based on their primary source of insurance coverage. Other public coverage includes programs such as the Veterans Health Administration and the Indian Health Services. Totals may not sum due to rounding.

- *The cost of increased utilization would be offset by decreases in administrative cost and by reductions in the growth of provider payment rates over time.*
- *Increases in health care utilization would be concentrated among those with household incomes under 200 percent of FPL, who would consume an additional \$1,110 to \$1,800 per capita in health care services in 2022. For those with higher incomes, per capita spending would be nearly the same in each scenario.*

Table 5.2 shows total health care spending for New York residents, which includes spending on health care services and administrative costs, across all funding sources. Under the status quo, we estimate that total health care spending would increase from \$311 billion in 2022 to \$475 billion in 2031. This constitutes about 17 to 18 percent of the gross state product in New York.¹⁷

¹⁷ The gross state product (GSP) in New York from 1997 to 2017 is available from the U.S. Bureau of Economic Analysis (2018). We estimated GSP in future years by applying the average annual growth in GSP from 1997 to 2017, which results in \$1,880 billion in 2022; \$2,198 billion in 2026; and \$2,671 billion in 2031.

Under our base case assumptions, we estimate that total health care spending under the NYHA would be slightly lower compared to the status quo. Under the NYHA, we estimate that total health care spending would be \$309 billion in 2022 and \$461 billion in 2031, which is approximately a 1-percent decrease in 2022 and a 3-percent decrease in 2031 relative to the status quo. From 2022 through 2031, the ten-year impact of the NYHA on total health care expenditures is a net savings of about \$80 billion out of \$3,884 billion, or 2 percent.

Spending for health care services would increase under the NYHA because of increased utilization by the previously uninsured and elimination of cost sharing, as well as reduced provider payment rates and prescription drug prices over time. We estimate increases in spending for medical care of 6 percent (in 2022) to 3 percent (in 2031). We estimate that prescription drug and device spending would increase by about 2 to 3 percent under the NYHA.

The increased spending for health care services would be offset by lower administrative expenditures under the NYHA. The largest offset comes from reduced health plan administrative costs that would decrease by over 40 percent under the NYHA. In addition, we estimate that overall provider administrative costs would decrease by 8 percent (in 2022) to 10 percent (in 2031). The state administrative costs (other than for health plan administration) and employer administrative costs are relatively small portions of overall spending.

Spending for health care services and provider administration directly affect provider revenues, which we show in Table 5.3 by service category. We estimate that provider revenues increase by 2 percent in 2022 and decrease by 1 percent in 2031.

Figure 5.1 shows per capita health care spending for services received by income group under the status quo and the NYHA in 2022. This is the dollar value of the health care services received by individuals in each income group, not the payments made by individuals, which is shown in the next section. Under the NYHA, most income groups see little change in the average spending on health care services received. However, individuals with incomes below 200 percent of FPL would experience modest increases of about \$1,100 to \$1,800 in 2022 per capita spending for services received under the NYHA. This is due to the fact that individuals in these lower income groups are most likely to be uninsured in the status quo and therefore are the most likely to increase their utilization of services with coverage from NYH. Individuals with incomes between 200 and 500 percent of FPL would have increases of about \$70 to \$500 in the per capita spending for services they would receive under the NYHA in 2022.

Table 5.2. Health Care Spending

	Health Care Expenditures, Billions									
	Status Quo			NYHA			Difference Between NYHA and Status Quo (% Difference)			
	2022	2026	2031	2022	2026	2031	2022	2026	2031	
Health care services ^a	255.5	307.8	393.4	267.1	318.4	401.8	11.6 (5%)	10.6 (3%)	8.4 (2%)	
Medical care ^b	163.3	189.5	229.5	173.7	198.6	235.7	10.4 (6%)	9.0 (5%)	6.2 (3%)	
Prescription drugs and devices	48.1	67.9	104.6	49.3	69.5	106.8	1.2 (3%)	1.6 (2%)	2.2 (2%)	
Nondurable medical products	6.0	7.3	9.1	6.0	7.3	9.1	0 (0%)	0 (0%)	0 (0%)	
Long-term care	38.0	43.0	50.1	38.0	43.0	50.1	0 (0%)	0 (0%)	0 (0%)	
Administration	55.7	65.7	81.7	41.8	48.4	58.7	-13.9 (-25%)	-17.3 (-26%)	-23.0 (-28%)	
Health plan administration ^c	28.5	34.3	43.8	16.6	19.7	24.8	-11.8 (-42%)	-14.5 (-42%)	-19.0 (-43%)	
Provider administration ^d	26.4	30.5	36.8	24.4	27.8	32.9	-2.0 (-8%)	-2.7 (-9%)	-3.8 (-10%)	
DTF and DFS administration	0.6	0.7	0.8	0.6	0.6	0.7	-0.1 (-8%)	-0.1 (-8%)	-0.1 (-8%)	
Employer health benefit administration	0.2	0.2	0.3	0.2	0.2	0.2	<-0.1 (-10%)	<-0.1 (-10%)	<-0.1 (-10%)	
Total health care expenditures	311.2	373.5	475.0	308.9	366.8	460.5	-2.3 (-1%)	-6.7 (-2%)	-14.6 (-3%)	

NOTE: Totals may not sum due to rounding.

^a Personal health care, minus provider administration, plus medical structures and equipment.

^b Medical care here includes hospital care, physician and clinical services, other professional services, dental services, and other health and personal care.

^c Health plan administration includes private health plan administration and government administration for health care programs such as Medicaid, Medicare, and NYH.

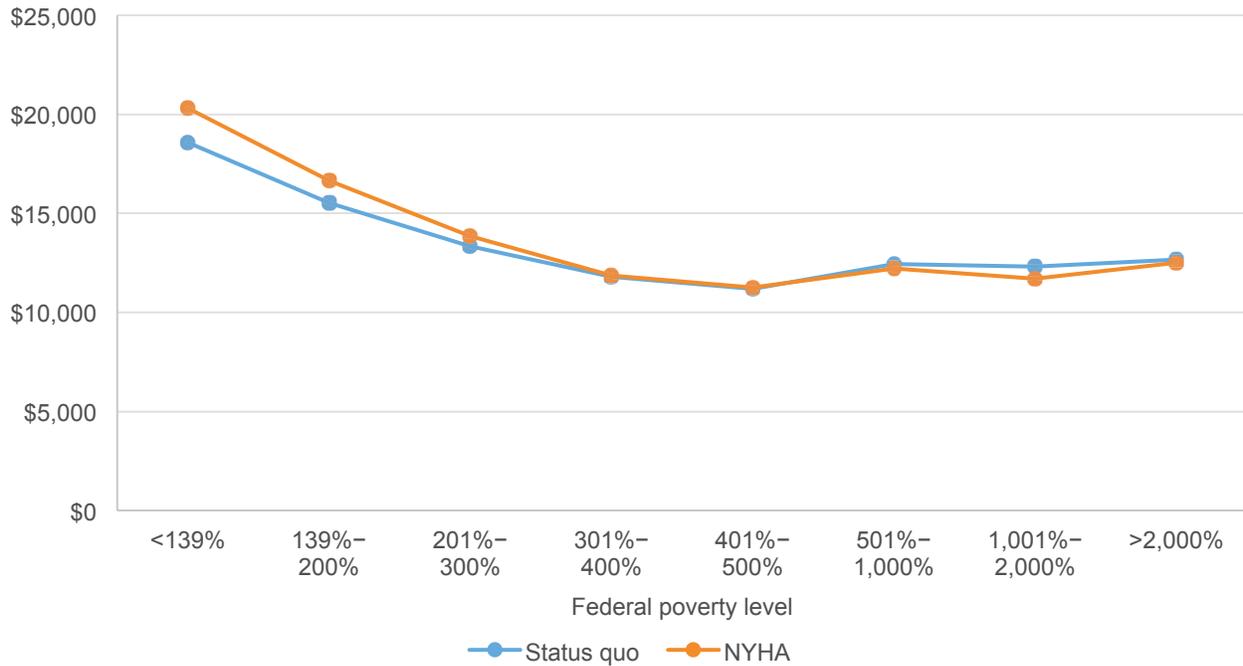
^d Provider administration includes administrative activities associated with the provision of both medical and long-term care services.

Table 5.3. Provider Revenues

	Provider Revenues, Billions									
	Status Quo			NYHA			Difference Between NYHA and Status Quo (% Difference)			
	2022	2026	2031	2022	2026	2031	2022	2026	2031	
Hospital care	109.8	132.9	169.0	112.8	135.0	168.9	3.0 (3%)	2.1 (2%)	-0.1 (<-1%)	
Physician and clinical services	47.7	52.0	58.1	48.7	52.0	56.4	1.0 (2%)	<0.1 (<1%)	-1.6 (-3%)	
Other professional services	7.6	8.3	9.2	8.0	8.6	9.3	0.4 (5%)	0.3 (3%)	0.1 (1%)	
Dental services	9.3	10.2	11.3	9.9	10.5	11.3	0.6 (6%)	0.4 (3%)	<0.1 (<1%)	
Other health and personal care	11.1	12.0	13.2	11.4	12.1	13.1	0.3 (3%)	0.2 (1%)	-0.1 (-1%)	
Home health services	20.8	22.6	24.9	20.8	22.6	24.9	0 (0%)	0 (0%)	0 (0%)	
Nursing home care	21.4	25.1	30.7	21.4	25.1	30.7	0 (0%)	0 (0%)	0 (0%)	
Total provider revenues	227.8	263.1	316.4	233.1	265.9	314.7	5.4 (2%)	2.9 (1%)	-1.7 (-1%)	

NOTES: Provider revenues here include spending on health care services, including medical structures and equipment, and administration. Totals may not sum due to rounding.

Figure 5.1. Per Capita Health Care Spending for Services Received, by Income Group, 2022



NOTES: We estimate that 100 percent of the FPL will be \$13,350 for a single individual and \$27,610 for a family of four in 2022; see Table A.3 for the distribution of the population by income group. For both the status quo and the NYHA scenarios, the x axis shows the income group for individuals in the status quo, without accounting for changes in wages under the NYHA, so that the same group of individuals is compared within each income group.

Although we estimate that households would receive more health care services on average, there would still be unmet patient demand due to nonfinancial factors limiting access to care. We refer to these nonfinancial factors as “congestion” in the health care system (White et al., 2016). Congestion can manifest itself in obvious ways, such as long wait times for appointments or providers not accepting new patients, or more subtly through changes in providers’ recommendations regarding courses of treatment or through constraints on technology and equipment (Aaron and Schwartz, 1984).

Under the NYHA, we estimate that patients’ demand for hospital care would increase by around 10 percent and patients’ demand for physician services would increase by around 15 percent. (The larger demand response for physician services reflects the fact that patients pay a larger share of expenditures for physician services under the status quo.) But we estimate that congestion would increase under the NYHA, and the expansion in the quantity of hospital services and physician services would only be half as large as the increase in patient demand—the gap between patient demand and the quantity of services provided reflects congestion. For two categories of services—prescription drugs and medical devices—we assume that increases in patient demand under the NYHA would be fully met by increased supply. Those categories

are treated differently because, unlike medical services, they are high-margin manufactured products that can be shipped and warehoused.

Health Care Payments

- *Financing would shift from premium payments and out-of-pocket payments under the status quo to NYH tax payments.*
- *Under the NYHA, premiums would be eliminated and out-of-pocket payments by households would fall.*
- *After redirection of existing federal and state health care outlays to NYH, we estimate that one possible set of NYH tax rates could range from about 6 to 20 percent for a graduated payroll tax and 6 to 19 percent for a graduated nonpayroll tax.*
- *We assume that federal health care outlays would be unchanged under the NYHA compared with the status quo, given the required budget neutrality under waivers.*
- *State health care outlays would increase about fivefold under the NYHA.*

Table 5.4 shows total health care payments by payment type and the value of the tax exclusion for ESI and the NYH payroll tax. Contributions by individuals for their health care would shift from premium and out-of-pocket payments under the status quo to primarily tax payments under the NYHA. Consequently, the state would be collecting new tax revenue in the form of the NYH payroll tax (\$84.2 billion in 2022) and the NYH nonpayroll tax (\$54.9 billion in 2022). Overall, we estimate that the tax collections from the NYH payroll and nonpayroll taxes would total \$139.1 billion in 2022 and \$210.1 billion in 2031. Relative to total state tax collections, our estimates mean that total state tax collections would increase from about \$89.3 billion in the status quo¹⁸ to \$228.4 billion in 2022.

The value of the tax exclusion decreases under the NYHA because we assumed only the employer portion of the NYH payroll tax would be excluded from taxes (like the employer portion of federal payroll taxes), while both the employer and employee premium contributions for ESI are generally excluded under the status quo.

Table 5.5 shows outlays by the New York State and federal governments under the status quo and under the NYHA. State outlays for health care would increase about fivefold from \$34.1 billion under the status quo to \$172.5 billion under the NYHA in 2022, as the state undertakes the role of insuring all residents.

¹⁸ Total New York State tax collections were \$71.2 billion in 2017 (DTF, 2017). In the New York FY 2019 Economic and Revenue Outlook, total state taxes are projected to be \$89.3 billion in 2022 (NYS DOB, 2018a).

Table 5.4. Health Care Payments, by Payment Type

	Health Care Payments, Billions					
	Status Quo			NYHA		
	2022	2026	2031	2022	2026	2031
Premium payments	122.9	149.9	194.9	—	—	—
Employer coverage, employee share	17.4	20.8	26.8	—	—	—
Employer premiums contributions (forgone wages) ^a	67.4	80.7	103.8	—	—	—
Individual market coverage	1.9	2.5	3.1	—	—	—
Medicare	8.5	11.2	15.6	—	—	—
Other ^b	27.8	34.7	45.8	—	—	—
Tax payments supporting health care	154.6	183.1	228.5	293.1	348.1	437.9
Federal income, payroll, and other taxes	120.5	144.0	181.7	120.5	144.0	181.7
State income and other state and local taxes	34.1	39.1	46.8	33.4	38.2	46.1
NYH payroll tax, employee share	—	—	—	16.8	20.2	25.9
NYH payroll tax, employer share (forgone wages) ^c	—	—	—	67.4	80.7	103.8
NYH nonpayroll tax	—	—	—	54.9	64.9	80.4
Out-of-pocket payments	33.5	40.4	51.6	15.6	18.6	23.0
Total payments	311.1	373.4	475.0	308.7	366.6	460.9
Tax exclusions for ESI or NYH payroll tax ^d	32.8	39.2	50.2	28.9	34.5	44.4
Federal tax exclusions	27.3	32.7	41.9	24.0	28.8	37.0
State tax exclusions	5.5	6.5	8.4	4.8	5.8	7.4
Total payments less tax exclusions	278.3	334.2	424.7	279.9	332.1	416.4

^a Employer premium contributions for health benefits here include premium contributions for ESI and employer administrative costs.

^b Other premiums include those for Medicare supplemental plans, EP, CHP, and TRICARE.

^c Employer tax payments for health benefits here include the employer share of the NYH payroll tax, employer share of the Medicare payroll tax, and employer administrative costs.

^d Federal and state tax expenditures for exclusion of ESI premiums and the NYH payroll tax from federal income, federal payroll, and state income taxes.

Total federal funding supporting health care in New York State would remain unchanged by design, and these outlays would be redirected from the federal match for Medicaid and CHP, payments for the EP and APTCs, Medicare outlays, and outlays for other federal health care programs to funding for NYH under federal waivers. We assumed the federal budget neutrality requirement for waivers would not take changes in federal tax expenditures due to the NYH payroll tax into consideration, which we estimate would fall by about \$3.3 to \$4.9 billion in 2022 and 2031. Note that this change to federal revenues would be offset by overall federal income and payroll tax payments (for both health and nonhealth programs) from New Yorkers decreasing by \$3.1 billion in 2022 to \$4.9 billion in 2031 (data not shown), due to net changes in wages (higher for lower-income workers and lower for higher-income workers, discussed later in this chapter).

Table 5.5. State and Federal Outlays for Health Care, by Funding Source

	Health Care Payments, Billions					
	Status Quo			NYHA		
	2022	2026	2031	2022	2026	2031
Total state health care outlays	34.1	39.1	46.8	172.5	204.0	255.6
State match for Medicaid, CHP, and DSH	33.4	38.3	45.9	—	—	—
State match for EP	0.1	0.1	0.1	—	—	—
Redirected state funding for NYH ^a	—	—	—	32.8	37.5	44.8
DTF and DFS administration	0.6	0.7	0.8	0.6	0.6	0.7
NYH outlays from NYH payroll tax revenues	—	—	—	84.2	100.8	129.7
NYH outlays from NYH nonpayroll tax revenues	—	—	—	54.9	64.9	80.4
State tax expenditures for ESI or NYH payroll tax ^b	5.5	6.5	8.4	4.8	5.8	7.4
Total federal health care outlays	120.5	144.0	181.7	120.5	144.0	181.7
Federal match for Medicaid, CHP, and DSH	43.2	49.9	60.3	—	—	—
Federal match for EP	3.8	4.6	5.8	—	—	—
Marketplace APTCs	0.6	0.7	1.0	—	—	—
Net Medicare	57.1	70.9	93.2	—	—	—
Federal outlays for other public health programs ^c	15.8	17.9	21.3	2.0	2.3	2.7
Redirected federal funding for NYH ^d	—	—	—	118.5	141.8	179.0
Federal tax expenditures for ESI or NYH payroll tax ^b	27.3	32.7	41.9	24.0	28.8	37.0

^a The redirected state funding for NYH equals state funds for Medicaid, CHP, disproportionate share hospital (DSH), and EP in the status quo minus the net loss of Health Care Reform Act tax revenue (loss of revenue from the covered lives assessment, increase in hospital tax revenue).

^b Federal and state tax expenditures for exclusion of ESI premiums and the employer share of the NYH payroll tax from federal income, federal payroll, and state income taxes.

^c Other public health programs include the Veterans Health Administration and the Indian Health Service.

^d The redirected federal funding for NYH includes federal matching funds for Medicaid, CHP, DSH, and EP and funding for Medicare beneficiaries in New York.

Table 5.6 shows our estimates of one set of payroll tax rates that could fully finance NYH. We estimate that the NYH payroll tax could be set at about 6 percent for the low-income bracket, 12 to 13 percent for the middle bracket, and 18 to 20 percent for the higher-income bracket. Table 5.7 shows our estimates for the NYH nonpayroll tax rates, which we estimate could be set at a similar schedule, with approximately 6 percent for the lower-income bracket, about 12 to 13 percent for the middle bracket, and 18 to 19 percent for the higher-income bracket. These tax rate estimates are the result of our selected tax schedule and would vary under different tax schedules; see Table B.1 for examples of two other tax schedules that could also fully finance NYH.

Table 5.6. New York Health Payroll Tax Rates, by Wage Bracket

2022		2026		2031	
Wages	Marginal Rate	Wages	Marginal Rate	Wages	Marginal Rate
≤\$27,500	6.1%	≤\$30,200	6.3%	≤\$34,000	6.7%
\$27,501–\$141,200	12.2%	\$30,201–\$155,200	12.6%	\$34,001–\$174,800	13.4%
>\$141,200	18.3%	>\$155,200	18.8%	>\$174,800	20.0%

NOTES: We increased the thresholds for the wage brackets over time based on CPI. The thresholds started at \$25,000 (approximately FPL for a family of four) and \$128,400 (the maximum taxable earnings for Social Security) in 2018.

Table 5.7. New York Health Nonpayroll Tax Rates, by Taxable Nonwage Income Bracket

2022		2026		2031	
Taxable Nonwage Income	Marginal Rate	Taxable Nonwage Income	Marginal Rate	Taxable Nonwage Income	Marginal Rate
≤\$27,500	6.2%	≤\$30,200	6.2%	≤\$34,000	6.2%
\$27,501–\$141,200	12.4%	\$30,201–\$155,200	12.4%	\$34,001–\$174,800	12.5%
>\$141,200	18.6%	>\$155,200	18.6%	>\$174,800	18.7%

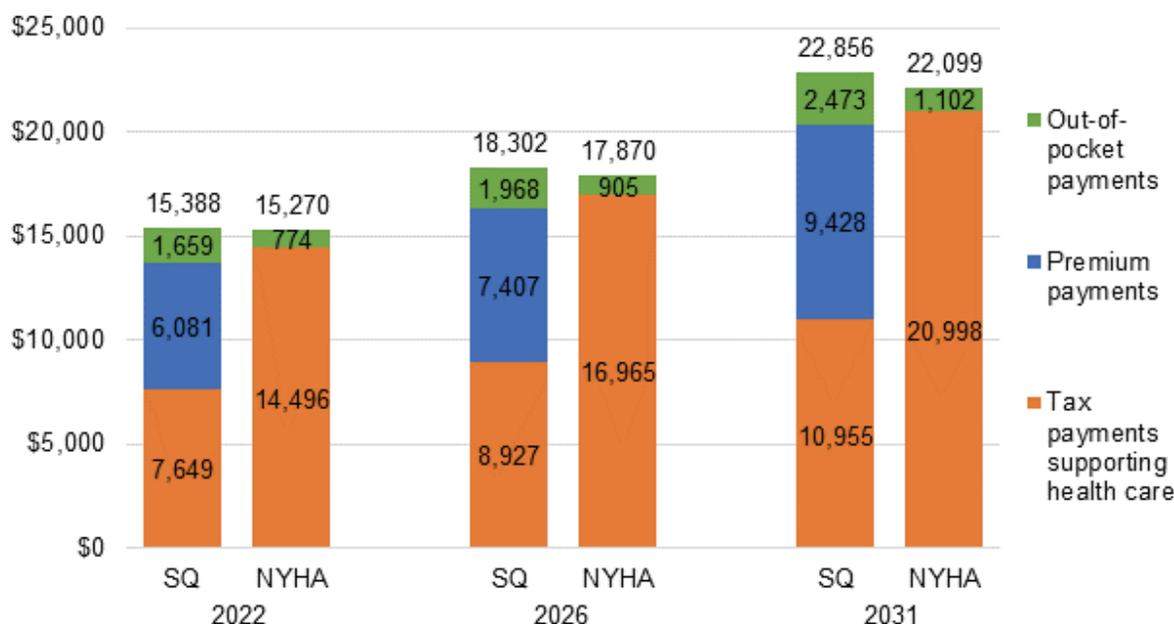
NOTES: We increased the thresholds for the income brackets over time based on CPI. The thresholds started at \$25,000 (approximately the federal poverty level for a family of four) and \$128,400 (the maximum taxable earnings for Social Security) in 2018.

Individual Health Care Payments

- *The NYHA would entail a substantial shift in the financing of health care; the average household with income below 1,000 percent of FPL, or ten times the poverty level (\$133,500 for a single person, \$276,100 for a family of four), in 2022 would pay less, and the average household with income above 1,000 percent FPL would pay more.*
- *For New York households with income below 1,000 percent of FPL, health care payments per person would fall by an average of \$1,300 to \$4,200 (3 to 17 percent of household compensation) in 2022. Although there is an average decrease in payments, there is also heterogeneity across households; some would likely pay more while others would pay less.*
- *For households with income between 1,000 and 2,000 percent of FPL (i.e., between 10 and 20 times the poverty level), health care payments per person would increase by an average of \$3,900 (2 percent of household compensation) in 2022. For the average of all households above 2,000 percent of FPL, health care payments per person would increase by \$76,600 (11 percent of household compensation) in 2022.*

Figure 5.2 shows per capita payments for health care under the status quo and NYHA. We estimate that per capita health care payments are similar under the status quo and the NYHA in 2022 but are reduced further under the NYHA in 2026 and 2031. Under the NYHA, tax

Figure 5.2. Per Capita Health Care Payments, 2022



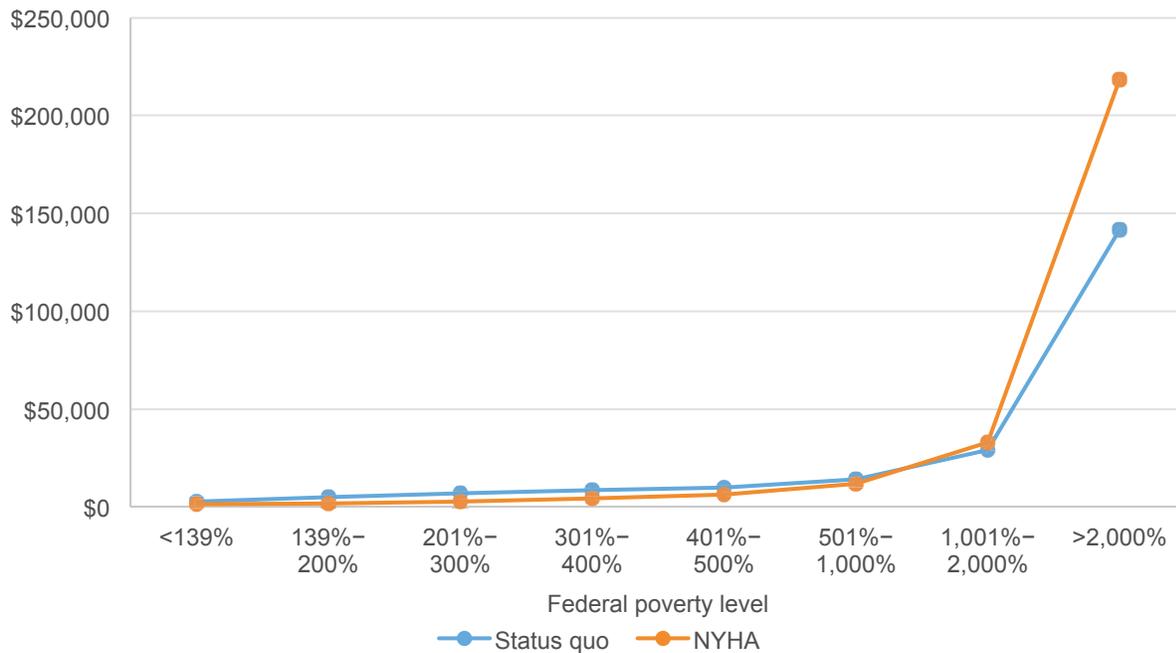
NOTES: Tax payments supporting health care programs are income, payroll, and other taxes levied by federal, state, and local governments and used to fund health care, including the NYH payroll and nonpayroll tax. Premium payments include premiums paid by individuals and employers (forgone wages) for ESI, individual market plans, Medicare, Medicare supplemental plans, EP, CHP, and TRICARE. Out-of-pocket payments are deductibles, coinsurance, and copayments at the point of service under the status quo, and payments for services and products not covered by health plans under the status quo and the NYHA. The value of the tax exclusions for ESI and the NYH payroll tax are not shown in this figure.

payments take the place of premiums and the majority of out-of-pocket payments under the status quo.

The differences in per capita health care payments under the NYHA vary by income. Figure 5.3 shows per capita payments for health care by income group under the status quo and NYHA. We find that payments for health care would be more progressive under the NYHA than under the status quo. On average, households with income under 1,000 percent of FPL would see decreases in their payments for health care. (We estimate that 1,000 percent of the FPL will be \$133,500 for a single individual and \$276,100 for a family of four in 2022.) Per capita payments by families making under 139 percent of FPL would decrease by an average of about 49 percent, from about \$2,700 under the status quo to about \$1,300 under the NYHA. On average, per capita payments by families making 401 to 500 percent of FPL would decrease from about \$10,000 under the status quo to about \$6,400 under the NYHA. Although average payments decrease, there is heterogeneity across households—some low-income families, such as those who did not previously pay for ESI and would face new payroll taxes under NYH, might pay more. Appendix B describes this issue in further detail (see Figure B.4).

Average per capita payments by households with income between 1,000 and 2,000 percent of FPL would increase by 13 percent, from about \$29,100 under the status quo to about \$33,100

Figure 5.3. Per Capita Health Care Payments, by Income Group, 2022



NOTES: Payments include premiums paid by individuals, out-of-pocket payments, tax payments supporting health care programs, and premiums paid by employers (forgone wages), minus the value of the tax exclusion for ESI and the NYH payroll tax. We summed payments for all individuals within each income group and divided by the total number of individuals in the income group. For both the status quo and the NYHA scenarios, the x axis shows the income group for individuals in the status quo, without accounting for changes in wages under the NYHA, so that the same group of individuals are compared within each income group. We estimate that 100 percent of FPL will be \$13,350 for a single individual and \$27,610 for a family of four in 2022. We estimate that household income for the 2,000-percent FPL group begins at \$267,000 for a single individual and \$552,200 for a family of four, and average household income in this group will be about \$1,654,700 in 2022.

under the NYHA. Average per capita payments by households with income over 2,000 percent of FPL would increase by 54 percent, from about \$141,700 under the status quo to about \$218,300 under the NYHA.¹⁹ For the income group above 2,000 percent of FPL, note that we

¹⁹ The grouping of households by FPL accounts for household income and size. Considering household health care payments among groups by household compensation (income plus employer contributions for health care) without accounting for household size results in similar estimates (see Figure B.2). The top fifth percentile of individuals by household compensation would pay an average of about \$99,200 per person under the status quo and \$149,400 per person under the NYHA—an average increase of \$50,200 per person in 2022. Among the top fifth percentile, average household compensation is approximately \$1,255,700, or \$422,300 per person; thus, health care payments represent 23 percent of compensation per person under the status quo and 35 percent under the NYHA. We estimate that household compensation at the ninetieth percentile will be \$291,000 in 2022, and the ninety-fifth percentile will be \$406,400. For those in the ninetieth to ninety-fifth percentile of household compensation, average payments would increase by about \$1,700 per person. The average household compensation for this group is \$337,800 in 2022, which means average health care payments increase from about 23 percent of compensation per person to 24 percent. In contrast, average health care payments by those with household compensation below the ninetieth percentile (average household compensation \$105,300) would decrease by about \$2,800 per person (from about 23 percent of compensation per person to 16 percent). For each of these income groups, the average change masks heterogeneity within this group, as some people pay more and others pay less (see Figure B.4 for details).

report the average per capita payments across the entire group, and the average is driven by very high-income individuals.²⁰ Thus, per capita payments by households just over 2,000 percent FPL would be closer to payments by families between 1,001 and 2,000 percent of FPL than to the average per capita payment level for the over 2,000 percent of FPL group. The large average increase in payments for this highest-income group results from their high payroll and nonpayroll income, which are the tax bases for the NYH taxes.²¹

Figure 5.4 shows average payments for health care as a share of household compensation (income plus health benefits paid by employers) under the status quo and under the NYHA. Under the status quo, we find that health care payments are somewhat regressive; families with incomes below 139 percent of FPL pay 34 percent of household compensation on health care on average, while families with incomes above 2,000 percent of FPL pay 24 percent of compensation toward health care.²² We find that health care payments become more progressive under the NYHA, with the lowest-income individuals contributing less toward their health care as a share of compensation (17 percent), and highest-income individuals contributing the most (36 percent).

Employer Health Care Payments

- *Overall, employer payments for health care benefits are unchanged. This is by design, given our assumption that the NYHA payroll tax replaces spending on ESI. But the average change masks variation across employers.*
- *For employers offering coverage under the status quo, contributions to employee health benefits would decrease on average under the NYHA. The largest percentage decreases would be for firms with fewer than 25 employees.*
- *For employers not offering coverage under the status quo, contributions to employee health benefits would increase due to the mandatory NYH payroll tax.*

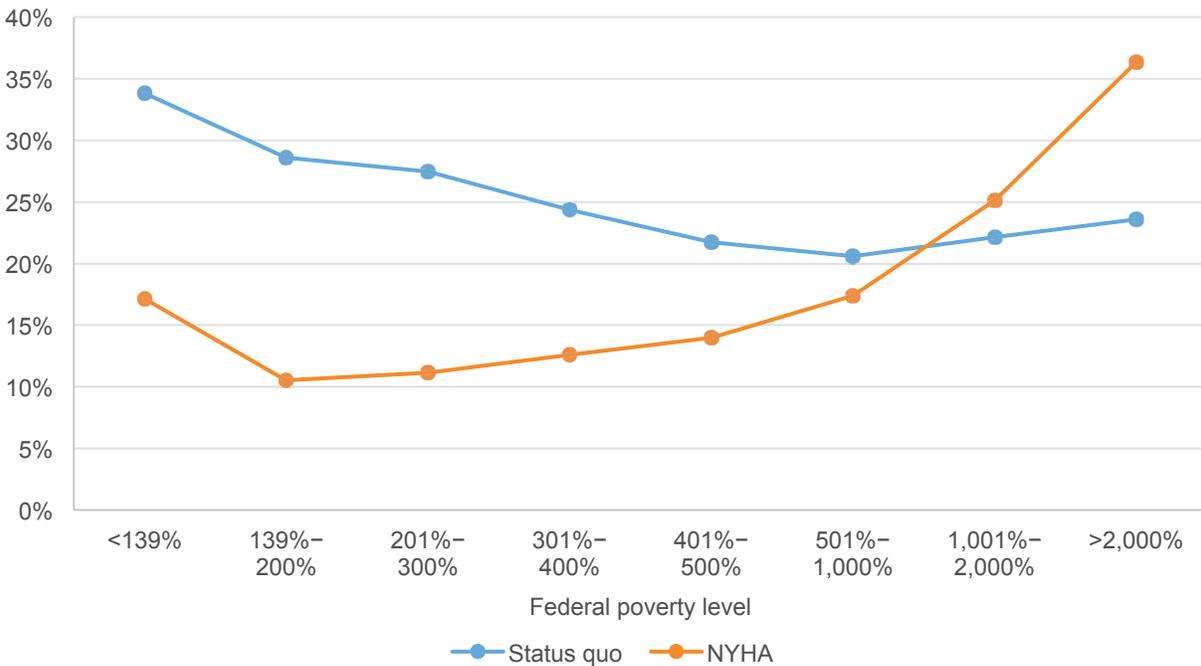
Although the health care payments made by employers are included in our analysis of individual health care payments, in the form of forgone wages, we also show estimated effects of the NYHA from the employer perspective. Table 5.8 shows the total health care payments by

²⁰ We estimate that household income for the 2,000-percent FPL group begins at \$267,000 for a single individual and \$552,200 for a family of four, and average household income in this group will be about \$1,654,700 in 2022.

²¹ Income is disproportionately concentrated in the top 1 percent of tax filers. In 2015, total income from New York tax filers with adjusted gross income over \$1 million was 25 percent of total income from all New York filers, while the share of filers with adjusted gross income over \$1 million was 1 percent of all filers (IRS, 2015). Thus, the highest-income groups pay more under the NYHA, which levies a payroll tax on wages and a nonpayroll tax on nonwage income.

²² One of the drivers of the high health care payments as a share of compensation under the status quo is long-term care services. See Appendix Figure B.1 for the per capita payments among individuals under age 65.

Figure 5.4. Average Health Care Payments as a Share of Compensation, by Income Group, 2022



NOTES: Payments include premiums paid by individuals, out-of-pocket payments, tax payments supporting health care programs, and premiums paid by employers (forgone wages), minus the value of the tax exclusion for ESI and the NYH payroll tax. The denominator reflects compensation consisting of household income and employer contributions to health benefits (ESI or the NYH payroll tax). We summed payments for all individuals in each income group and divided by the sum of compensation in each income group. For both the status quo and the NYHA scenarios, the x axis shows the income group for individuals in the status quo, without accounting for changes in wages under the NYHA, so that the same group of individuals are compared within each income group. We estimate that 100 percent of FPL will be \$13,350 for a single individual and \$27,610 for a family of four in 2022. We estimate that household income for the 2,000-percent FPL group begins at \$267,000 for a single individual and \$552,200 for a family of four, and average household income in this group will be about \$1,654,700 in 2022.

Table 5.8. Employer Health Care Payments

	Health Care Payments, Billions					
	Status Quo			NYHA		
	2022	2026	2031	2022	2026	2031
Total payments by employers	77.7	92.4	117.5	77.7	92.4	117.5
Premium payments	67.4	80.7	103.8	—	—	—
NYH payroll tax payments	—	—	—	67.4	80.7	103.8
Medicare payroll tax	10.1	11.5	13.5	10.1	11.5	13.5
Employer health benefits administration	0.2	0.2	0.3	0.2	0.2	0.2

employers, which shift from premium contributions for ESI to the employer share of the NYH payroll tax payments. We set the NYH payroll tax rates such that aggregate employer payments equal payments in the status quo. We assumed minor changes in employer administrative costs for managing health benefits.

Table 5.9 shows employer contributions to premiums and payroll taxes (for Medicare and NYH) under the status quo and under the NYHA. We find firms that offer health insurance to their employees under the status quo would contribute less—on average—toward health care under the NYHA relative to their status quo contributions. Of firms that offer in the status quo, small firms would pay about 16 to 19 percent less, medium firms would pay 6 to 10 percent less, and large firms would pay 3 percent less. Under the status quo, nonoffering firms only contribute to health care through Medicare payroll tax payments. These employers would spend an additional \$1,200 to \$1,800 more per employee under the NYHA relative to the status quo in 2022.

Table 5.9. Employer Contributions to Premiums and Payroll Taxes per Employee, by Offer Status and Firm Size

	Average Employer Payments per Employee								
	Status Quo			NYHA			Difference (% Difference)		
	2022	2026	2031	2022	2026	2031	2022	2026	2031
Employers offering insurance in the status quo									
<25 employees	4,900	5,800	7,300	4,100	4,800	5,900	-800 (-16)	-1,000 (-17)	-1,400 (-19)
25–99 employees	4,700	5,600	7,000	4,400	5,100	6,300	-300 (-6)	-500 (-9)	-700 (-10)
100+ employees	6,300	7,400	9,200	6,100	7,200	8,900	-200 (-3)	-200 (-3)	-300 (-3)
Employers not offering insurance in the status quo									
<25 employees	400	400	500	1,600	1,900	2,400	1,200 (300)	1,500 (375)	1,900 (380)
25–99 employees	500	600	700	2,300	2,700	3,500	1,800 (360)	2,100 (350)	2,800 (400)
100+ employees	400	500	600	2,000	2,300	3,000	1,600 (400)	1,800 (360)	2,400 (400)

NOTES: Employers contribute to health care through premium contributions for ESI, the employer share of the Medicare payroll tax, and the employer share of the NYH payroll tax. The reduction in payments among offering employers is larger for smaller firms with a lower wage base, which means the NYH payroll tax payment amounts would be lower. According to 2016 data from the MEPS, the number of establishments in New York State by firm size was as follows: <25 employees: 378,000; 25–99 employees: 34,000; 100+ employees: 77,000. Percentages of establishments offering health insurance to employees by firm size were as follows: 25 employees: 30.0 percent; 25–99 employees: 82.9 percent; 100+ employees: 97.8 percent (AHRQ, 2016b). MEPS data are collected at the establishment level, which is defined as a single physical location or workplace. A single firm can be composed of one or more establishments. Data from the 2014 Statistics of U.S. Businesses have the following number of firms by firm size for New York State: <20 employees: 412,000; 20–99 employees: 35,000; 100+ employees: 12,000 (United States Census Bureau, 2016b).

Employment and Wages

- *The NYHA could lead to an estimated 2-percent increase in employment compared with the status quo.*
- *On average, wages would increase for workers in households with income below 1,000 percent of FPL. This effect would be concentrated among workers in firms that offer health insurance in the status quo.*
- *Workers with incomes above 1,000 percent of FPL may receive a wage decrease if employers adjust wages in response to NYH payroll contributions.*

Table 5.10 shows the effect of the NYHA on employment and wages. We estimate a small increase in overall employment by nearly 2 percent relative to the status quo. The estimated change in employment accounts for the net effect of changes in health care provider revenues (with more utilization but lower payment rates), decreases in revenues in the health insurance sector, changes in sectors that provide inputs to the health care and insurance sectors, and net changes in disposable income resulting from changes in health care payments and wages. As the NYHA increases the progressivity of health care payments across income groups, disposable income is redistributed from higher- to lower-income households. Generally, lower-income households spend a larger share of additional income, which translates to increased consumption and, in turn, increased employment. However, these estimates do not account for many other factors that could affect employment under the NYHA. For example, we assumed that workers' desire to work is constant (no changes in labor supply), businesses do not change the quantity of labor relative to other inputs (no changes in production functions), and there is no migration of workers and businesses (discussed in a later section).

Table 5.10. Effects on Employment and Wages

	Status Quo			NYHA			% Difference		
	2022	2026	2031	2022	2026	2031	2022	2026	2031
Number employed, millions	8.6	8.8	8.9	8.8	8.9	9.1	1.9	1.7	1.7
Total taxable wages and salaries, billions	719.7	827.5	988.9	716.4	823.6	983.8	-0.5	-0.5	-0.5
Average wages and salaries per worker	83,307	94,498	110,952	82,930	94,054	110,382	-0.5	-0.5	-0.5

NOTE: We counted the number employed as the number of individuals with wages and salaries above \$10,000, which is approximately the federal income tax filing threshold for a single individual.

Table 5.11 shows the change in employment overall and by profession in the health care, insurance, and other sectors. The majority of the employment effect occurs outside the health care sector, due to indirect and induced effects from increased health care revenues and increases in disposable income among most households. We estimate that health-related professions would experience an increase in the number employed in 2022 as health care utilization increases, but would decrease over time due to reductions in provider payment rates relative to the status quo. In all years, the number employed in insurance-related professions decreases, as the NYH administrative rates are lower than commercial health plan administrative rates in the status quo, and the overall amount of administrative services is lower under the NYHA.

We estimate a small decrease in total wages and salaries of less than 1 percent (Table 5.10), which reflects the net impact of eliminating employer spending on health insurance and increasing payroll taxes. Although we set the NYH payroll tax rates to maintain the same

Table 5.11. Change in Employment, by Profession Category

	Difference Between the NYHA and the Status quo		
	2022	2026	2031
Total number employed	155,700	143,100	139,000
Health-related professions	59,600	19,800	-43,200
Insurance-related professions (carriers and brokers)	-46,700	-49,400	-54,600
All other professions	142,900	172,700	236,800

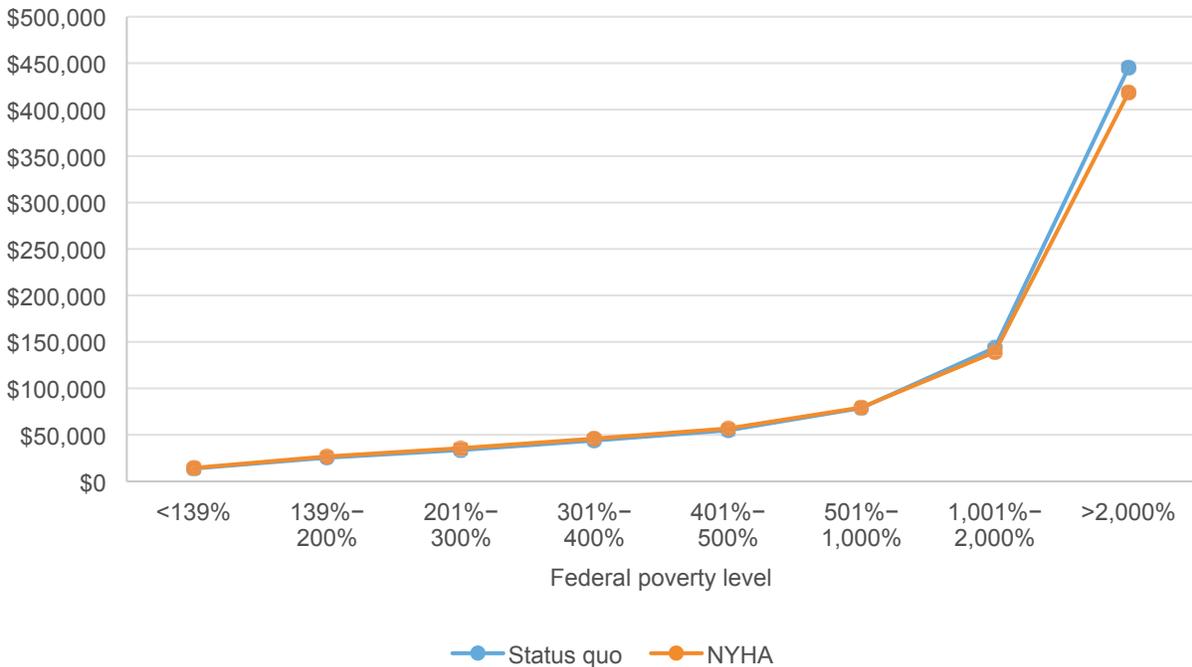
SOURCE: Authors' analysis using the IMPLAN model.

NOTE: Totals may not sum due to rounding.

aggregate employer contributions as the status quo, a given employer may have more or fewer payments depending on the wage mix of their workers. In addition, the distribution of employer payments for the NYH payroll tax across workers changes.

In Figure 5.5, we show the average wages per worker by income group in 2022. For workers with household income less than 1,000 percent of FPL, average wages increase by \$500 to \$2,200 in 2022. For workers between 1,000 and 2,000 percent of FPL, average wages decrease

Figure 5.5. Average Wages and Salaries per Worker, by Income Group, 2022



NOTES: For both the status quo and the NYHA scenarios, the x axis shows the income group for individuals in the status quo, without accounting for changes in wages under the NYHA, so that the same group of individuals are compared within each income group. We estimate that 100 percent of FPL will be \$13,350 for a single individual and \$27,610 for a family of four in 2022. We estimate that household income for the 2,000 percent FPL group begins at \$267,000 for a single individual and \$552,200 for a family of four, and average income across this group will be about \$600,000 in 2022.

by about \$5,400 in 2022. For workers above 2,000 percent of FPL, average wages decrease by about \$26,100 in 2022; note that this reported change reflects the average wage across this entire income group, which includes single individuals with income just over \$267,000 and very high earners. Actual wage adjustments may be more graduated, as economic theory suggests that substitution between wages and health benefits would be proportional to income (Goldstein and Pauly, 1976). Further, any given worker may experience a wage change that deviates from the average. For example, workers in businesses that did not previously offer health insurance may experience wage decreases (or slower wage growth over time), even if their income is under 1,000 percent of FPL.

Long-Term Care

- *Adding coverage of long-term care benefits to NYH would increase program costs by approximately \$18 billion to \$22 billion each year between 2022 and 2031.*
- *The NYH nonpayroll tax rates would increase from 6 to 19 percent without long-term care coverage to about 8 to 25 percent with long-term care coverage.*

In a scenario in which NYH covers long-term care benefits, we estimate increases in long-term care utilization and expenditures, and increases in the NYH taxes required to finance the program. Table 5.12 shows our estimates of expenditure and the NYH nonpayroll tax rates without and with long-term care coverage. With long-term care coverage, we estimate that expenditures would increase by 39 to 42 percent. One possible way to meet this additional financing need would be to increase the NYH nonpayroll tax rates (and hold the NYH payroll tax rates constant so that employers are not paying more). If the same relative tax schedule between

Table 5.12. Effect of New York Health Covering Long-Term Care Benefits on Expenditures and Tax Rates

	NYHA Without Long-Term Care Benefits ^a			NYHA with Long-Term Care Benefits			Difference (% Difference)		
	2022	2026	2031	2022	2026	2031	2022	2026	2031
Long-term care expenditures, billions									
	42.2	47.8	55.7	60.1	67.2	77.2	17.8 (42%)	19.4 (41%)	21.5 (39%)
NYH nonpayroll tax rates									
Bracket 1	6.2%	6.2%	6.2%	8.2%	8.0%	7.9%	2.0%	1.9%	1.7%
Bracket 2	12.4%	12.4%	12.5%	16.4%	16.1%	15.8%	4.0%	3.7%	3.3%
Bracket 3	18.6%	18.6%	18.7%	24.6%	24.1%	23.7%	6.0%	5.6%	5.0%

NOTE: The taxable nonwage income brackets are ≤\$27,500, \$27,501–\$141,200, and >\$141,200 in 2022; ≤\$30,200, \$30,201–\$155,200, and >\$155,200 in 2026; and ≤\$34,000, \$34,001–\$174,800, and >\$174,800 in 2031.

^a Although the NYH would not cover LTC benefits for all residents initially, we assumed NYH enrollees eligible for Medicaid and Medicare would still receive nursing home and home health care as covered by Medicaid and Medicare in the status quo.

brackets is used, this would require an increase of the NYH nonpayroll tax rates from approximately 6 to 19 percent to 8 to 25 percent in 2022.

Possible Tax Avoidance and Migration Effects

- *High-income residents may attempt to avoid tax increases by changing investment decisions or by moving out of state. Because new taxes to support NYH fall disproportionately on a small share of the population, even a small amount of tax avoidance or migration could substantially reduce the funding base, requiring higher tax rates to fully finance NYH.*
- *Businesses may similarly change their decisions in response to the NYH program—for example, by moving out of state or changing their production approaches to reduce their payroll tax obligations. Such responses might be limited to businesses that would experience increases in costs due to the NYHA, such as businesses that do not currently offer health insurance.*
- *Based on past Medicaid expansions, there is little evidence to suggest that families would move to New York to take advantage of universal health care.*

We did not model the possible tax avoidance and migration effects of the NYHA. However, the literature suggests that individuals and businesses may change their behavior to avoid taxes—e.g., through changes in investment decisions or moving out of state. Providers may also relocate or change their business practices in response to changes in payment rates. Finally, some individuals may move to New York State to take advantage of free health care. We discuss these possible effects in the subsequent sections.

Tax Avoidance at the Individual Level

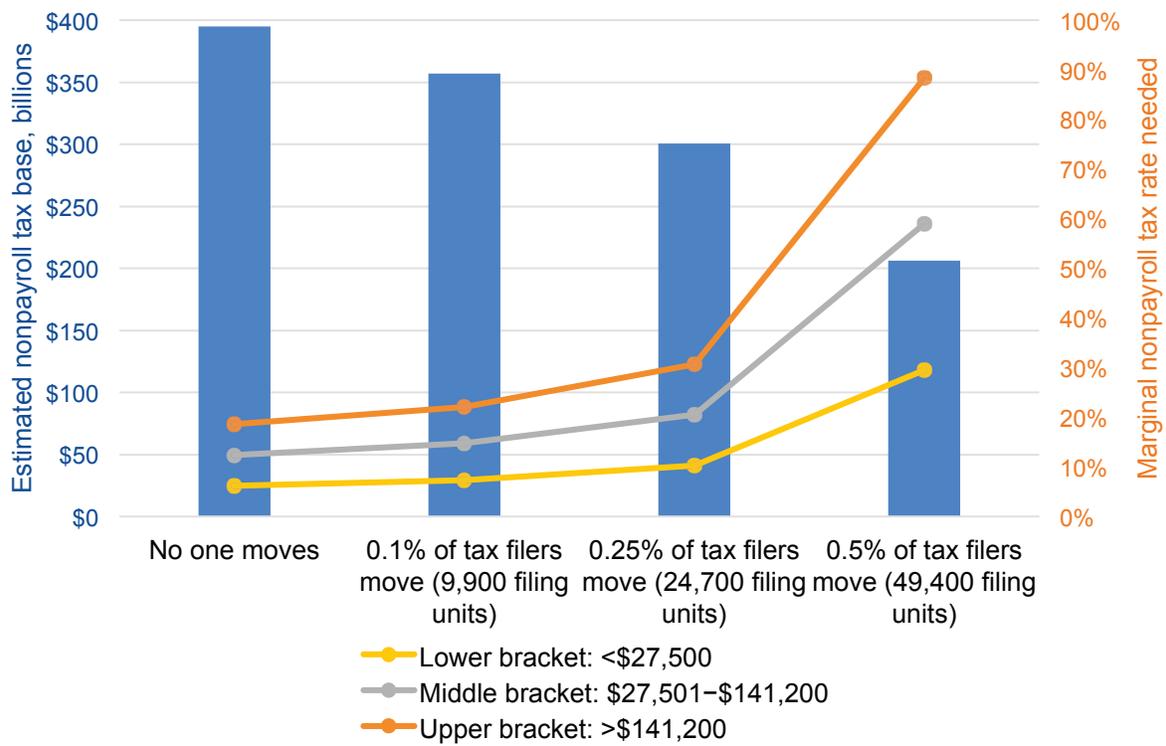
People seek to avoid taxes when possible, and there is compelling evidence to suggest that increased marginal tax rates are associated with reductions in the size of the tax base (Saez, Slemrod, and Giertz, 2012). The tax avoidance effect is substantially more pronounced for high-income filers than it is for lower-income filers, and it is sensitive to the presence of “loopholes” and opportunities for arbitrage (Saez, 2004; Piketty, Saez, and Stantcheva, 2014). For example, Feenberg and Poterba (1993) found that the composition of income in high-income households is sensitive to tax rates, with more income historically reported as wages and salaries relative to capital gains during periods in which the marginal income tax rate has been low. People may also delay capital gains tax realizations in response to changes in the capital gains tax rate or—if tax changes are announced in advance—exercise options before the tax takes effect (Burman and Randolph, 1994; Goolsbee, 2000). Goolsbee (2000) estimates that the tax avoidance behavior of a small subset of the richest taxpayers can have an outsize effect on total taxes collected.

The NYHA would be partially funded by taxes on both payroll and nonpayroll income, including taxes on interest, dividends, and capital gains. Because the magnitude of tax avoidance effects is sensitive to the presence of exceptions and loopholes, New York could maximize revenues by allowing few if any deductions or exemptions from these taxes. However, even with an airtight tax code, it would be possible for individuals to avoid taxes by moving out of state. While the empirical literature on the effects of taxes on migration decisions is slim, several studies have documented an association between states' tax rates and individuals' location decisions. Bakija and Slemrod (2004) found that state estate and inheritance (EI) taxes influenced migration of people over the age of 65, with a 1-percent increase in EI taxes leading to a decline of 1.4 to 2.7 percent in the number of estate tax returns filed in the state. These findings were particularly strong for estates of \$5 million or more, for which tax filings declined by nearly 4 percent in response to a 1-percent increase in EI taxes. Two U.S.-based studies have found evidence that higher state marginal income tax rates may lead to outmigration (Coomes and Hoyt, 2008; Cohen, Lau, and Steindel, 2011), although the effects are not strong, and a third study found no discernable impact for the top 1 percent of earners (Young and Varner, 2011). Other studies have documented that the location decisions of highly specialized labor categories, including soccer players (Kleven, Landais, and Saez, 2013) and patent-holding scientists (Moretti and Wilson, 2017), may be particularly sensitive to tax rates.

Because these studies focus predominantly on income and estate taxes, we cannot use them to draw specific conclusions about the effects of the NYHA's proposed taxes on all nonpayroll income. However, the findings suggest reasons to be concerned about out-migration, particularly among wealthy individuals. Moreover, New York's situation may be relatively unique, potentially exacerbating the likelihood of migration effects. First, New York State has a large population nexus in the New York City region, which borders New Jersey and Connecticut, and a well-developed infrastructure to support commuters. As a result, it may be easier for people to relocate out of the state. Second, the tax rates on nonpayroll income that would be required to fund NYH are high relative to such taxes in other states, and the burden would predominantly fall on a small, wealthy subset of the population. Federal documentation from IRS Statistics of Income tax stats shows that, in 2015, only about one-third of New York tax filers paid taxes on interest income, and only about 20 percent of New York filers paid taxes on ordinary dividends or capital gains (IRS, 2015). Further, 50 percent of all tax revenue from nonwage sources came from less than 1 percent of New York filers with incomes above \$1 million. The latter statistic suggests that even a small degree of out-migration could substantially erode the nonpayroll tax base, particularly if migration were concentrated among the wealthiest filers.

In Figure 5.6, we show how the size of the nonpayroll tax base would change if a small share of the highest-income filers moved out of state or found another way to fully avoid the nonpayroll tax. The lines overlaying the graph show how the marginal nonpayroll tax rate could be adjusted to compensate for the loss of revenue, assuming the same relative tax schedule

Figure 5.6. Effect of Migration Scenarios on the New York Health Nonpayroll Tax Base and Tax Rates, 2022



NOTES: The number of filing units is based on data from the 2015 IRS Statistics of Income Tax Statistics, projected to 2022. For these calculations, we assumed all movers are in the upper bracket (taxable nonpayroll income >\$141,200 in 2022). We assumed no change in the relative tax rate schedule between the three brackets, and no change in NYH payroll tax revenue for these illustrative migration examples.

between brackets. The graphic illustrates that a migration or tax avoidance response from less than 1 percent of filers could dramatically change the tax rate needed to fund the single-payer plan if these filers were high income. For example, if 0.5 percent of filers left the state and if these filers were in the top income bracket, the erosion of the NYH nonpayroll tax base by \$189 billion would lead to a loss of \$33.5 billion in revenue for the state. If the nonpayroll tax rate schedule were adjusted to meet the financing gap (assuming the same relative schedule between the brackets and assuming no change in NYH payroll tax revenues), the marginal tax rates would need to increase from 6.2, 12.4, and 18.6 percent to about 29.5, 58.9, and 88.4 percent for the three brackets. If policymakers sought to reduce the risk of migration of the highest-income filers, one option would be to cap the tax contributions like the maximum taxable earnings for the Social Security payroll tax; however, the trade-off is that any reduction of tax collections from the highest-income filers would require higher taxes on lower- and middle-income filers.

Tax Avoidance on the Part of Businesses

The literature generally supports the possibility that firms' locational decisions could be affected by policies such as taxes. For example, using census data from U.S. counties, Serrato and Zidar (2016) found that a 1-percent cut in taxes on local businesses increased the number of new local establishments by 3 to 4 percent over ten years. Lawless et al. (2018) analyzed the effects of corporate tax rates on the location decisions of multinational corporations and found that a 1-percent increase in the corporate tax rate would reduce the probability that a firm would locate in a given country by 0.68 percent. The NYHA would impose a mandatory payroll tax on businesses to cover the cost of the plan, which we estimate to be approximately 6 to 20 percent on a graduated scale. While this payroll tax rate is calculated, on average, to replace firms' health insurance spending, firms that had not previously offered coverage and those that had previously offered less-generous plans would experience increases in payments. While some of these increases might be passed on to workers in the form of lower wages, businesses might face short-run losses if they were unable to reduce wages immediately (e.g., due to difficulty renegotiating wage contracts) and could face long-run losses if the minimum wage inhibited them from fully passing the cost of the payroll tax on to their workforce. Firms that employ out-of-state workers could also experience net increases in spending, because they would likely need to continue offering coverage to attract and retain these out-of-state employees. While they would receive a credit to offset the costs of these workers, there could be administrative costs associated with setting up a plan for a subset of workers, and net costs to the firm could increase if some New York workers opted to enroll in the firm's plan.

Businesses that are adversely affected by the payroll taxes might also respond by changing their production approaches—for example, by substituting high-skilled for low-skilled workers, or increasing reliance on automation (Hammermesh, 2014). Again, these responses may be concentrated among firms with low-skilled workers that do not currently offer health insurance, or that have relatively low health insurance costs under current policy.

Additionally, the NYHA would shift workers' health care spending from premium contributions, which are tax exempt for most workers, to employee payroll taxes, which are not tax exempt. This differential tax treatment could put employers in New York at a competitive disadvantage relative to counterparts in other states. Because of the proximity to New Jersey and Connecticut, as well as infrastructure such as mass transit and technologies that enable telecommuting, some employers may be able to move across state lines to avoid New York's payroll taxes without suffering major disruptions in business practices.

Location of Health Care Providers

To the extent that the NYHA would result in lower payments, health care providers might relocate. Brown et al. (2006) found that physicians migrate from areas with higher health maintenance organization (HMO) penetration to areas with lower HMO penetration, a result that

could be driven by lower payments in HMOs compared to non-HMOs. Other studies have found that specialists may be less likely to locate in areas with high HMO penetration (Polsky et al., 2000; Escarce et al., 2000). A large body of literature documents that physicians are less likely to accept new Medicaid patients than they are to accept new patients with private insurance, a result that is attributed to payment differences (Decker, 2013; Hamel, 2015). However, it is not necessarily the case that the NYHA would lower payment for all providers—those who predominantly treat Medicaid or uninsured patients may experience increases in payment. Further, reductions in provider billing expenses might partially or fully offset any changes in revenue driven by reduced payment rates. While we do not directly model provider migration, our analysis takes into account the possibility that providers might change their supply of services in response to changes in payment rates.

Individuals Migrating to Gain Access to Care

Access to free care could induce some people—particularly uninsured individuals and those with significant health needs—to move to New York. However, there is slim evidence to suggest that such in-migration would be common. Goodman (2016) found no evidence that states that expanded their Medicaid programs in 2014 had higher rates of in-migration than states that did not expand. Similarly, Schwartz and Sommers (2014) found no evidence that state Medicaid expansions that occurred between 1998 and 2012 influenced migration patterns among low-income adults. These studies have focused specifically on Medicaid expansions, and may not generalize to a larger health care expansion such as the NYHA, which could be attractive to a broader range of individuals. For example, in the alternative scenario in which long-term care is provided as part of the NYH plan, seniors might move to New York to get free long-term care without spending down their assets.

6. Impact of Alternative Assumptions

We examined the sensitivity of our base case results to different modeling assumptions by estimating spending under the NYHA in alternative scenarios. These scenarios are divided into three categories and are shown in Table 6.1. In the first category, we considered alternative assumptions about the implementation of the NYHA. These scenarios capture the uncertainty in how the implementation of the NYHA would impact provider payment rates, administrative costs, and drug and device prices. The second category of scenarios considers alternative specifications of the NYHA, including coverage of long-term care benefits and alternate demand responses, as well as modest cost sharing. In the third set of alternative scenarios, we examined how providers' behavioral responses to changes in payment rates and patients' demand for services impact our cost estimates.

Alternative Assumptions Related to Implementation of New York Health

Provider Payment Rates

Provider payment would depend on negotiations between NYH and providers, and the extent to which NYH is willing and able to aggressively lower rates or set rates. In scenario 1a, we assumed both the payment level and the growth rate would be relatively high, reflecting collective negotiations favoring providers' position. In scenario 1b, we assumed payment levels and growth rate are relatively low, reflecting negotiations favoring NYH's position or NYH choosing to set rates at a low level.

Health Plan Administrative Costs

Administrative rates would vary depending on factors such as the extent to which NYH involves care coordinators, contracts nonprofit organizations to provide consumer and provider assistance, and establishes alternative payment arrangements. In scenario 2a, we assumed the NYH plan's administrative rate would be similar to the national average Medicaid rate. In scenario 2b, we assumed the NYH plan's administrative rate would be similar to the Medicare governmental administrative rate.

Drug and Device Costs

Drug and device prices would depend on negotiations between NYH and drug manufacturers. In the higher drug and device price scenario (scenario 3a), we assumed that negotiated prices would be similar to average prices across all payers in the status quo, but the overall average drug payments across all products would increase due to reduced generic use when consumers

do not have cost sharing. We assumed spending will increase by 2.5 percent due to substitution of brand-name drugs for generic drugs, based on estimates of generic spending and dispensing rates in Medicare Part D. Compared to non-LIS enrollees in Medicare Part D, LIS enrollees had lower cost sharing (\$68 versus \$440 for the majority of enrollees) and a lower generic dispensing rate (81 percent versus 85 percent) in 2013 (MedPAC, 2016). Nationally, per capita out-of-pocket spending for prescription drugs was \$138 in 2013. With zero cost sharing in NYH, we assumed the market share of generic spending would go from approximately 80 percent (Blue Cross Blue Shield, 2017) to 78 percent. Assuming the ratio of prices for generic to brand-name drugs is approximately 7 (based on the unit price of Lipitor versus generic alternatives in Blue Cross Blue Shield; BCBS, 2017), this results in approximately a 5-percent increase in drug spending. The use of prior authorization for preferred drugs and counter-detailing efforts could reduce the extent of brand-name substitution for generics. For this lower savings scenario, we assumed no change in DME prices.

In the lower drug and device price scenario (scenario 3b), we assumed that NYH could negotiate drug and device prices equal to Medicaid prices. This scenario may be unlikely, but we assume Medicaid drug prices (including rebates) would be the lowest possible price for NYH to negotiate. If NYH negotiates aggressively for lower prices, one concern is potential pushback from the pharmaceutical industry, which could increase launch prices of drugs in the future or, at the extreme, not sell drugs to NYH.

Combined Scenarios

We also examined combined higher price and lower price scenarios, in which the alternative payment, administration, and drug and device assumptions are applied simultaneously. The combined higher price scenario represents a version of NYH in which providers and manufacturers are able to negotiate higher prices, and the NYH board does not leverage its purchasing power and does not generate administrative efficiencies in the health plan—namely, the combined higher price scenario (scenario 4a) reflects the payment rate, health plan administrative rate, and drug and device price assumptions in scenarios 1a, 2a, and 3a. The combined lower price scenario represents a version of NYH in which the NYH board aggressively negotiates or sets lower prices and cuts costs across all three of these areas. The combined lower price scenario (scenario 4b) reflects the payment rate, health administrative rate, and drug and device price assumptions in scenarios 1b, 2b, and 3b.

Alternative New York Health Specifications

Long-Term Care Benefits

In the comparison of alternative assumptions, we include the scenario in which the NYHA would cover long-term care benefits, and also varied the assumptions about the demand for

long-term care benefits that could stem from informal home care in the status quo. In scenarios 5, 5a, and 5b, we assumed enrollees would need to meet eligibility criteria based on medical necessity, similar to the requirements for Medicaid long-term care benefits in the status quo but without income and asset tests. To estimate changes in demand for long-term care, we considered three categories of long-term care services: formal paid nursing home care, formal paid home care, and informal home care (e.g., by family caregivers).

In a NYH scenario that covers long-term care benefits (scenario 5), we assumed that all formal paid long-term care paid by any payer or out of pocket under the status quo would shift to being paid by NYH. In addition, we assumed that 50 percent of informal home care in the status quo would be eligible for coverage under NYH. Of this 50 percent, we further assumed that 90 percent of the informal home care would shift to formal home care, and 10 percent would shift to nursing home care.

To translate these assumptions into increases in demand for long-term care, we used relative cost estimates of informal and formal long-term care. Although the cost of informal caregiving is difficult to estimate precisely, Hurd et al. (2013) estimated informal home care costs for people with dementia by valuing forgone wages of caregivers and with replacement costs using the market cost of home health services. Based on these costs and the aforementioned assumptions about shifts from informal home care to formal care, we estimated approximately a 200-percent increase in demand for home care and a 10-percent increase in nursing home care.²³ The resulting estimates of long-term care utilization and expenditures reflect these demand estimates mitigated by the supply of home and nursing care services by providers in PADSIM.

Given the uncertainty around how much more long-term care services would be demanded (such as possible “welcome mat” effects in which take-up increases among people who were previously eligible but not using services), we considered two additional scenarios with alternative demand responses to the NYH long-term care benefits. In scenario 5a, we assumed 75 percent of informal home care in the status quo would shift to being paid by NYH, resulting in an approximately 300-percent increase in demand for home care and a 15-percent increase in demand for nursing care. In scenario 5b, we assumed 25 percent of informal home care in the

²³ Hurd et al. (2013) estimated the following annual costs per person: \$13,876 for nursing home care, \$5,678 for formal home care, \$2,752 by Medicare, \$6,194 for out-of-pocket payments, and \$27,789 for informal home care (based on replacement cost) in 2010. We assumed that 6 percent of Medicare payments and 3 percent of out-of-pocket payments are for home care (based on national health expenditures); formal home care costs = $5,678 + 0.06 \times 2,752 + 0.03 \times 6,194 = 6,029$. We assumed that 12 percent of out-of-pocket payments are for nursing home care (based on national health expenditures); nursing home care costs = $13,876 + 0.12 \times 6,194 = 14,619$. Assuming 50 percent of informal home care shifts to formal care, and 90 percent of that shifts to formal home care, results in a $27,789 \times 0.5 \times 0.9 = 12,505$ increase in formal home care, or a $12,505/6,029 = 207$ percent increase. Assuming the remaining 10 percent of informal home care shifts to nursing home care results in a $27,789 \times 0.5 \times 0.1 = 1,389$ increase in nursing home care, which translates to a $1,389/14,619 = 10$ percent increase.

status quo would shift to being paid by NYH, resulting in a 100-percent increase in demand for home care and a 5-percent increase in demand for nursing care.

Cost Sharing

We examined the impact of incorporating modest cost sharing in NYH on costs. Note that this scenario deviates from the specifications of the NYHA as written. We include this scenario to explore the extent to which some cost sharing could moderate the increases in utilization and relieve the pressure on providers facing a large number of newly insured patients. In scenario 6, we analyzed the effect of having a 95-percent actuarial value plan for households above 250 percent of FPL and maintained the 98-percent actuarial value for those below 250 percent of FPL. This level of cost sharing is very modest—which is in alignment with the intention of the NYHA to provide affordable health care to all New Yorkers—relative to an overall effective actuarial value of about 89 percent in the status quo.

Alternative Provider Behavioral Responses

Although our base case assumptions are rooted in the best available estimates of provider responses, real-world examples of provider responses to large-scale health reform changes are limited, and there is substantial uncertainty as to the balance of factors providers would consider when determining the quantity of services they would provide to the population of NYH enrollees. Thus, in scenarios 7a, 7b, 8a, and 8b, we varied the providers' responses to payment rates and to congestion that reflects the balance between patient demand and providers' desired level of supply.

Results of Alternative Scenarios

Figure 6.1 and Figure 6.2 show the impacts of alternative assumptions on our estimates of the NYHA's impact on spending in 2022 and 2031 relative to the status quo. Overall, we find that alternative assumptions about the implementation of the NYHA, shown in the first panels in Figure 6.1 and Figure 6.2, could have the largest impacts on our estimates of spending under the NYHA. Under our base case scenario, we find similar spending compared to the status quo in 2022. We find that if provider payment rates, administrative costs, and drug payments are greater than what we assume in our base scenario, then rather than saving money, the NYHA could lead to an approximately 7.2-percent increase in total health care spending in New York State relative to the status quo in 2022 (scenario 4a). On the other hand, we find that total health care spending in New York State could fall by as much as 11.5 percent in 2022 under the NYHA (scenario 4b), relative to the status quo if the NYHA is able to achieve greater savings on provider payments, administrative costs, and drug payments than we assume in our base case. The difference between our estimates for these scenarios grows over time; in 2031, we estimate spending

Table 6.1. Sensitivity Scenarios

Scenario	Provider Payment Rates	Health Plan Administration	Drug and Device Prices	Long-Term Care Demand	Cost Sharing
Base case	<p>NYH payment rates equal to the average payment rate across all payers in the status quo in 2022</p> <p>Average annual growth in NYH payment rates equal to public payment growth in the status quo</p> <p>Provider elasticity of supply with respect to payment 0.6^a</p> <p>Provider elasticity of supply with respect to congestion 1.0^b</p>	<p>NYH health plan administrative rate of 6%, which is 1 percentage point below the New York Medicaid administrative rate</p>	<p>NYH drug and device prices 10% lower than Medicare prices in the status quo</p>	<p>NYH does not cover long-term care</p>	<p>NYH is a 98% actuarial value plan</p>
Alternative implementation assumptions					
1a. Higher payment rate	<p>NYH payment rates equal to the average payment rate across all payers in the status quo in 2022</p> <p>Average annual growth in NYH payment rates equal to <i>private</i> payment growth in the status quo</p>	Same as base case	Same as base case	Same as base case	Same as base case
1b. Lower payment rate	<p>NYH payment rate 5% lower than the average payment rate across all payers in the status quo in 2022</p> <p>Average annual growth in NYH payment rates equal to public payment growth in the status quo</p>	Same as base case	Same as base case	Same as base case	Same as base case

Table 6.1—Continued

Scenario	Provider Payment Rates	Health Plan Administration	Drug and Device Prices	Long-Term Care Demand	Cost Sharing
2a. Higher health plan administration rate	Same as base case	NYH health plan administrative rate of 12%, which is the national average Medicaid administrative rate	Same as base case	Same as base case	Same as base case
2b. Lower health plan administration rate	Same as base case	NYH health plan administrative rate of 3%, the Medicare FFS federal government administrative rate (excluding Medicare Advantage and Part D net cost of health insurance)	Same as base case	Same as base case	Same as base case
3a. Higher drug and device payments	Same as base case	Same as base case	NYH prescription drug prices equal to the average all-payer drug price in the status quo, but average NYH drug payments 2.5% <i>greater</i> than the dollar-weighted average all-payer payments in the status quo, due to lack of cost sharing increasing use of higher-cost drugs (e.g., brand-name drugs instead of generics) NYH DME prices equal to the average all-payer DME price in the status quo	Same as base case	Same as base case
3b. Lower drug and device payments	Same as base case	Same as base case	NYH drug and DME prices <i>equal to Medicaid</i> drug and DME prices in the status quo	Same as base case	Same as base case

Table 6.1—Continued

Scenario	Provider Payment Rates	Health Plan Administration	Drug and Device Prices	Long-Term Care Demand	Cost Sharing
4a. Combined scenario: higher costs	<p>NYH payment rates equal to the average payment rate across all payers in the status quo in 2022</p> <p>Average annual growth in NYH payment rates equal to <i>private</i> payment growth in the status quo</p>	<p>NYH health plan administrative rate of 12%, which is the national average Medicaid administrative rate</p>	<p>NYH prescription drug prices equal to the average all-payer drug price in the status quo, but average NYH drug payments 2.5% <i>greater</i> than the dollar-weighted average all-payer price in the status quo, due to lack of cost sharing increasing use of higher-cost drugs (e.g., brand-name drugs instead of generics)</p> <p>NYH DME prices equal to the average all-payer drug price in the status quo</p>	Same as base case	Same as base case
4b. Combined scenario: lower costs	<p>NYH payment rate 5% <i>lower</i> than the average all-payer payment rate in the status quo in 2022</p> <p>Average annual growth in NYH payment rates equal to public payment growth in the status quo</p>	<p>NYH health plan administrative rate of 3%, the Medicare FFS federal government administrative rate (excluding Medicare Advantage and Part D net cost of health insurance)</p>	<p>NYH drug and DME prices are <i>equal to Medicaid</i> drug and DME prices in the status quo</p>	Same as base case	Same as base case
Alternative NYHA specifications					
5. NYHP includes LTC benefits	Same as base case	Same as base case	Same as base case	200% increase in demand for HCBS and 10% increase in demand for institutional LTC relative to the status quo ^c	Same as base case
5a. Higher LTC demand	Same as base case	Same as base case	Same as base case	300% increase in demand for HCBS and 15% increase in demand for institutional LTC relative to the status quo ^c	Same as base case

Table 6.1—Continued

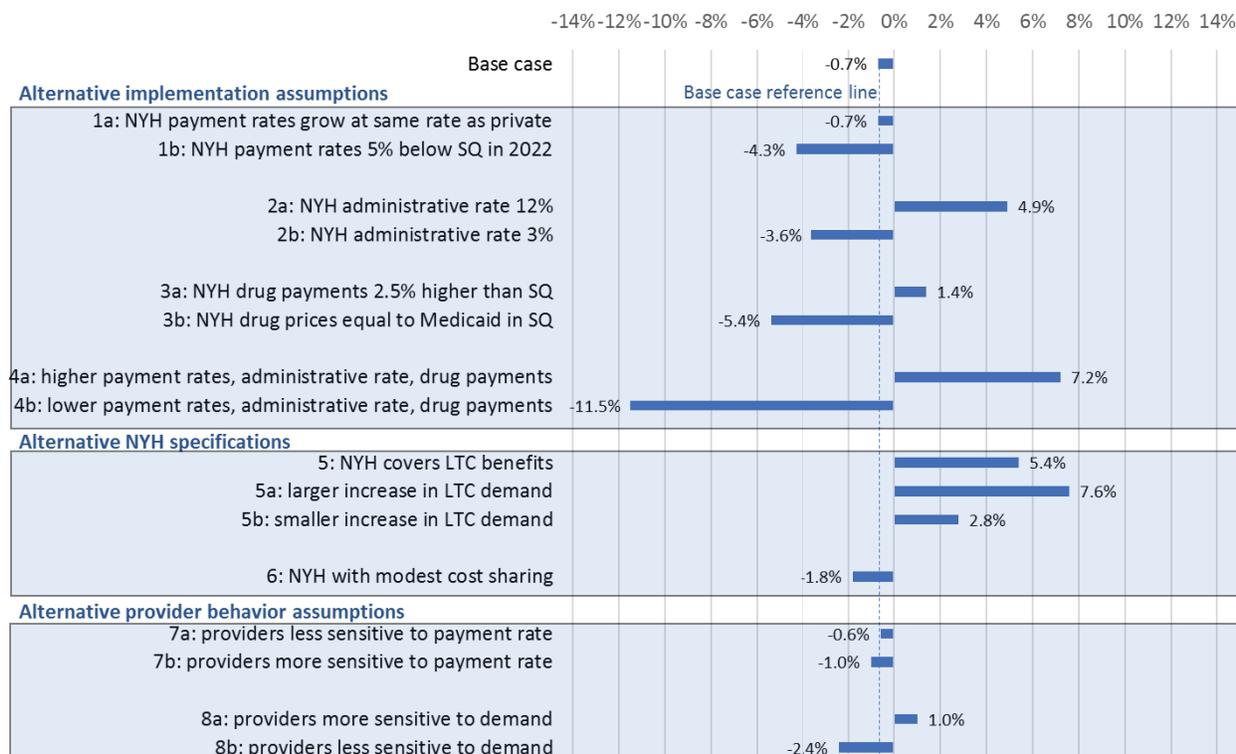
Scenario	Provider Payment Rates	Health Plan Administration	Drug and Device Prices	Long-Term Care Demand	Cost Sharing
5b. Lower LTC demand	Same as base case	Same as base case	Same as base case	100% increase in demand for HCBS and 5% increase in demand for institutional LTC relative to the status quo ^c	Same as base case
6. Modest cost sharing	Same as base case	Same as base case	Same as base case	Same as base case	98% actuarial value if <250% FPL, 95% actuarial value if ≥250% FPL
Alternative provider behavioral responses					
7a. Providers less sensitive to payment	Provider elasticity of supply with respect to payment 0.3	Same as base case	Same as base case	Same as base case	Same as base case
7b. Providers more sensitive to payment	Provider elasticity of supply with respect to payment 1.0	Same as base case	Same as base case	Same as base case	Same as base case
8a. Providers more sensitive to demand	Provider elasticity of supply with respect to congestion 2.0	Same as base case	Same as base case	Same as base case	Same as base case
8b. Providers less sensitive to demand	Provider elasticity of supply with respect to congestion 0.6	Same as base case	Same as base case	Same as base case	Same as base case

^a A positive provider elasticity of supply with respect to payment reflects the extent to which providers increase the supply of health care services in response to changes in payment rates.

^b A positive provider elasticity of supply with respect to congestion reflects the extent to which providers increase the supply of health care services in response to changes in congestion, which is a measure of nonfinancial factors limiting access to care—e.g., delays in available appointments.

^c These are increases in *demand*, not utilization. The resulting long-term care utilization and expenditures reflect a balance between the demand estimates and providers' desired supply of home and nursing care services based on patient demand and payment for services.

Figure 6.1. Projected Cost Impacts of the New York Health Act Under Alternative Assumptions, Relative to the Status Quo, 2022

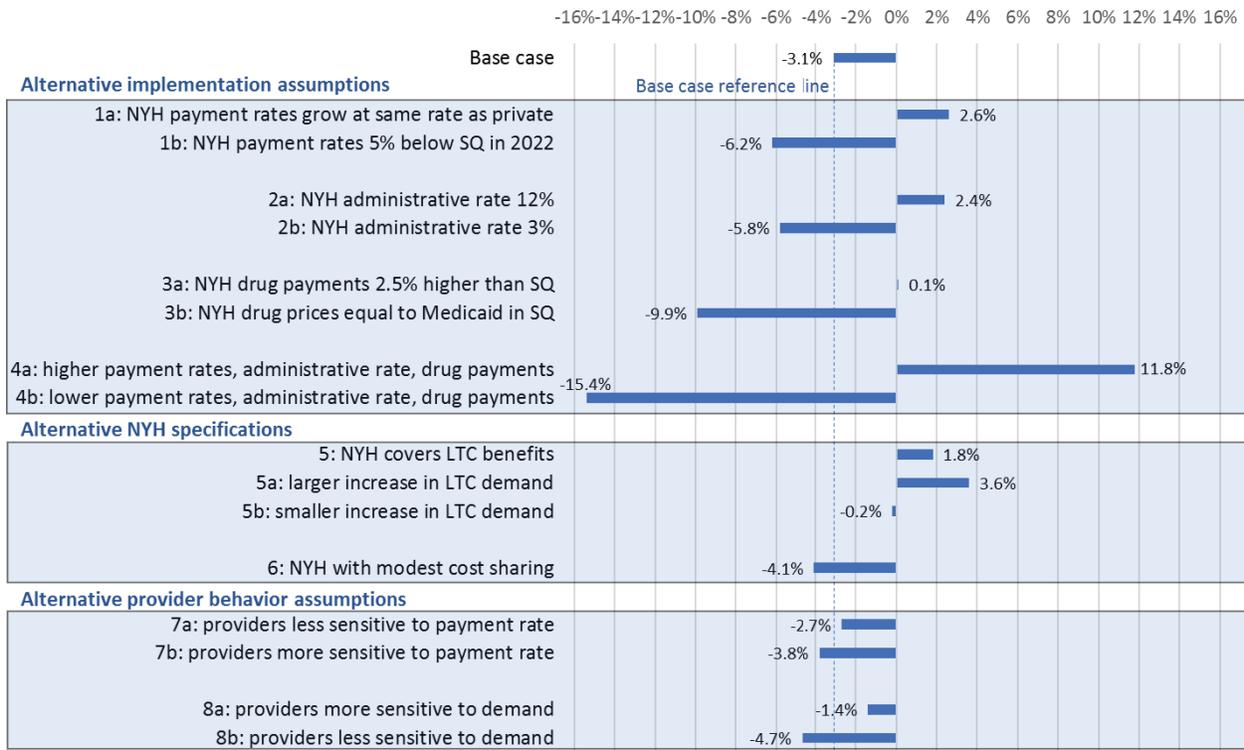


would be 11.8 percent higher under the NYHA in scenario 4a, and 15.4 percent lower under the NYHA in scenario 4b.

The second category of alternative assumptions we considered, alternative NYH specifications, are shown in the second panels of Figure 6.1 and Figure 6.2. We estimate that total health care spending would increase by 2.8 to 7.6 percent under the NYHA if long-term care is covered in 2022 (scenarios 5, 5a, and 5b). If the NYH includes modest cost sharing, total health care spending would be slightly lower than what it would be under baseline assumptions, and savings would be about 1.8 percent in 2022 under the NYHA relative to the status quo (scenario 6).

The third set of alternative assumptions we considered were alternative assumptions about providers' behavioral responses to the NYHA. We estimate that spending is relatively less sensitive to our assumptions about how providers would respond to payment rate changes (scenarios 7a and 7b). Our results are somewhat more sensitive to the assumption about how providers respond to increased demand (resulting from decreased cost sharing) from patients. We find that spending under the NYHA in 2022 would be 1.0 percent greater than the status quo if providers are highly responsive to changes in patients' demand for services (scenario 8a), and that spending would be approximately 2.4 percent less than the status quo if providers are less responsive to increased patient demand for services (scenario 8b).

Figure 6.2. Projected Cost Impacts of the New York Health Act Under Alternative Assumptions, Relative to the Status Quo, 2031



7. Conclusions

In this analysis, we estimate the impact of the NYHA on health care utilization and spending, who pays for health care, and effects on employment. We consider how financing under the NYHA would redistribute health care payments across types of payment by individuals, employers, and the state and federal governments, as well as across income levels.

Our estimates are the result of several assumptions. Under our base case assumptions, we estimate that the NYHA could expand coverage while initially keeping overall health care spending similar to the status quo, and that small decreases in total health care spending would grow over time—two key assumptions are that administrative rates are reduced and growth in provider payment rates is restrained. Increases in utilization of health care services under the NYHA would be offset by decreases primarily in provider payment rates and health plan administrative costs.

There would be a large shift in health care payments from premium payments and out-of-pocket payments in the status quo to predominantly tax payments under the NYHA. This financing shift entails a substantial redistribution in who pays for health care.

First, the state would take a large role in providing coverage and administering the health plan for its residents, thus taking on functions previously performed by commercial insurers. In addition, the state would manage the various federal inflows for public health care programs under the status quo (assuming successful federal waiver approvals) into a single funding stream under the NYHA. Consistent with the larger role of the state in providing coverage, nearly all health care payments under the NYHA flow through various tax channels.

We estimate that the new state tax collections from the NYH payroll and nonpayroll taxes would need to be \$139.1 billion in 2022 and \$210.1 billion in 2031 to fully finance NYH. This additional state tax revenue represents a 156-percent increase over the projected \$89.3 billion in total state tax revenue under the status quo in 2022. Our estimate falls in between the revenue estimates from two prior analyses of NYHA; Friedman (2015) estimated that the new tax revenues needed would be \$91 billion and Roy (2017) estimated \$226 billion in 2019.

Second, the new state taxes under the NYHA are meant to be progressively graduated, which, by design, involves redistribution of payments across income groups. The bill does not specify the tax rates and the degree of progressivity. To fully finance the NYHA under our base case assumptions, we estimated one possible graduated tax schedule with the NYH payroll tax rates ranging from about 6 to 18 percent and the NYH nonpayroll tax rates ranging from 6 to 19 percent in 2022. Alternate tax schedules could be designed to meet the financing needs. The tax schedule is critical to the viability of the program—to minimize tax avoidance and migration—and to ensure affordability, particularly among lower-income households.

Health care payments as a share of compensation (income plus employer payments for health care) are regressive by income under the status quo, and would become relatively progressive under the assumed NYH tax schedule. In terms of individual payments for health care, we estimated that households with incomes under 1,000 percent of FPL (about \$133,500 for a single individual or \$276,100 for a family of four in 2022) would have lower payments on average under the NYHA, while higher-income households would have higher payments on average under the NYHA relative to the status quo. Among households with income less than 1,000 percent of FPL, average payments for health care would decline by about 15 to 63 percent; however, the net effect for a given family depends on what they paid under the status quo. Average per capita health care payments by households with income between 1,000 and 2,000 percent of FPL would increase by about 13 percent. Taken as a group, the average of health care payments made by higher-income households above 2,000 percent of FPL would increase by over 50 percent.

Employer contributions to health care shift from voluntary contributions to ESI to mandatory contributions to the NYH payroll tax. On average, employers that offer insurance in the status quo would pay less (but the net effect for a given firm depends on its wage mix), while employers that do not offer in the status quo would pay more under the NYHA.

These results are sensitive to several assumptions. Our estimates reflect no in- and out-migration. However, under the NYHA, residents could take steps to avoid paying increased taxes. High-income residents may change investment decisions or move out of state. Businesses may make similar decisions to move out of state or adjust payroll tax obligations. These responses might be limited to businesses that do not currently offer health insurance, as they would pay more under the NYHA.

The impact of the NYHA also depends on a host of factors relating to how the plan is implemented, specifications of the health plan, and how stakeholders respond to the program. We included sensitivity analyses to be transparent about our assumptions and their uncertainty, and to allow policymakers and stakeholders to assess the range of possible impacts under alternative assumptions. The alternative assumptions reflect key areas subject to substantial uncertainty and different views ranging from low to high projections. We find the estimated effects are highly dependent on the assumptions about provider payment rates, administrative costs, and drug prices, which, when combined, resulted in up to a 15-percent decrease in spending or 12-percent increase in spending in 2031. Thus, the extent to which the state is willing and able to negotiate or set price levels and generate efficiencies would be critical to the resulting health care spending under the NYHA. Our estimates are also sensitive to assumptions about patient cost sharing. As written, the law assumes that NYH plan enrollees would have no cost sharing, even for low-value services or treatments for which there is a cost-effective alternative. With cost-sharing requirements, enrollees may seek out expensive treatments with little added benefit—such as using brand-name drugs instead of generics. In scenarios with

modest cost sharing, we estimate that the cost of the NYH plan would fall by about 2 percent in 2020, and by 4 percent in 2031, relative to our status quo estimates.

Many states have considered single-payer proposals, and such proposals remain part of the national conversation on health care. Our analysis finds that a single-payer approach in New York could expand coverage while reducing total health spending, assuming the state is able to negotiate modest reductions in the growth of provider payment and trim administrative expenses. While these assumptions are reasonable, they are also highly uncertain and depend on issues such as providers' bargaining power, the state's ability to administer the plan efficiently, and the federal government's willingness to grant waivers to the state. If any of these assumptions fails to hold, estimated costs to state taxpayers could increase. A further important detail is how the plan would be financed; the NYHA would add new payroll and nonpayroll taxes to fund the program, but the amounts for these taxes are not specified in the legislation. Our analysis assumes one possible progressive tax schedule that would substantially increase in health care payments among high-income residents and increase payments for some others—such as low-income people who receive Medicaid and who currently work for firms that do not offer health insurance coverage (these individuals would be adversely affected by new payroll taxes). On the one hand, this progressive tax schedule reduces average health care payments for much of the population and could dramatically reduce costs for some groups, such as poor individuals who are currently enrolled in ESI. On the other hand, the viability of this tax schedule depends on the assumption that few high-income people find ways to avoid taxation, such as by migrating out of the state or taking advantage of tax shelters or loopholes. If only a small percentage of the highest-income residents found ways to avoid taxes, such as through migration, the schedule would need to be reworked, potentially increasing the burden on middle- and lower-income residents. Overall, our results suggest that the single-payer option has the potential to reduce health care payments for the majority of New Yorkers, but our findings are relatively sensitive to assumptions about uncertain factors.

Appendix A: Detailed Methodology

Overview of the Comprehensive Assessment of Reform Efforts Model and the Payment and Delivery Simulation Model

We used two of RAND’s health care simulation models—COMPARE and PADSIM—in this analysis. From COMPARE, we estimated the insurance coverage in the status quo and demand for health care services under different health plans. The demand for health care services is fed into PADSIM, which reconciles the demand with providers’ desired level of supply.

Comprehensive Assessment of Reform Efforts

COMPARE is a microsimulation model based on economic theory, nationally representative data, and evidence from past experience to estimate how individuals and employers would respond to health policy changes (Cordova et al., 2013). The synthetic population in the model includes individuals and families, health care expenditures, and firms. The underlying data are from the April 2010 wave of the 2008 Survey of Income and Program Participation, the 2010–2011 MEPS, and the 2009 Kaiser Family Foundation/Health Research and Educational Trust Employer Health Benefits Survey.

Although the data sources predate the implementation of the ACA, we update them to reflect population growth using factors reported by the U.S. Census Bureau, and to reflect health care cost growth using the CMS NHEA. We routinely calibrate the model to ensure that it accurately predicts outcomes for years in which complete data exist. For example, we added an adjustment to our Medicaid enrollment algorithm to account for the “welcome mat” effect—in which previously eligible people newly enrolled due to the ACA.

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 premiums (and tax credits), anticipated out-of-pocket health care spending, the value of health care consumption, the risk of incurring a financially catastrophic health care bill, and penalties the individual would face by remaining uninsured. All else being equal, higher premiums reduce an individual’s probability of enrolling in health insurance. In contrast, factors that encourage enrollment include lower risk of catastrophic spending, reduced out-of-pocket spending, the avoidance of penalties, and increases in health care utilization.

COMPARE allows individuals' demand for health insurance to respond to changes in health insurance enrollment and cost sharing, based on elasticities of demand estimated from the RAND Health Insurance Experiment (Newhouse and Insurance Experiment Group, 1993) and the Oregon Health Insurance Experiment (Finkelstein et al., 2012). Although the RAND Health Insurance Experiment took place many years ago, it is still considered a highly reliable study for understanding the effects of health insurance benefit design on utilization, because it was a randomized-control study that assigned participants to health plans with various levels of generosity. Overall, it found that a 10-percent decrease in an enrollee's out-of-pocket expenses tends to increase health insurance spending by roughly 2 percent (Keeler and Rolph, 1988). While no studies have been able to replicate the unique experimental design of the RAND experiment, more recent studies using observational methods have found similar results (Dunn, 2016; Ellis, Martins, and Zhu, 2017). We also use results from the Oregon Health Insurance experiment, which used Oregon's short-lived Medicaid lottery system to replicate a randomized-control trial of a health insurance expansion. The study found that receiving insurance through the lottery increased health care spending by roughly 25 percent, relative to the control group (Finkelstein et al., 2012).

Firms 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.

Adjustments for New York

Because COMPARE is nationally representative, we made several adjustments to the model to reflect the status quo in New York. We accounted for community rating by assigning the same premium to all adults, rather than using the 3:1 age and 1.5:1 tobacco rating allowed by the ACA. As with the national COMPARE model, we allowed the premiums in the pool to adjust until the premium in the pool was in equilibrium with the health care costs, including administrative costs, of the pools' enrollees. We accounted for the EP by prohibiting individuals with incomes between 138 and 200 percent of FPL from receiving APTCs and CSRs. Instead, these individuals were eligible for the EP. We assumed that the actuarial value of the EP is 94 percent, which is the same actuarial value as CSR plans for individuals with incomes 100 to 150 percent of FPL. This reflects the fact that the EP has very low out-of-pocket costs (NYSOH, 2017a). We also assigned individuals to pay no EP premiums or to pay \$20 per month, based on income.

Modeling Changes to the Affordable Care Act

As described earlier, there have been several changes to ACA policies made under the Trump administration. For our status quo runs, we ran the COMPARE model under 2016 ACA policies,

and then under a separate set of policies for 2019 and future years. For 2016, we ran the model with the individual mandate penalty in place and with the assumption that the federal government was making CSR payments to insurers. In 2019 and future years, we modeled an elimination of the individual mandate penalty. In addition, we assumed that insurers load the cost of the CSRs onto the price of the silver plan. We did not model any changes associated with short-term, limited-duration plans, as such plans are prohibited from being sold in New York State.

Coverage Switches

We used the COMPARE model to project how individuals might change their health insurance status from 2016 to future years under the status quo. We then applied our estimated coverage switch rates to 2016 ACS data from New York to reassign health insurance status of the records in the ACS data and created projected enrollment for future years under the status quo.

To create coverage switch estimates, we ran the model to produce estimates for 2016 (under 2016 ACA policies) and for years 2019–2031 (under 2019 ACA policies). We then stratified the individuals in the model by age (0–18, 19–34, 35–49, 50–64, 65+) and income (\leq 138 percent FPL, 139–200 percent FPL, 201–300 percent FPL, 301–400 percent FPL, $>$ 400 percent FPL). Within each cell, we calculated the probability of transitioning from health insurance status j in 2016 to health insurance status k in year y as

$$\Pr(j \text{ in 2016} \rightarrow k \text{ in year } y) = \frac{\text{Number of individuals in insurance status } j \text{ in 2016 and in insurance status } k \text{ in year } y}{\text{Number of individuals in insurance status } j \text{ in 2016}}$$

Payment and Delivery Simulation Model

PADSIM is a simulation model focused on health care providers and their responses to changes in payment policy and patients’ demand for their services. The model outputs include projected quantities of health care services provided, revenues paid to providers for those services, and the level of “congestion,” which is a measure of the degree to which patients’ demand for services exceeds providers’ desired output. The historical data in the model include the number of patients and their demand for health care services, the number of providers, provider payment policy (including payment rates and prospectiveness), and the actual quantity of services provided.

PADSIM allows us to account for payment policy and providers’ supply of services when estimating the impact of the NYHA on utilization and expenditures (White et al., 2016; Hussey, Liu, and White, 2017). For modeling the NYHA, PADSIM was set up to include nine health care provider categories, each of which adjusts their supply of services in response to the generosity of provider payments. The behavioral parameters in PADSIM can be set so that providers will

reduce their supply of services when faced with either a reduction in payment rates or an increase in the degree of “prospectiveness” of the payment system. Prospectiveness captures the degree to which payments to providers are delinked from the costs providers incur. Under a true global budget, providers receive revenues that are fixed and that do not vary with the quantity or intensity of services provided—that payment arrangement corresponds to prospectiveness equal to one. Under true cost reimbursement, providers’ revenues scale proportionally with the quantity and intensity of services provided and with providers’ input costs—that payment arrangement corresponds to prospectiveness equal to zero. Real-world payment arrangements, such as fee-for-service with prospective rates, and bundled payment or pay-for-performance arrangements, generally fall between these extremes.

PADSIM requires historical data (on quantities of health care services, revenues, and payment rates) and projections of population growth, changes in health insurance coverage, and trends in provider payment policy. Historical provider revenues were estimated using the CMS SHEA. Historical hospital payment rates for Medicare, Medicaid, and all other payers were estimated using RAND Hospital Data. Historical physician payment rates for Medicare, Medicaid, and all other payers were estimated using published statistics (Zuckerman, Williams, and Stockley, 2009; Zuckerman and Goin, 2012; Direct Research, 2003; MedPAC, 2009, 2012; Nguyen, Kronick, and Sheingold, 2013).

Health Care Expenditures in New York

Aggregate State Health Expenditures

The CMS SHEA contain personal health care expenditures in the following service categories: hospital care, physician and clinical services, other professional services, dental services, home health services, prescription drugs and other nondurable medical products, durable medical products, nursing home care, and other health, residential, and personal care. The expenditures for these service categories are available by three payer categories: Medicare, Medicaid, and other.

In addition to personal health care expenditures, we included expenditures for medical sector structures and equipment in our total health care expenditures. NYH could create a capital expenditures fund to pay for structures and equipment. We assigned structures and equipment expenditures relative to personal health care expenditures excluding drugs and medical products. We applied an add-on factor based on the national health expenditures on structures and equipment relative to nonretail personal health care expenditures, 4.59 percent in 2016 (CMS, 2018b), to the nonretail personal health care expenditures in the SHEA (hospital care, physician and clinical services, other professional services, dental services, home health services, nursing home care, and other health, residential, and personal care).

For this analysis, we recategorized several service types for expenditures in New York. We carved out other nondurable medical products, which include over-the-counter drugs and medical sundries, based on the proportion of out-of-pocket payments for other nondurable medical products out of prescription drugs and other nondurable medical products paid by payers other than Medicaid and Medicare (including out-of-pocket payments), 23.2 percent in 2016 (CMS, 2018b). With the exception of some nondurable medical products paid by Medicare, we assumed that NYH would not cover most other nondurable medical products.

We also carved out an estimate of long-term care expenditures from the “other health, residential, and personal care” category. In this analysis, we assessed long-term care expenditures separately from medical care expenditures, in order to analyze the impact of NYH’s covering only medical care and not long-term care, and NYH’s covering both medical and long-term care. In this analysis, we considered home health services, nursing home care, and a portion of other health, residential, and personal care as long-term care.

Other health, residential, and personal care includes spending for Medicaid HCBS and residential mental health and substance abuse facilities, along with school health, worksite health, ambulance services, and other health care. First, we carved out Medicaid HCBS expenditures such that Medicaid long-term care expenditures (for home health, nursing care, and HCBS) were 36 percent of total Medicaid expenditures (estimated based on Eiken et al., 2017). Second, we carved out residential facility expenditures paid by Medicare and other payers based on the proportion of provider revenues for “residential intellectual and developmental disability, mental health, and substance abuse facilities” (North American Industry Classification System (NAICS) code 6232; \$0.29 billion in 2012) and “other ambulatory health care services” (NAICS code 6219; \$0.47 billion in 2012) (United States Census Bureau, 2016a). Expenditures associated with NAICS code 6232 were assigned as “other residential care”; expenditures associated with NAICS code 6219 were assigned as “other health and personal care.”

The most recent SHEA data available are for 2014. We inflated the aggregate 2014 personal health care and structures and equipment expenditures to 2016 expenditures using per capita growth rates from the NHEA for each of the SHEA service categories. Per capita growth in national personal health care expenditures was 5.3 percent from 2014 to 2015, and 3.6 percent from 2015 to 2016 (CMS, 2018b). Historical growth in health care expenditures in New York is similar to the national average: from 2000 to 2014, the average annual growth in New York’s personal health care expenditures was 5.5 percent, compared to 5.8 in national personal health care expenditures (CMS, 2017b).

The resulting expenditures by our service and payer types for 2016 are shown in Table A.1.

Imputation of Medical Expenditure Panel Survey Expenditures

We use the ACS as the basis for our population for patient-level estimates in PADSIM. The ACS does not have detailed health care spending information; we therefore merged in health spending data from the MEPS. The assignment of MEPS expenditures to individuals in the

Table A.1. New York State Health Expenditures by Service and Payer Category, 2016

Service Category	Personal Health Care and Structures and Equipment Expenditures (Billions)			Total
	Medicare	Medicaid	Other ^a	
Medical care expenditures				
Hospital care	19.7	19.9	42.1	81.7
Physician and clinical services	11.0	7.0	24.1	42.1
Other professional services	1.6	0.7	4.3	6.7
Dental services	0.1	0.8	7.3	8.1
Prescription drugs ^b	7.5	3.8	15.1	26.3
Durable medical products	0.5	0.6	2.0	3.1
Other health and personal care ^c	0.2	4.9	4.8	9.9
Long-term care expenditures				
Home health care	1.6	6.0	3.2	10.8
Nursing home care	2.9	7.1	3.8	13.9
HCBS and other residential care ^c	0.1	8.1	3.0	11.2
Fully out-of-pocket expenditures				
Out-of-pocket other nondurable medical products ^d	0	0	4.6	4.6
Total personal health care and structures and equipment expenditures	45.2	58.9	114.3	218.4

NOTE: Amounts include personal health care expenditures and structures and equipment expenditures equal to 4.59 percent of personal health care expenditures for all categories except prescription drugs, durable medical products, and other nondurable medical products.

^a The “other” payer category includes private payers; public payers other than Medicare and Medicaid, such as the Department of Veterans Affairs and workers’ compensation; and out-of-pocket payments.

^b The prescription drug category includes some other durable medical products paid by Medicare.

^c The sum of other health and personal care, HCBS, and other residential care equals the SHEA category “other health, residential, and personal care.”

^d Other nondurable medical products include over-the-counter drugs and medical sundries.

synthetic population consisted of several steps. First, we imputed health status for the synthetic population, which is not part of the ACS. We did this to ensure that we would capture differences in health spending patterns between New York and the United States as a whole that were attributable to health status differences. We identified nursing facility residents in our synthetic population targeting approximately 50 percent of the 216,600 residing in institutionalized group quarters (Health Data New York, 2009; United States Census Bureau, n.d.a) and assigning status based on self-reported difficulty with self-care, independent living, ambulatory function, cognitive function, hearing, and vision. We assigned nursing home residents to poor health status. For the rest of the population, we imputed health status for the synthetic population from New Yorkers in the 2016 March CPS supplement, based on age group, disability status, employment status, sex, insurance status, and income level. We supplemented the New York data with the full national CPS data set when the New York data were sparse. Next, we inflated the 2014 and 2015 MEPS expenditures to 2016 expenditures using annual per capita growth rates from the national health expenditures. Finally, we imputed health care

expenditures for the synthetic population from the MEPS, based on insurance status, age group, health status, income group, and sex. For nursing facility residents, we multiplied the imputed MEPS expenditures by two, based on average Medicare spending for beneficiaries in long-term care facilities (Jacobson, Neuman, and Damico, 2010). Both the CPS and MEPS imputation were conducted using a cell-based matching approach. We stratified both the donor (CPS and MEPS) and recipient (ACS) data into cells. Within each cell, we sampled values from the donor data set to impute to records in the recipient data set. Values were resampled if the resulting average from a cell in the recipient data set deviated too much (0.5 percent for the CPS match, 3 percent for the MEPS match) from the donor data set.

Allocation of Aggregate Expenditures to Individuals

We allocated aggregate expenditures to individuals differently depending on the service categories:

- For hospital care, physician and clinical services, other professional services, dental services, home health care, prescription drugs, and durable medical products, we allocated the aggregate expenditures by service category and payer (Medicare, Medicaid, and other) to individuals in proportion to their MEPS expenditures for that service and payer category.
- For Medicare nursing care expenditures (e.g., skilled nursing facility expenditures), we allocated the aggregate expenditures to individuals in proportion to their MEPS Medicare hospital care expenditures.
- For Medicaid HCBS expenditures, we allocated the aggregate expenditures to individuals in proportion to their MEPS Medicaid home health expenditures.
- For other residential and other health and personal care expenditures, we allocated the aggregate expenditures to individuals in proportion to their MEPS total expenditures by payer category.
- For nursing care expenditures, we allocated the aggregate expenditures uniformly to individuals assigned as nursing facility residents.
- For out-of-pocket payments for other nondurable medical products, we allocated the aggregate expenditures to individuals in proportion to their MEPS prescription drug expenditures paid by all payers and out of pocket.

Projected Growth

Table A.2 shows our average projected growth rates for the population, income, health care expenditures, and selected provider payment rates.

Our population projections are based on 2010 census data by five-year age categories and sex for New York State projected to 2020, 2030, and 2040 (Demographics Research Group, 2016).

Table A.2. Average Projected Annual Growth Rates, 2017–2031

Population	0.4%
Income	
Personal income per capita	3.5%
Wages per capita	3.1%
Health care expenditures per capita	4.0%
Payment rates for physician and clinical services, dental services, other health practitioners, home health, durable medical products	
Status quo—private	1.2%
Status quo—public	0.4%
NYHA	0.4%
Payment rates for hospital services	
Status quo—private	3.4%
Status quo—public	2.6%
NYHA	2.6%
Payment rates for prescription drugs	5.6%
Payment rates for nursing care	2.0%

SOURCES: University of Virginia Demographics Research Group 2020, 2030, 2040 projections from 2010 U.S. Census (Demographics Research Group, 2016); NYSDOB, 2018a; CBO, 2017a; Medicare trustees' projected inpatient hospital payments; Bureau of Labor Statistics, 2018.

NOTES: We applied population growth factors by age and sex. We assumed payment rate growth under the NYHA would equal growth in the payment rates by public health care programs in the status quo.

We applied weights at the person level to reflect population growth through each projected year, relative to 2016 as the base year.

We used New York–specific income projections from 2017 to 2019, and then used national projections from 2020 through 2031. Income and wage growth in 2017–2019 reflects projected growth in the New York *FY 2019 Economic and Revenue Outlook*. Growth in 2020–2027 reflects CBO projections, and growth in 2028–2031 reflects the average of the CBO's projected annual growth from 2017 to 2027. We do not account for business cycles beyond these projections.

Payment rate growth reflects RAND analyses of the overall price growth, Medicare payment policy under the status quo (including ACA productivity adjustments and the Medicare Access and CHIP Reauthorization Act, as described in the Medicare trustees' reports), and differentials in growth in payment rates between public and private payers. We assumed provider payment rate growth under the NYHA would equal growth in the payment rates by public health care programs in the status quo.

Income and Taxes in New York

Income and Wage Adjustment

We adjusted the self-reported income and wage variables from the ACS to match aggregate totals and the distribution across income. As ACS income variables are top coded, we assigned the differences between the ACS totals and the total income and wages projected in the New York State *FY 2019 Economic and Revenue Outlook* (NYSDOB, 2018a) to individuals with top-coded income variables. We checked the distribution of income and wages with data reported by the IRS for New York State, and adjusted the nonwage income distribution accordingly (IRS, 2015). Table A.3 shows the distribution of the population by income group in 2022.

Table A.3. Population by Income Group in the Status Quo, 2022

	Number of Individuals, Millions	Share of the Population, %
<139% FPL	4.2	21
139%–200% FPL	2.0	10
201%–300% FPL	2.9	14
301%–400% FPL	2.5	13
401%–500% FPL	2.1	10
501%–1,000% FPL	4.6	23
1,001%–2,000% FPL	1.2	6
>2,000% FPL	0.7	3

NOTE: We estimate that 100 percent of FPL will be \$13,350 for a single individual and \$27,610 for a family of four in 2022.

Federal Taxes Supporting Health Care Programs

We calculated the share of federal income taxes that support health care programs under the status quo using 2016 observed values and 2022 projections from the CBO and the Office of Management and Budget. Assuming that the share of income taxes used to fund health care programs is proportional to the share of total federal outlays spent on health care, we calculated total federal health care outlays divided by total federal outlays. We omitted Medicare Part A and Social Security spending from this calculation, as these programs are funded through dedicated payroll taxes rather than general federal income taxes. The final estimate of share of federal income tax payments devoted to health care spending was derived by

$$\frac{(total\ federal\ health\ care\ outlays) - (net\ Medicare\ Part\ A\ outlays)}{(total\ federal\ outlays) - (net\ Social\ Security\ outlays) - (net\ Medicare\ Part\ A\ outlays)}$$

In 2016, total federal outlays were \$3,853 billion, net Social Security outlays were \$893 billion (\$910 billion in outlays with \$17 billion in offsetting receipts), and total outlays on

major medical programs (Medicare, Medicaid, CHIP, and ACA Exchange subsidies) were \$1,012 billion (CBO, 2017a). Outlays for Medicare Part A were \$293 billion in 2016 (CBO, 2017b). Total outlays on veterans’ medical care, defense health programs, and other health spending were \$226 billion (Office of Management and Budget [OMB], 2017). We assume that the share of defense health programs for military retirees was equal to the proportion of retired service members and their families, 58 percent (CBO, 2017c), and excluded defense health spending for active duty military, which results in \$206 billion in outlays for veterans, military retirees, and other health spending. Using the above equation, we estimated that in 2016, 34.7 percent of federal income tax revenue was devoted to payments for health care (Table A.4).

Table A.4. Federal Outlays and Estimated Share of Federal Income Taxes Devoted to Health Care Spending, 2016 and 2022

Billions	2016	2022	Sources
Total federal outlays	\$3,853	\$5,205	CBO, 2017a
Total federal health care outlays, excluding defense health programs for active duty military	1,218	1,757	
Total outlays on major medical programs (Medicare, Medicaid, CHIP, ACA Exchange subsidies)	1,012	1,447	CBO, 2017a
Net Medicare Part A outlays	293	411	CBO, 2017b
Total outlays on veterans’ medical care, defense health programs for military retirees, and other health spending	$65 + 48 \times 0.58 + 113 = 206$	$79 + 56 \times 0.58 + 198 = 310$	OMB, 2017; CBO, 2017c
Net Social Security outlays	$910 - 17 = 893$	$1,257 - 20 = 1,237$	CBO, 2017a
Total federal health care outlays – net Medicare Part A outlays	925	1,346	
Total federal outlays – net Social Security outlays – net Medicare Part A outlays	2,667	3,557	
Share of federal income tax payments devoted to health care spending	34.7%	37.8%	

The CBO projects that federal outlays in 2022 will total \$5,205 billion, net Social Security outlays will be \$1,237 billion (\$1,257 billion in outlays with \$20 billion in offsetting receipts), and total outlays on major medical programs (Medicare, Medicaid, CHIP, and ACA Exchange subsidies) will be \$1,447 billion (CBO, 2017a). Outlays for Medicare Part A will be \$411 billion in 2022 (CBO, 2017b). Total outlays on veterans’ medical care, defense health programs, and other health spending will be \$331 billion (OMB, 2017). We assume the proportion of retired service members remains stable at 58 percent (CBO, 2017c), which results in \$310 billion in outlays for veterans, military retirees, and other health spending. We estimated that in 2022, 37.8 percent of federal income tax revenue will be devoted to payments for health care.

Health Plan Administration Rate Calculations

We estimated the percentage of expenditures allocated to administration of private health plans from financial statements filed under National Association of Insurance Commissioners requirements. From the 2017 annual New York supplement reports filed with the New York State DFS, we extracted total member months insured, total revenue, expenses, net reinsurance recoveries, federal or state reinsurance recoveries, federal or state risk-sharing recoveries, claims adjustment expenses, general administrative expenses, and increase in reserves for accident and health contracts (NAIC, 2017). We conducted this extract for 13 large health insurers (separating HMO and preferred provider organization [PPO] plans), which include a total of more than 8.8 million members representing more than 80 percent of covered lives by private insurers. We calculated the administrative load for each insurer according to the following formula:

$$\frac{\text{revenues}}{\text{expenses} - \text{recoveries}} - 1$$

Where *recoveries* = *net reinsurance recoveries + fed and state reinsurance recoveries + fed and state risk sharing recoveries*

We calculated the weighted average administrative load across these 13 insurers as

$$\frac{\sum(\text{member months} * \text{admin load})}{\sum(\text{member months})} = 18\%$$

The 13 insurers included in these calculations are Aetna (HMO only), Empire HealthChoice (PPO and HMO), Oxford Health Insurance (PPO and HMO), Excellus Health Plan (PPO and HMO), EmblemHealth HIP (HMO), UnitedHealthcare of New York (PPO and HMO), HealthNow NY (PPO and HMO), Capitol District Physicians Health Plan (PPO and HMO), Group Health (PPO), MVP Health (PPO and HMO), Independent Health (PPO and HMO), Care Connect (PPO), and Oscar (PPO).

We estimated the New York Medicaid health plan administration rate using FY 2016 information from the New York State Medicaid financial management data, state appropriations documentation, and Medicaid managed care rate setting documentation (CMS, 2016; NYSDOB, 2015; Office of the New York State Comptroller, 2017b). We calculated total administrative expenses by summing total net expenditures for Medicaid plan administration, activities of the OMIG, and managed care organization administrative costs, less electronic health record and health information technology incentives received. We divided this sum by total medical assistance, yielding an administrative rate of approximately 7 percent:

$$\frac{\$1,914M + \$55M + \$2,170M - \$122M}{\$58,826M} = 7\%$$

Literature Review

We reviewed the literature to inform model assumptions. We searched on academic journal databases including PubMed, EconLit, Web of Science, and Google Scholar, as well as agency report libraries, including the CBO, the Congressional Research Service, and the Government Accountability Office. Search topics included administrative costs, drug and device expenditures, fraud and abuse detection activities, and migration effects from health or tax policy changes. We excluded articles discussing administrative cost without empirical data, published before 1990, or discussing medical research other than health care services. We did not review articles that focused primarily on costs of drug development or that discussed drug pricing abstractly. We excluded articles discussing only nonfinancial fraud and abuse (such as physical abuse) and opinion pieces. We did not review studies focusing on migration within or between foreign countries. We used a more focused search strategy for long-term care financing in New York State using Google Scholar and the New York State Department of Health website.

In Table A.5, we provide information on the net savings of existing fraud control programs in New York Medicaid and the Medicare program.

Table A.5. Effectiveness of Medicaid and Medicare Fraud and Abuse Prevention Activities

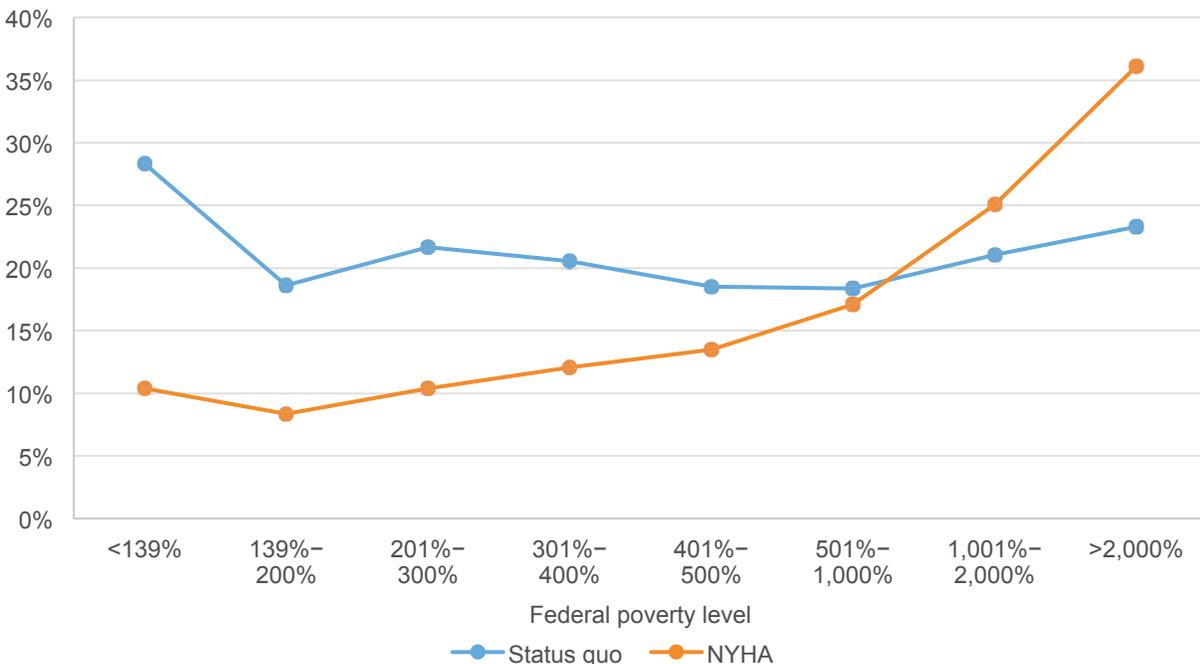
Program	Description	Spending	Recoveries	Savings
NYS OMIG	Independent office within New York State Department of Health that reviews fraud and abuse in Medicaid Activities include comprehensive program integrity efforts (Recipient Restriction Program, managed care, pharmacy, physician audits), and cost-avoidance initiatives	FY 2014–2015: \$51.9 million FY 2016–2017: \$50.2 million (Office of the New York State Comptroller, 2017a)	2014: \$206.2 million 2016: \$418.9 million (OMIG, 2016)	2014: \$154.3 million; 2016: \$368.7 million → Approximately 0.5% of Medicaid personal health care expenditures (CMS, 2017b)
NYS OAG, Medicaid Fraud Control Unit	Investigates, penalizes, and prosecutes Medicaid fraud related to billing, kickbacks, standards, abuse, and neglect	2008: \$44.3 million (NYS OAG)	2008: \$266.5 million (OAG, 2008)	2008: \$222.2 million → Approximately 0.5% of Medicaid personal health care expenditures (CMS, 2017b)
Health Care Fraud and Abuse Control Program	National program under the attorney general and Department of Health and Human Services Includes Department of Health and Human Services Office of the Inspector General audits, Health Care Fraud Prevention and Enforcement Action Team, Healthcare Fraud Prevention Partnership, and Medicare Fraud Strike Force	FY 2014–2016: Return on investment \$5 for every \$1 spent (HHS OIG, 2017)	FY 2016: \$2.5 billion (HHS OIG, 2017)	FY 2016: ~\$2 billion → Approximately 0.2% of Medicare and Medicaid/CHIP federal spending on personal health care expenditures (CMS, 2018b)

Appendix B: Supplemental Results

Impact on Household Health Care Payments

The per capita health care payments as a share of compensation shown in Figure 5.4 in the main body of the report include payments for long-term care services such as nursing care and home health services. In Figure B.1, we show the same per capita health care payments as a share of compensation but only for individuals under age 65, who are less likely to use long-term

Figure B.1. Average Health Care Payments as a Share of Compensation Among Individuals Under Age 65, by Income Group, 2022



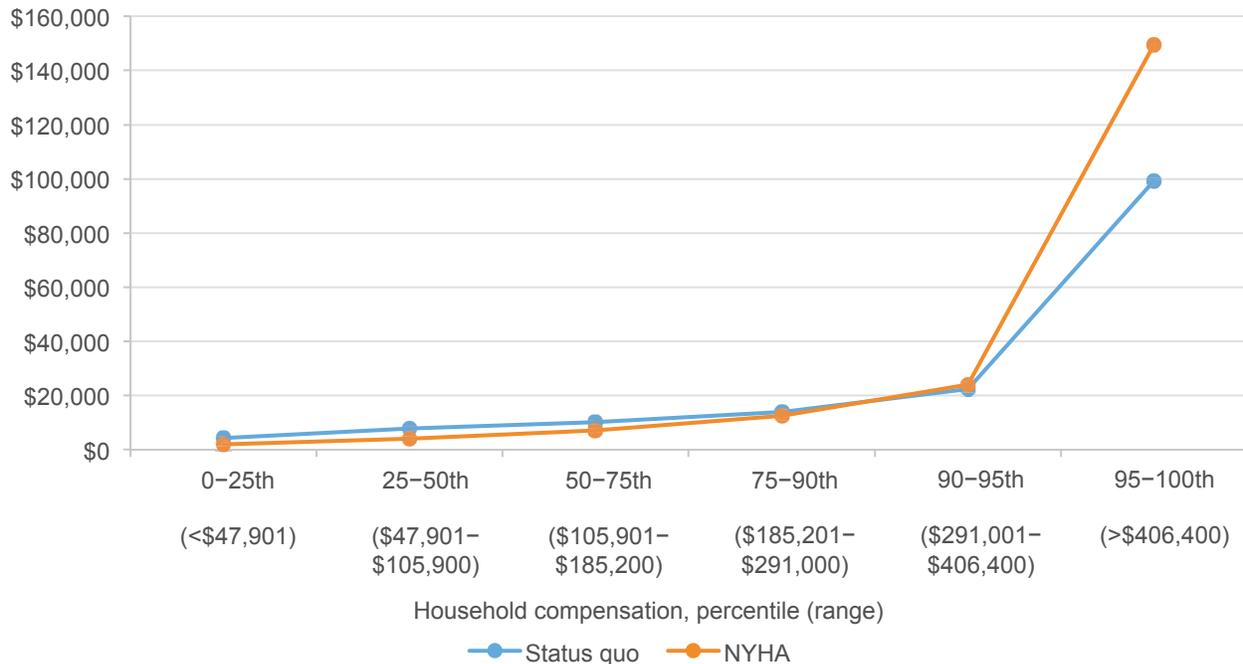
NOTES: Payments include premiums paid by individuals, out-of-pocket payments, tax payments supporting health care programs, and premiums paid by employers (forgone wages), minus the value of the tax exclusion for ESI and the NYH payroll tax. The denominator reflects compensation consisting of household income and employer contributions to health benefits (ESI or the NYH payroll tax). We summed payments for all individuals under age 65 in each income group, and divided by the sum of compensation in each income group. For both the status quo and the NYHA scenarios, the x axis shows the income group for individuals in the status quo, without accounting for changes in wages under the NYHA, so that the same group of individuals are compared within each income group. We estimate that 100 percent of FPL will be \$13,350 for a single individual and \$27,610 for a family of four in 2022. We estimate that household income for the 2,000-percent FPL group begins at \$267,000 for a single individual and \$552,200 for a family of four, and average household income in this group will be about \$1,654,700 in 2022.

care services. Among individuals under age 65, per capita health care payments are about 28 percent for the lowest-income households to 23 percent for the highest-income households under the status quo. Under the NYHA, per capita health care payments are lower for lower-income households and higher for higher-income households relative to the status quo, at about 10 percent for the lowest-income households to 36 percent for the highest-income household.

In Figure 5.4 and Figure B.1, we present average health care payments by FPL groupings because the FPL accounts for household income and size. Alternatively, considering household health care payments among groups by household compensation (income plus employer contributions for health care) without accounting for household size results in similar estimates.

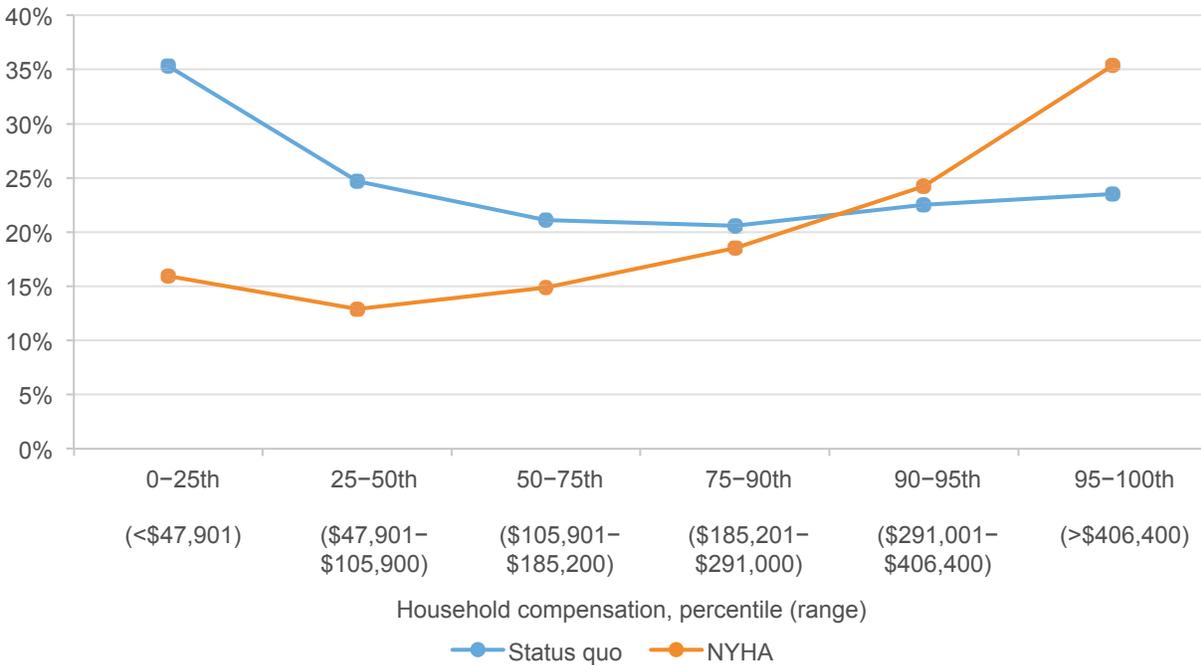
Figure B.2 shows per capita health care payments among percentile groupings by household compensation; Figure B.3 shows average health care payments as a share of compensation, among percentile groupings by household compensation. The top fifth percentile of residents by household compensation would pay an average of about \$99,200 per person under the status quo and \$149,700 per person under the NYHA—an average increase of \$50,200 per person in 2022. Among the top fifth percentile, average household compensation is approximately \$1,255,700

Figure B.2. Per Capita Health Care Payments, by Household Compensation Percentile, 2022



NOTES: Payments include premiums paid by individuals, out-of-pocket payments, tax payments supporting health care programs, and premiums paid by employers (forgone wages), minus the value of the tax exclusion for ESI and the NYH payroll tax. We summed payments for all individuals within each percentile group and divided by the total number of individuals in the percentile group. For both the status quo and the NYHA scenarios, the x axis shows the percentile group for individuals in the status quo, without accounting for changes in wages under the NYHA, so that the same group of individuals are compared within each group.

Figure B.3. Average Health Care Payments as a Share of Compensation, by Household Compensation Percentile, 2022



NOTES: Payments include premiums paid by individuals, out-of-pocket payments, tax payments supporting health care programs, and premiums paid by employers (forgone wages), minus the value of the tax exclusion for ESI and the NYH payroll tax. The denominator reflects compensation consisting of household income and employer contributions to health benefits (ESI or the NYH payroll tax). We summed payments for all individuals in each percentile group, and divided by sum of compensation in each group. For both the status quo and the NYHA scenarios, the x axis shows the percentile group for individuals in the status quo, without accounting for changes in wages under the NYHA, so that the same group of individuals are compared within each percentile group.

in the status quo, or \$422,300 per person; thus, health care payments represent 23 percent of compensation per person under the status quo and 35 percent under the NYHA.

For those in the ninetieth to ninety-fifth percentile of household compensation, average payments would increase by about \$1,700 per person. The average household compensation for this group is \$337,800 in 2022; average health care payments increase from about 23 percent of compensation per person to 24 percent.

For those in the seventy-fifth to ninetieth percentile of household compensation, average payments would decrease by about \$1,500 per person. The average household compensation for this group is \$228,569 in 2022; average health care payments decrease from about 21 percent of compensation per person to 19 percent.

Among those with household compensation below the seventy-fifth percentile, average health care payments would decrease by about \$3,000 per person. The average household compensation for this group is \$80,598 in 2022; average health care payments decrease from about 24 percent of compensation per person to 14 percent.

Alternate Tax Schedules

The tax schedule for the NYH payroll and nonpayroll taxes in our base case NYHA scenario is one possible schedule. The NYHA proposes progressively graduated taxes but does not specify the tax rates and the degree of progressivity. The tax schedule is critical to the viability of the program—in terms of minimizing tax avoidance and migration—and to ensuring affordability, particularly for lower-income households.

Although exploring the optimal tax schedule is not one of the objectives of this analysis, we estimate two alternate tax schedules to provide examples of how the schedule could be varied in order to still meet the financing needs of NYH. Table B.1 shows our base case schedule (with the marginal tax rates increasing from 1x to 2x to 3x across the three income brackets) and two alternative tax schedules: (1) a flat tax schedule across the three income brackets, and (2) a steeper tax schedule that exempts the lower-income bracket such that the rates increase from 0 to 1x to 2x across the three income brackets. These alternate tax schedules result in the same aggregate tax revenue as the base case schedule; however, the distribution of who pays for health care would be different under each schedule.

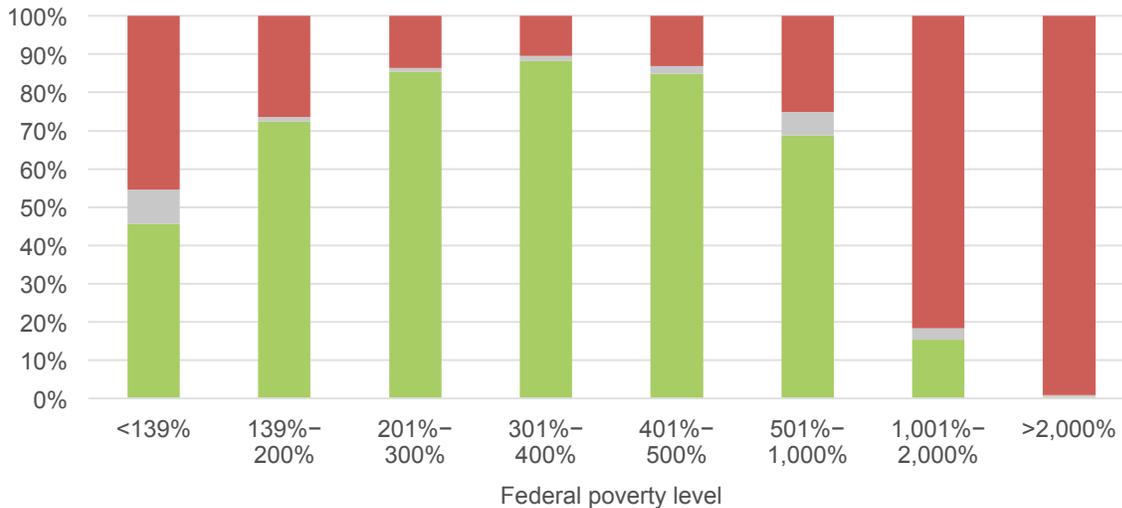
Table B.1. Alternate New York Health Payroll and Nonpayroll Marginal Tax Rate Schedules, 2022

Income Bracket	Marginal Tax Rate, Percent					
	Base Case Schedule		Flat Schedule		Lowest Bracket Exempt	
	NYH Payroll Tax	NYH Nonpayroll Tax	NYH Payroll Tax	NYH Nonpayroll Tax	NYH Payroll Tax	NYH Nonpayroll Tax
≤\$27,500	6.1	6.2	11.6	13.9	0.0	0.0
\$27,501–\$141,200	12.2	12.4	11.6	13.9	12.8	11.1
>\$141,200	18.3	18.6	11.6	13.9	25.6	22.4

NOTES: These marginal tax rates are for taxes dedicated to NYH, and are additional tax rates on top of existing taxes (the existing New York State personal income tax rates ranged from 4 to 8.82 percent in 2017). For each bracket, the rate applies to income above prior bracket. We increased the dollar value of the thresholds for the income brackets over time based on CPI. The thresholds started at \$25,000 (approximately FPL for a family of four) and \$128,400 (the maximum taxable earnings for Social Security) in 2018. For the payroll tax, the brackets apply to wages and salaries. For the nonpayroll tax, the brackets apply to nonwage income.

The design of the tax credits also has implications for who would pay more and who would pay less under the NYHA. Currently, Medicaid enrollees in New York State pay very little for their health care. Under the base case tax schedule used in the main body of the report, these individuals would be subject to new payroll and nonpayroll taxes, leading to higher payments for some low-income individuals. Figures B.4, B.5, and B.6 show the share of people who would pay less and the share of people who would pay more under the tax schedule used in the main report, the flat tax schedule, and the schedule in which the lowest income group is exempt from new taxes. We estimate that, overall, 65 percent of people would pay less under the base tax

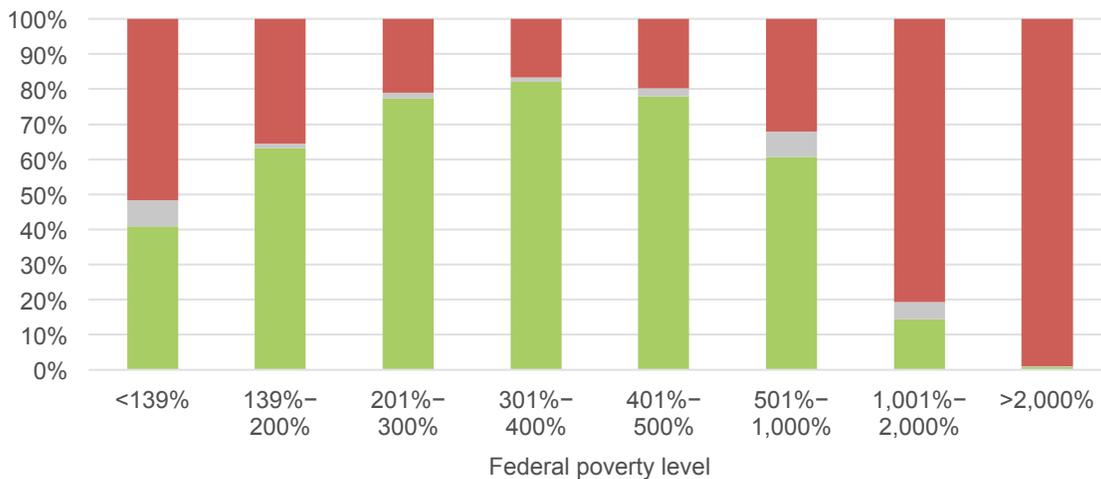
Figure B.4. Percentage of Residents Paying More or Less Under the Base Tax Schedule, 2022



■ Pay less under the NYHA ■ Pay about the same under the NYHA ■ Pay more under the NYHA

NOTES: This figure shows the share of individuals in households that pay more (in red) or less (in green) under the NYHA, using the base tax schedule presented in this report, relative to the status quo. Under the base tax schedule in 2022, those with incomes under \$27,500 face new payroll and nonpayroll taxes of 6.1 and 6.2 percent, respectively; those with incomes between \$27,501 and \$141,200 face new payroll and nonpayroll taxes of 12.2 and 12.4 percent, respectively; and those with incomes above \$141,201 face new payroll and nonpayroll taxes of 18.3 and 18.6 percent, respectively. The gray shaded area indicates that payment differences between the NYHA and the status quo are less than \$100 or within 2 percent.

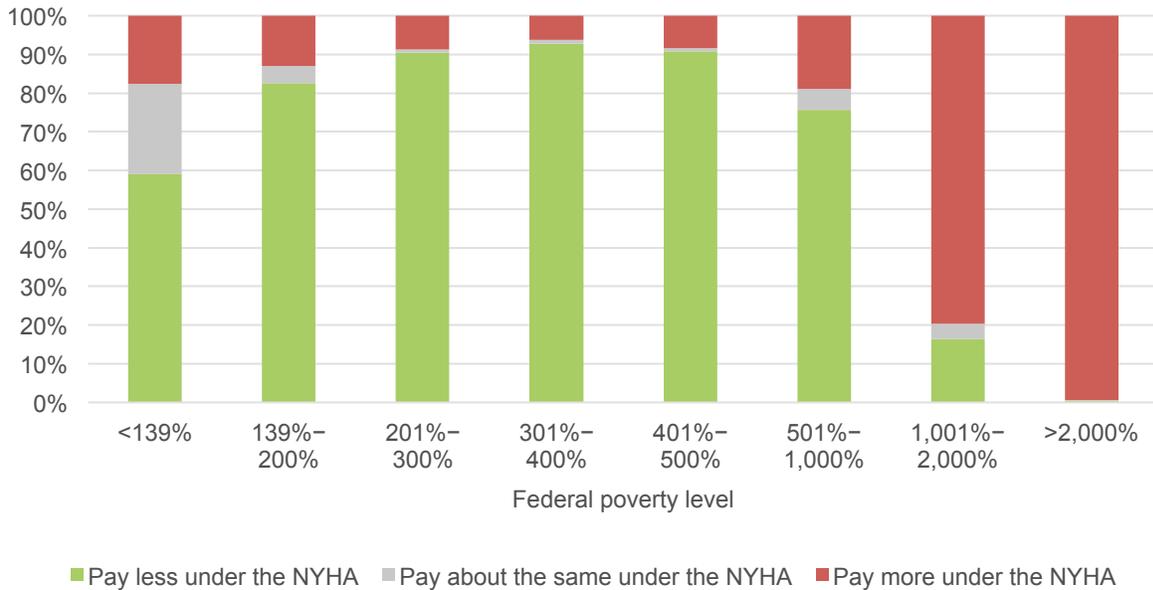
Figure B.5. Percentage of Residents Paying More or Less Under the Flat Tax Schedule, 2022



■ Pay less under the NYHA ■ Pay about the same under the NYHA ■ Pay more under the NYHA

NOTES: This figure shows the share of individuals in households that pay more (in red) or less (in green) under the NYHA, using a flat tax schedule, relative to the status quo. Under the flat tax schedule in 2022, the payroll tax rate is 11.6 percent and the nonpayroll tax rate is 13.9 percent, regardless of income. The gray shaded area indicates that payment differences between the NYHA and the status quo are less than \$100 or within 2 percent.

Figure B.6. Percentage of Residents Paying More or Less Under the Tax Schedule in Which the Lowest New York Health Bracket Is Exempt, 2022



NOTES: This figure shows the share of individuals in households that pay more (in red) or less (in green) under the NYHA, using a tax schedule that exempts the lowest bracket from NYH tax payments, relative to the status quo. Under this tax schedule in 2022, those with incomes under \$27,500 do not pay NYH taxes; those with incomes between \$27,501 and \$141,200 face new payroll and nonpayroll taxes of 12.8 and 11.2 percent, respectively; and those with incomes above \$141,201 face new payroll and nonpayroll taxes of 25.6 and 22.4 percent, respectively. The gray shaded area indicates that payment differences between the NYHA and the status quo are less than \$100 or within 2 percent.

schedule relative to the status quo (and about 4 percent would pay about the same), 60 percent would pay less under the flat tax schedule relative to the status quo (and about 4 percent would pay about the same), and 73 percent would pay less under the schedule that exempts the lowest income tax bracket relative to the status quo (and about 7 percent would pay about the same). Importantly, the NYHA does not specify tax rates, so the distributional consequences of the tax schedules presented in this report are the result of assumptions, rather than an inherent feature of the NYHA. The share of residents who pay more or less under the NYHA depends on the design of the tax schedule—particularly the degree of progressivity across income.

Bibliography

- Aaron, Henry J., “The Costs of Health Care Administration in the United States and Canada—Questionable Answers to a Questionable Question,” *New England Journal of Medicine*, Vol. 349, 2003, pp. 801–803, doi:10.1056/NEJMe030091.
- Aaron, Henry J., and William B. Schwartz, *The Painful Prescription: Rationing Hospital Care*, Washington, D.C.: Brookings Institution, Studies in Social Economics, 1984.
- Agency for Healthcare Research and Quality, “Medical Expenditure Panel Survey (MEPS): Insurance Component State and Metro Area Tables,” Rockville, Md.: U.S. Department of Health and Human Services, 2016a.
- , “Medical Expenditure Panel Survey (MEPS): Percent of Private-Sector Establishments That Offer Health Insurance by Firm Size and State: United States, 2016,” Rockville, Md.: U.S. Department of Health and Human Services, 2016b.
- , “Medical Expenditure Panel Survey (MEPS): Household Component,” Rockville, Md.: U.S. Department of Health and Human Services, 2017.
- AHRQ—See Agency for Healthcare Research and Quality.
- Bakija, Jon, and Joel Slemrod, *Do the Rich Flee from High State Taxes? Evidence from Federal Estate Tax Returns*, Williamstown, Mass.: Williams College, July 2004.
- Barnett, Jessica C., and Edward R. Berchick, *Health Insurance Coverage in the United States: 2016, Current Population Reports*, Washington, D.C.: U.S. Government Printing Office, 2017. As of June 27, 2018:
<https://www.census.gov/content/dam/Census/library/publications/2017/demo/p60-260.pdf>
- Berenson, Robert A., Paul B. Ginsburg, Jon B. Christianson, and Tracy Yee, “The Growing Power of Some Providers to Win Steep Payment Increases from Insurers Suggests Policy Remedies May Be Needed,” *Health Affairs*, Vol. 31, No. 5, 2012, pp. 973–981.
- Blanchfield, Bonnie B., James L. Heffernan, Bradford Osgood, Rosemary R. Sheehan, and Gregg S. Meyer, “Saving Billions of Dollars—and Physicians’ Time—by Streamlining Billing Practices,” *Health Affairs*, Vol. 29, No. 6, 2010, pp. 1248–1254, doi:10.1377/hlthaff.2009.0075.

- Bloniarz, Kate, Ariel Winter, and David Glass, “Assessing Payment and Adequacy and Updating Payments: Physician and Other Health Professional Services; an Alternative to the Merit-Based Incentive Payment System (MIPS),” slides, December 7, 2017. As of June 27, 2018: <http://www.medpac.gov/docs/default-source/default-document-library/dec-phys-2017-public.pdf?sfvrsn=0>
- Blue Cross Blue Shield, *Rising Costs for Patented Drugs Drive Growth of Pharmaceutical Spending in the U.S.*, Chicago, Ill., 2017. As of June 27, 2018: <https://www.bcbs.com/the-health-of-america/reports/rising-costs-patented-drugs-drive-growth-pharmaceutical-spending-us>
- Brown, Timothy T., Janet M. Coffman, Brian C. Quinn, Richard M. Scheffler, and Douglas D. Schwalm, “Do Physicians Always Flee from HMOs? New Results Using Dynamic Panel Estimation Methods,” *Health Services Research*, Vol. 41, No. 2, 2006, pp. 357–373, doi:10.1111/j.1475-6773.2005.00485.x.
- Bureau of Economic Analysis, “Regional Economic Accounts,” Department of Commerce, 2018. As of June 27, 2018: <https://www.bea.gov/regional/index.htm>
- Bureau of Labor Statistics, “Occupational Employment Statistics, May 2017 National Industry-Specific Occupational Employment and Wage Estimates, NAICS 524000—Insurance Carriers and Related Activities,” Department of Labor, 2017. As of June 27, 2018: https://www.bls.gov/oes/current/naics3_524000.htm
- , Producer Price Index (PPI) Industry Data, Department of Labor, 2018. As of June 27, 2018: <https://data.bls.gov/cgi-bin/dsrv?pc>
- Burman, Leonard E., and William C. Randolph, “Measuring Permanent Responses to Capital-Gains Tax Change in Panel Data,” *The American Economic Review*, Vol. 84, No. 4, 1994, pp. 794–809.
- CBO—*See* Congressional Budget Office.
- CCIIO—*See* Center for Consumer Information and Insurance Oversight.
- Center for Consumer Information and Insurance Oversight, “Section 1332: State Innovation Waivers,” n.d. As of May 18, 2018: https://www.cms.gov/CCIIO/Programs-and-Initiatives/State-Innovation-Waivers/Section_1332_state_Innovation_Waivers-.html
- , “Market Rating Reforms: State Specific Rating Variations,” Baltimore, Md.: Centers for Medicare and Medicaid Services, 2017. As of June 27, 2018: <https://www.cms.gov/CCIIO/Programs-and-Initiatives/Health-Insurance-Market-Reforms/state-rating.html>
- Centers for Medicare and Medicaid Services, “About Section 1115 Demonstrations,” n.d. As of May 16, 2018: <https://www.medicare.gov/medicaid/section-1115-demo/about-1115/index.html>

- , *Medicare Waiver Demonstration Application*, U.S. Department of Health and Human Services, Form CMS-10069, 2010. As of June 27, 2018:
<https://www.cms.gov/Medicare/CMS-Forms/CMS-Forms/Downloads/CMS10069.pdf>
- , “Long Term Services and Supports Annual Expenditures,” 2015. As of May 18, 2018:
<https://www.medicaid.gov/medicaid/ltss/reports-and-evaluations/index.html>
- , “FY 2016 Financial Management Data,” 2016. As of May 18, 2018:
<https://data.medicaid.gov/Uncategorized/FY-2016-Financial-Management-Data/kn4e-mjby>
- , “Medicare Geographic Variation, Public Use File, State/County Table—All Beneficiaries,” zip file, February 15, 2017a. As of June 4, 2018:
http://download.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Medicare-Geographic-Variation/Downloads/State_County_Table_All.zip
- , “National Health Expenditure Data—State (Residence),” Office of the Actuary, last modified November 21, 2017b. As of June 27, 2018:
<https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsStateHealthAccountsResidence.html>
- , “Medicaid Drug Rebate Program,” last modified November 24, 2017c. As of June 4, 2018:
<https://www.medicaid.gov/medicaid/prescription-drugs/medicaid-drug-rebate-program/index.html>
- , “Medicare 2018 Cost at a Glance,” 2018a. As of June 11, 2018:
<https://www.medicare.gov/your-medicare-costs/costs-at-a-glance/costs-at-a-glance.html>
- , “National Health Expenditure Data,” Office of the Actuary, 2018b. As of June 27, 2018:
<https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/index.html>
- Clemens, Jeffrey, and Joshua Gottlieb, “Do Physicians’ Financial Incentives Affect Medical Treatment and Patient Health?” *American Economic Review*, Vol. 104, No. 4, 2014, pp. 1320–1349.
- CMS—See Centers for Medicare and Medicaid Services.
- Cohen, Roger, Andrew Lau, and Charles Steindel, *The Effects of Marginal Tax Rates on Interstate Migration in the U.S.*, Trenton, N.J.: New Jersey Department of the Treasury, October 2011.
- Committee for a Responsible Federal Budget, “Analysis of the Sanders Single-Payer Offsets,” *CRFB Blog*, February 3, 2016. As of June 27, 2018:
<http://www.crfb.org/blogs/analysis-sanders-single-payer-offsets>
- Congressional Budget Office, *Effects of Changes to the Health Insurance System on Labor*, July 13, 2009.

- , “Options for Reducing the Deficit: 2017 to 2026—Require Manufacturers to Pay a Minimum Rebate on Drugs Covered Under Part D of Medicare for Low-Income Beneficiaries,” December 8, 2016. As of June 27, 2018:
<https://www.cbo.gov/budget-options/2016/52239>
- , “Budget and Economic Outlook 2017 to 2027,” 2017a. As of June 27, 2018:
<https://www.cbo.gov/sites/default/files/recurringdata/51135-2017-06-economic-projections2.xlsx>
- , “Medicare—Congressional Budget Office’s June 2017 Baseline,” June 29, 2017b. As of June 27, 2018:
<https://www.cbo.gov/sites/default/files/recurringdata/51302-2017-06-medicare.pdf>
- , *Approaches to Changing Military Health Care*, October 2017c. As of June 27, 2018:
<https://www.cbo.gov/system/files/115th-congress-2017-2018/reports/53137-approachestochangingmilitaryhealthcare.pdf>
- , *Repealing the Individual Health Insurance Mandate: An Updated Estimate*, Washington, D.C., November 2017d. As of June 27, 2018:
<https://www.cbo.gov/system/files/115th-congress-2017-2018/reports/53300-individualmandate.pdf>
- Cook, Anna, “Costs Under Medicare’s Prescription Drug Benefit and a Comparison with the Cost of Drugs Under Medicaid Fee-for-Service,” briefing slides, Congressional Budget Office, June 23, 2013. As of June 27, 2018:
http://www.cbo.gov/sites/default/files/cbofiles/attachments/44366_AcademyHealthPresentation_Cook.pdf
- Coomes, Paul A., and William H. Hoyt, “Income Taxes and the Destination of Movers to Multistate MSAs,” *Journal of Urban Economics*, Vol. 63, No. 3, May 2008, pp. 920–937.
- Cordova, Amado, Federico Girosi, Sarah Nowak, Christine Eibner, and Kenneth Finegold, “The COMPARE Microsimulation Model and the U.S. Affordable Care Act,” *International Journal of Microsimulation*, Vol. 6, No. 3, 2013, pp. 78–117.
- Decker, Sandra L., “Two-Thirds of Primary Care Physicians Accepted New Medicaid Patients in 2011–12: A Baseline to Measure Future Acceptance Rates,” *Health Affairs*, Vol. 32, No. 7, 2013, pp. 1183–1187, doi:0.1377/hlthaff.2013.0361.
- Demographics Research Group, “National Population Projections,” Weldon Cooper Center for Public Service, University of Virginia, 2016. As of May 18, 2018:
<https://demographics.coopercenter.org/national-population-projections>
- Department of Health and Human Services, “State of Minnesota—Patient Protection and Affordable Care Act Section 1332 Waiver Approval,” letters of approval, October 2017. As of June 27, 2018:
<https://www.cms.gov/CCIIO/Programs-and-Initiatives/State-Innovation-Waivers/Downloads/Approval-Letter-MN.pdf>

- Department of Health and Human Services, Office of the Inspector General, *The Department of Health and Human Services and the Department of Justice Health Care Fraud and Abuse Control Program Annual Report for Fiscal Year 2016*, Washington, D.C., January 2017. As of June 27, 2018:
<https://oig.hhs.gov/reports-and-publications/hcfac/>
- Direct Research, *Medicare Physician Payment Rates Compared to Rates Paid by the Average Private Insurer, 1999–2001*, Washington, D.C.: Medicare Payment Advisory Commission, August 2003.
- DTF—See New York State Department of Taxation and Finance.
- Dunn, Abe, “Health Insurance and the Demand for Medical Care: Instrumental Variable Estimates Using Health Insurer Claims Data,” *Journal of Health Economics*, Vol. 48, No. C, 2016, pp. 74–88.
- Dunn, Abe, and Adam Hale Shapiro, *Physician Market Power and Medical-Care Expenditures*, Washington, D.C.: U.S. Bureau of Economic Analysis, April 26, 2012.
- Eiken, Steve, Kate Sredl, Brian Burwell, and Rebecca Woodward, *Medicaid Expenditures for Long-Term Service and Supports (LTSS) in FY 2015*, Bethesda, Md.: Truven Health Analytics, April 14, 2017. As of June 27, 2018:
<https://www.medicaid.gov/medicaid/ltss/downloads/reports-and-evaluations/ltssexpendituresffy2015final.pdf>
- Ellis, Randall P., Bruno Martins, and Wenjia Zhu, “Health Care Elasticities by Type of Service,” *Journal of Health Economics*, Vol. 55, No. C, 2017, pp. 232–243.
- Epstein, Arnold, Colin B. Begg, and Barbara J. McNeil, “The Use of Ambulatory Testing in Prepaid and Fee-for-Service Group Practices,” *New England Journal of Medicine*, Vol. 314, April 24, 1986, pp. 1089–1094.
- Escarce, Jose J., Daniel Polsky, Gregory D. Wozniak, and Phillip R. Kletke, “HMO Growth and the Geographical Redistribution of Generalist and Specialist Physicians, 1987–1997,” *Health Services Research*, Vol. 35, No. 4, 2000, pp. 825–848.
- Federal Bureau of Investigation, *Financial Crimes Report 2010–2011*, Washington, D.C.: U.S. Department of Justice, 2011. As of June 27, 2018:
<https://www.fbi.gov/stats-services/publications/financial-crimes-report-2010-2011>
- Feenberg, Daniel, and Elisabeth Coutts, “An Introduction to the TAXSIM Model,” *Journal of Policy Analysis and Management*, Vol. 12, No. 1, 1993, pp. 189–194. As of June 27, 2018:
<http://users.nber.org/~taxsim/feenberg-coutts.pdf>
- Feenberg, Daniel R. and James M. Poterba, “Income Inequality and the Incomes of Very High-Income Tax Payers: Evidence from Tax Returns,” in James M. Poterba, ed., *Tax Policy and the Economy*, Vol. 7, Cambridge and London: MIT Press, 1993, pp. 145–177.

- Finkelstein, Amy, Sarah Taubman, Bill Wright, Mira Bernstein, Jonathan Gruber, Joseph P. Newhouse, Heidi Allen, Katherine Baicker, and the Oregon Health Study Group, “The Oregon Health Insurance Experiment: Evidence from the First Year,” *Quarterly Journal of Economics*, Vol. 127, No. 3, August 2012, pp. 1057–1106, doi:10.1093/qje/qjs020.
- Friedman, Gerald, *Economic Analysis of the New York Health Act*, Amherst: University of Massachusetts at Amherst, Department of Economics, April 2015. As of June 27, 2018: http://www.infoshare.org/main/Economic_Analysis_New_York_Health_Act_-_GFriedman_-_April_2015.pdf
- , “United States Can Afford Single Payer Health Care Program,” memorandum to Warren Gunnels, policy director to Senator Bernie Sanders, University of Massachusetts at Amherst, January 17, 2016. As of June 27, 2018: <http://berniesanders.com/wp-content/uploads/2016/01/friedman-memo-1.pdf>
- Gaffney, Adam, David U. Himmelstein, Steffie Woolhandler, Marcia Angell, et al., *Beyond the Affordable Care Act: A Physicians’ Proposal for Single-Payer Health Care Reform*, Chicago, Ill.: Physicians for a National Health Program, 2016. As of June 27, 2018: http://www.pnhp.org/beyond_aca/Physicians_Proposal.pdf
- Gagnon, Marc-Andre, and Sidney Wolfe, *Mirror, Mirror on the Wall: Medicare Part D Pays Needlessly High Brand-Name Drug Prices Compared with Other OECD Countries and with U.S. Government Programs*, July 23, 2015. As of June 27, 2018: <https://carleton.ca/sppa/wp-content/uploads/Mirror-Mirror-Medicare-Part-D-Released.pdf>
- Ginsburg, Paul B., “Wide Variation in Hospital and Physician Payment Rates Evidence of Provider Market Power,” *Research Brief*, Vol. 16, 2010, pp. 1–11.
- Golden Gate Restaurant Association v. City and County of San Francisco, 546 F.3d 639 (9th Cir. 2008). As of June 27, 2018: <https://www.law.berkeley.edu/golden-gate-restaurant-association-v-city-and-county-of-san-francisco-546-f-3d-639-9th-cir/>
- Goldman, D. P., J. L. Buchanan, and E. B. Keeler, “Simulating the Impact of Medical Savings Accounts on Small Business,” *Health Services Research*, Vol. 35, No. 1, 2000, pp. 53–75.
- Goldstein, G. S., and Mark V. Pauly, “Group Health Insurance as a Local Public Good,” in Richard N. Rosett, ed., *The Role of Health Insurance in the Health Services Sector*, New York: National Bureau of Economic Research, 1976, pp. 73–114.
- Goodman, Lucas, “The Effect of the Affordable Care Act Medicaid Expansion on Migration,” *Journal of Policy Analysis and Management*, Vol. 36, No. 1, Winter 2016, pp. 211–238, doi:10.1002/pam.21952.
- Goolsbee, Austan, “What Happens When You Tax the Rich? Evidence from Executive Compensation,” *Journal of Political Economy*, Vol. 108, No. 2, 2000, pp. 352–378.

- Government Accountability Office, *Prescription Drugs: Comparison of DOD, Medicaid, and Medicare Part D Retail Reimbursement Prices*, Washington, D.C., June 2014. As of June 27, 2018:
<https://www.gao.gov/assets/670/664521.pdf>
- Hadley, Jack, and James Reschovsky, “Medicare Fees and Physicians’ Medicare Service Volume: Beneficiaries Treated and Services per Beneficiary,” *International Journal of Health Care Finance and Economics*, Vol. 6, No. 2, June 2006, pp. 131–150.
- Hall, Keith, director, Congressional Budget Office, “Re: Establishing a Medicaid Block Grant,” memorandum to Diane Black, chairman, Committee on the Budget, March 17, 2017. As of June 27, 2018:
<https://www.cbo.gov/system/files/115th-congress-2017-2018/reports/52510-medicaidblockgrant.pdf>
- Hamel, Liz, Michelle M. Doty, Mira Norton, Jamie Ryan, Mollyann Brodie, Melinda K. Abrams, Rose Kleiman, and Anne-Marie J. Audet, *Experiences and Attitudes of Primary Care Providers Under the First Year of ACA Coverage Expansion: Findings from the Kaiser Family Foundation/Commonwealth Fund 2015 National Survey of Primary Care Providers*, New York: Commonwealth Fund, June 18, 2015. As of June 27, 2018:
<http://www.commonwealthfund.org/publications/issue-briefs/2015/jun/primary-care-providers-first-year-aca>
- Hammermesh, Daniel S., “Do Labor Costs Affect Companies’ Demand for Labor? The Effect of Overtime, Payroll Taxes, and Labor Policies on Costs and Companies’ Product Output and Countries’ GDP.IZA,” World of Labor Issue Brief, 2014. As of July 6, 2018:
<https://wol.iza.org/articles/do-labor-costs-affect-companies-demand-for-labor/long>
- Hargan, Eric, acting secretary, Department of Health and Human Services, “Payments to Issuers for Cost-Sharing Reductions (CSRs),” memorandum to Seema Verma, administrator, Centers for Medicare and Medicaid Services, October 12, 2017. As of June 27, 2018:
<https://www.hhs.gov/sites/default/files/csr-payment-memo.pdf>
- He, Daifeng, and Jennifer M. Mellor, “Hospital Volume Responses to Medicare’s Outpatient Prospective Payment System: Evidence from Florida,” *Journal of Health Economics*, Vol. 31, 2012, pp. 730–743.
- Healthcare Finance, “Employer Mandate Dodged ERISA, What About Single Payer?” July 1, 2013. As of May 18, 2018:
<http://www.healthcarefinancenews.com/news/employer-mandate-dodged-erisa-what-about-single-payer>

- Health Data New York, “Nursing Home Weekly Bed Census: Beginning 2009,” dataset, 2009. As of June 27, 2018:
<https://health.data.ny.gov/Health/Nursing-Home-Weekly-Bed-Census-Beginning-2009/uhyy-xp9s>
- Helgerson, Jason A., “Medicaid Drug Cap Webinar,” briefing slides, August 31, 2017. As of June 27, 2018:
https://www.health.ny.gov/health_care/medicaid/regulations/global_cap/docs/2017-8-29_medicaid_drug_cap.pdf
- HHS—*See* Department of Health and Human Services.
- HHS OIG—*See* Department of Health and Human Services, Office of the Inspector General.
- Hill, Ian, and Sarah Benatar, *Congressionally Mandated Evaluation of the Children’s Health Insurance Program: A Case Study of New York’s Child Health Plus Program*, Ann Arbor, Mich.: Mathematica Policy Research Center, September 2012.
- Himmelstein, David U., Miraya Jun, Reinhard Busse, Karine Chevreul, Alexander Geissler, Patrick Jeurissen, Sarah Thomson, Marie-Amelie Vinet, and Steffie Woolhandler, “A Comparison of Hospital Administrative Costs in Eight Nations: US Costs Exceed All Others by Far,” *Health Affairs*, Vol. 33, No. 9, 2014, pp. 1589–1594.
- Holahan, John, Matthew Buettgens, Lisa Clemans-Cope, Melissa M. Favreault, Linda J. Blumberg, and Siyabonga Ndwandwe, *The Sanders Single-Payer Health Care Plan: The Effect on National Health Expenditures and Federal and Private Spending*, Washington, D.C.: Urban Institute, May 2016. As of June 27, 2018:
<https://www.urban.org/research/publication/sanders-single-payer-health-care-plan-effect-national-health-expenditures-and-federal-and-private-spending>
- Hurd, Michael D., Paco Martorell, Adeline Delavande, Kathleen L. Mullen, and Kenneth M. Langa, “Monetary Costs of Dementia in the United States,” *New England Journal of Medicine*, Vol. 368, 2013, pp. 1326–1334.
- Hussey, Peter S., Jodi L. Liu, and Chapin White, “The Medicare Access and CHIP Reauthorization Act: Effects on Medicare Payment Policy and Spending,” *Health Affairs*, Vol. 36, No. 4, 2017, pp. 697–705.
- Internal Revenue Service, “SOI Tax Stats—Historic Table 2,” 2015. As of June 27, 2018:
<https://www.irs.gov/statistics/soi-tax-stats-historic-table-2>
- IRS—*See* Internal Revenue Service.

- Jacobson, Gretchen, Tricia Neuman, and Anthony Damico, *Medicare Spending and Use of Medical Services for Beneficiaries in Nursing Homes and Other Long-Term Care Facilities: A Potential for Achieving Medicare Savings and Improving the Quality of Care*, Menlo Park, Calif.: Kaiser Family Foundation, October 2010. As of June 27, 2018: <https://kaiserfamilyfoundation.files.wordpress.com/2013/01/8109.pdf>
- Jiwani, Aliya, David Himmelstein, Steffie Woolhandler, and James G. Kahn, “Billing and Insurance-Related Administrative Costs in United States’ Health Care: Synthesis of Micro-Costing Evidence,” *Health Services Research*, Vol. 14, 2014, doi:10.1186/s12913-014-0556-7.
- Joint Committee on Taxation, *Estimates of Federal Tax Expenditures for Fiscal Years 2017–2021*, Washington, D.C.: Congress of the United States, JCS-34-18, May 25, 2018. As of June 27, 2018: <https://www.jct.gov/publications.html?func=startdown&id=5095>
- Kaiser Family Foundation, “Health Insurance Coverage of the Total Population: 2016,” n.d. As of June 27, 2018: <https://www.kff.org/other/state-indicator/total-population>
- , *Five Key Questions and Answers About Section 1115 Medicaid Demonstration Waivers*, Washington, D.C., June 2011. As of June 27, 2018: <https://kaiserfamilyfoundation.files.wordpress.com/2013/01/8196.pdf>
- , “Where Are States Today? Medicaid and CHIP Eligibility Levels for Children, Pregnant Women, and Adults,” fact sheet, Menlo Park, Calif., March 2018. As of June 27, 2018: <https://www.kff.org/medicaid/fact-sheet/where-are-states-today-medicaid-and-chip/>
- Kamal, Rabah, Ashley Semanskee, Michelle Long, Gary Claxton, and Larry Levitt, *How the Loss of Cost-Sharing Subsidy Payments Is Affecting 2018 Premiums*, Menlo Park, Calif.: Kaiser Family Foundation, October 2017. As of June 27, 2018: <https://www.kff.org/health-reform/issue-brief/how-the-loss-of-cost-sharing-subsidy-payments-is-affecting-2018-premiums/>
- Keeler, Emmett B., and John E. Rolph, “The Demand for Episodes of Treatment in the Health Insurance Experiment,” *Journal of Health Economics*, Vol. 7, No. 4, 1988, pp. 337–367.
- Keith, Katie, “New York and Minnesota Sue over Loss of Basic Health Program Funding,” *Health Affairs Blog*, January 27, 2018. As of June 27, 2018: <https://www.healthaffairs.org/doi/10.1377/hblog20180127.691558/full/>
- KFF—See Kaiser Family Foundation.

- Kleven, Henrik Jacobsen, Camille Landais, and Emmanuel Saez, “Taxation and International Migration of Superstars: Evidence from the European Football Market,” *American Economic Review*, Vol. 103, No. 5, 2013, pp. 1892–1924, doi:10.1257/aer.103.5.1892.
- Kolstad, Jonathan T., and Amanda E. Kowalski, “Mandate-Based Health Reform and the Labor Market: Evidence from the Massachusetts Reform,” *Journal of Health Economics*, Vol. 47, 2016, pp. 81–106, doi:10.1016/j.jhealeco.2016.01.010.
- Lawless, Martina, Daire McCoy, Edgar L. W. Morgenroth, and Conor M. O’Toole, “Corporate Tax and Location Choice for Multinational Firms,” *Journal of Applied Economics*, Vol. 50, No. 26, 2018, pp. 2920–2931, doi:10.1080/00036846.2017.1412078.
- Levitt, Larry, “Single-Payer Health Care: Opportunities and Vulnerabilities,” *JAMA Forum*, March 14, 2018. As of June 27, 2018: <https://newsatjama.jama.com/2018/03/14/jama-forum-single-payer-health-care-opportunities-and-vulnerabilities/>
- Lucia, Kevin, Justin Giovannelli, Sabrina Corlette, JoAnn Volk, Dania Palanker, Maanasa Kona, and Emily Curran, *State Regulation of Coverage Options Outside of the Affordable Care Act: Limiting the Risk to the Individual Market*, New York: Commonwealth Fund, March 2018. As of June 27, 2018: <http://www.commonwealthfund.org/publications/fund-reports/2018/mar/state-regulation-coverage-options-outside-aca#/%2320>
- Manatt Health, *Understanding the Rules: Federal Legal Considerations for State-Based Approaches to Expand Coverage in California*, Oakland, Calif.: California Health Care Foundation, February 2018. As of June 27, 2018: <https://www.chcf.org/publication/understanding-the-rules-federal-legal-considerations-for-state-based-approaches-to-expand-coverage-in-california/>
- Mark Farrah Associates, “A Brief Look at the Turbulent Individual Health Insurance Market,” July 19, 2017. As of June 27, 2018: <http://www.markfarrah.com/healthcare-business-strategy/A-Brief-Look-at-the-Turbulent-Individual-Health-Insurance-Market.aspx>
- Marquis, M. Susan, and Stephen H. Long, “Worker Demand for Health Insurance in the Non-Group Market,” *Journal of Health Economics*, Vol. 14, No. 1, 1995, pp. 47–63.
- McDonough, John E., “The Demise of Vermont’s Single-Payer Plan,” *New England Journal of Medicine*, Vol. 372, No. 17, 2015, pp. 1584–1585, doi:10.1056/NEJMp1501050.
- Medicaid and CHIP Learning Collaborative, “Medicaid/CHIP Renewals: State Practices, Lessons Learned & Opportunities,” August 13, 2015.

- Medicare Payment Advisory Commission, *Report to the Congress: Medicare Payment Policy*, Washington, D.C., March 2009.
- , *Report to the Congress: Medicare Payment Policy*, Washington, D.C., March 2012.
- , *Report to the Congress: Medicare Payment Policy*, Washington, D.C., March 2016.
- , *Report to the Congress: Medicare Payment Policy*, Washington, D.C., March 2018.
- MedPAC—*See* Medicare Payment Advisory Commission.
- Monheit, Alan C., and Jessica Primoff Vistnes, “Health Insurance Availability at the Workplace: How Important Are Worker Preferences?” *Journal of Human Resources*, Vol. 34, No. 4, 1999, pp. 770–785.
- Moretti, Enrico, and Daniel J. Wilson, “The Effect of State Taxes on the Geographical Location of Top Earners: Evidence from Star Scientists,” *American Economic Review*, Vol. 107, No. 7, 2017, pp. 1858–1903, doi:10.1257/aer.20150508.
- Morra, Dante, Sean Nicholson, Wendy Levinson, David N. Gans, Terry Hammons, and Lawrence P. Casalino, “US Physician Practices Versus Canadians: Spending Nearly Four Times as Much Money Interacting with Payers,” *Health Affairs*, Vol. 30, No. 8, 2011, pp. 1443–1450.
- Musgrave, Richard M., *The Theory of Public Finance*, New York: McGraw Hill, 1959.
- NAIC—*See* National Association of Insurance Commissioners.
- National Association of Insurance Commissioners, “New York Supplement Filings,” 2017.
- Newhouse, Joseph P., and Insurance Experiment Group, *Free for All? Lessons from the RAND Health Insurance Experiment*, Cambridge, Mass.: Harvard University Press, 1993.
- New York State, “New York State’s Minimum Wage,” n.d. As of June 27, 2018:
<https://www.ny.gov/programs/new-york-states-minimum-wage>
- New York State Assembly, Bill No. A04738A, 2017–2018 Reg. Sess.
- New York State Assembly, Bill No. A05062A, 2015–2016 Reg. Sess.
- New York State Department of Health, *Annual Report to the Governor and Legislature: Medicaid Preferred Drug Program, State Fiscal Year April 1, 2014–March 31, 2015*, 2015. As of June 27, 2018:
https://www.health.ny.gov/health_care/medicaid/program/docs/annual_report_preferred_drugs_2014-15.pdf
- , “Medicaid Managed Care Enrollment Reports,” last updated June 2018. As of June 27, 2018:
https://www.health.ny.gov/health_care/managed_care/reports/enrollment/monthly/
- New York State Department of Taxation and Finance, “Fiscal Year Tax Collections: Annual Statistical Report of New York State Tax Collections,” last updated August 29, 2017. As of June 27, 2018:
https://www.tax.ny.gov/research/stats/statistics/stat_fy_collections.htm

- New York State Division of the Budget, “Statewide Summary Information,” 2015. As of June 27, 2018:
https://www.budget.ny.gov/pubs/archive/fy1516archive/eBudget1516/agencyPresentations/pdf/Agency_StatewideSummaryInformation.pdf
- , *FY 2019 Economic and Revenue Outlook*, 2018a. As of June 27, 2018:
<https://www.budget.ny.gov/pubs/archive/fy19/exec/fy19ero/economicRevenueOutlook.pdf>
- , *FY 2019 Enacted Budget Financial Plan*, May 2018b. As of June 27, 2018:
<https://www.budget.ny.gov/pubs/archive/fy19/enac/fy19enacFP.pdf>
- New York State Medicaid Fraud Control Unit, *2008 Annual Report*, New York State Office of the Attorney General (OAG), 2008. As of May 16, 2018:
https://ag.ny.gov/sites/default/files/pdfs/bureaus/medicaid_fraud/MFCU%202008%20annual%20report%20final.pdf
- New York State Office of the Medicaid Inspector General, *2016 Annual Report*, Albany, N.Y., 2016. As of June 27, 2018:
<https://omig.ny.gov/information/annual-reports>
- New York State of Health, “Attachment H—EP Benefits and Cost-Sharing Chart,” 2017a. As of June 27, 2018:
<https://info.nystateofhealth.ny.gov/sites/default/files/Attachment%20H%20-%20EP%20Benefits%20and%20Cost-Sharing.pdf>
- , *2017 Open Enrollment Report*, May 2017b. As of June 27, 2018:
<https://info.nystateofhealth.ny.gov/2017openenrollmentreport>
- , *2018 Open Enrollment Report*, May 2018. As of June 27, 2018:
<https://info.nystateofhealth.ny.gov/2018openenrollmentreport>
- Nguyen, Nguyen X., Richard G. Kronick, and Steven H. Sheingold, “Comparing Physician Payment Rates Between Medicare and Private Payers in 2009,” presentation at Academy Health, Washington, D.C., June 2013.
- Norton, Stephen, and Stephen Zuckerman, “Trends in Medicaid Physician Fees, 1993–1998,” *Health Affairs*, Vol. 19, No. 4, July/August 2000, pp. 222–232.
- NYSDOB—*See* New York State Division of the Budget.
- NYSDOH—*See* New York State Department of Health.
- NYSOH—*See* New York State of Health.
- OAG—*See* New York State Office of the Attorney General.
- Oates, Wallace E., *Fiscal Federalism*, New York: Harcourt Brace Jovanovich, 1972.
- , “An Essay on Fiscal Federalism,” *Journal of Economic Literature*, Vol. 37, No. 3, 1999, pp. 1120–1149.

- Office of Management and Budget, “Historical Tables,” 2017. As of June 27, 2018:
<https://www.whitehouse.gov/omb/historical-tables/>
- Office of the New York State Comptroller, “Open Book New York,” 2017a. As of June 27, 2018:
<http://wwe2.osc.state.ny.us/transparency/spending/spndMain.cfm>
- , *Administrative Costs Used in Premium Rate Setting of Mainstream Managed Care Organizations*, Division of State Government Accountability, 2015-S-76, September 2017b. As of June 27, 2018:
<https://osc.state.ny.us/audits/allaudits/093017/15s76.pdf>
- OMB—*See* Office of Management and Budget.
- OMIG—*See* New York State Office of the Medicaid Inspector General.
- Pate, Randy, director, Center for Consumer Information and Insurance Oversight, deputy administrator, Centers for Medicare and Medicaid Services, letter to Doug Ommen, Iowa Insurance Division, October 19, 2017. As of June 27, 2018:
<https://www.cms.gov/CCIIO/Programs-and-Initiatives/State-Innovation-Waivers/Downloads/IA-Departments-Letter.pdf>
- Pauly, Mark V., “Taxation, Health Insurance, and Market Failure in the Medical Economy,” *Journal of Economic Literature*, Vol. 24, No. 2, 1986, pp. 629–675.
- , *Health Benefits at Work: An Economic and Political Analysis of Employment-Based Health Insurance*, Ann Arbor: University of Michigan Press, 1999.
- Piketty, Thomas, Emmanuel Saez, and Stafanie Stantcheva, “Optimal Taxation of Top Incomes: A Tale of Three Elasticities,” *American Economic Journal: Economic Policy*, Vol. 6, No. 1, 2014, pp. 230–271.
- Pollack, Harold, “Medicare for All—If It Were Politically Possible—Would Necessarily Replicate the Defects of Our Current System,” *Journal of Health Politics, Policy and Law*, Vol. 40, No. 4, 2015, pp. 921–929, doi:10.1215/03616878-3150172.
- Polsky, Daniel, Phillip R. Kletke, Gregory D. Wozniak, and Jose J. Escarce, “HMO Penetration and the Geographic Mobility of Practicing Physicians,” *Journal of Health Economics*, Vol. 19, No. 5, September 2000, pp. 793–809, doi:10.1016/S0167-6296(00)00053-9.
- Pozen, Alexis, and David M. Cutler, “Medical Spending Differences in the United States and Canada: The Role of Prices, Procedures, and Administrative Expenses,” *Inquiry: Journal of Health Care Organization, Provision, and Financing*, Vol. 47, No. 2, 2010, pp. 124–134, doi:10.5034/inquiryjrnl_47.02.124.

- RAND Hospital Data, “Calendar Year, State-Level Hospital Data, with Errors Corrected, v. 2018_06_01,” 2018. As of June 27, 2018:
<https://hospitaldata.rand.org/>
- Roehrig, Charles, “Rebates, Coupons, PBMs, and the Cost of the Prescription Drug Benefit,” *Health Affairs Blog*, April 26, 2018. As of June 27, 2018:
<https://www.healthaffairs.org/doi/10.1377/hblog20180424.17957/full/>
- Roy, Avik S. A., *The Price of Single Payer: A Fiscal and Economic Analysis of the New York Health Act*, Austin, Tex.: Foundation for Research on Equal Opportunity, March 2017. As of June 27, 2018:
<https://drive.google.com/file/d/0B4VpAFwBu2fUZ25vOFZnLXVZVKE/view>
- Saez, Emmanuel, “Reported Incomes and Marginal Tax Rates, 1960–2000: Evidence and Policy Implications,” in James M. Poterba, ed., *Tax Policy and the Economy*, Vol. 18, Cambridge and London: MIT Press, 2004, pp. 117–174.
- Saez, Emmanuel, Joel Slemrod, and Seth H. Giertz, “The Elasticity of Taxable Income with Respect to Marginal Tax Rates: A Critical Review,” *Journal of Economic Literature*, Vol. 50, No. 1, 2012, pp. 3–50.
- Schwartz, Aaron L., and Benjamin D. Sommers, “Moving for Medicaid? Recent Eligibility Expansions Did Not Induce Migration from Other States,” *Health Affairs*, Vol. 33, No. 1, 2014, pp. 88–94, doi:10.1377/hlthaff.2013.0910.
- Serrato, Juan Carlos Suarez, and Owen Zidar, “Who Benefits from State Corporate Tax Cuts? A Local Labor Markets Approach with Heterogeneous Firms,” *American Economic Review*, Vol. 106, No. 9, 2016, pp. 2582–2624, doi:10.1257/aer.20141702.
- Shakin, Joshua, “Tax Expenditures,” *CBO Blog*, March 17, 2017. As of June 4, 2018:
<https://www.cbo.gov/publication/52493>
- Shumlin, Peter, *State of Vermont, Green Mountain Care: A Comprehensive Model for Building Vermont’s Universal Health Care System*, Montpelier, Vt.: Office of the Governor of the State of Vermont, December 30, 2014.
- Sommers, Benjamin D., “Who Really Pays for Health Insurance? The Incidence of Employer-Provided Health Insurance with Sticky Nominal Wages,” *International Journal of Health Care Finance and Economics*, Vol. 5, No. 1, March 2005, pp. 89–118.
- State Operations Budget, S. 7500/A. 9500, 2017–2018 Leg. Sess. (N.Y.). As of June 27, 2018:
<https://www.nysenate.gov/legislation/bills/2017/s7500/>
- Takashima, Edward, “RILA v. Fielder: Preempting Pay-or-Play,” *Berkeley Journal of Employment and Labor Law*, Vol. 28, No. 2, 2007, pp. 617–624, doi:10.15779/Z38R048.

- Thorpe, Kenneth E., *An Analysis of Senator Sanders's Single Payer Plan*, January 27, 2016. As of June 27, 2018:
<http://www.scribd.com/doc/296831690/Kenneth-Thorpe-s-analysis-of-Bernie-Sanders-s-single-payer-proposal>
- Trish, Erin, *Variation in Provider Payment by Public and Private Payers*, California Assembly Select Committee on Health Care Delivery Systems and Universal Coverage, January 17, 2018.
- United States Census Bureau, "American Community Survey (ACS)," n.d.a. As of May 18, 2018:
<https://www.census.gov/programs-surveys/acs/>
- , "Current Population Survey (CPS)," n.d.b. As of May 18, 2018:
<https://www.census.gov/programs-surveys/cps.html>
- , "Economic Census," 2012 data, September 15, 2016a. As of June 27, 2018:
<https://www.census.gov/data/developers/data-sets/economic-census.html>
- , "2014 SUSB Annual Data Tables by Establishment Industry," December 2016b. As of June 20, 2018:
<https://www.census.gov/data/tables/2014/econ/susb/2014-susb-annual.html>
- White, Chapin, Jodi L. Liu, Mikhail Zaydman, Sarah A. Nowak, and Peter S. Hussey, *The RAND Health Care Payment and Delivery Simulation Model (PADSIM): Concepts, Methods, and Examples*, Santa Monica, Calif.: RAND Corporation, RR-1428-RC, 2016. As of June 27, 2018:
https://www.rand.org/pubs/research_reports/RR1428.html
- White, Chapin, and Tracy Yee, "When Medicare Cuts Hospital Prices, Seniors Use Less Inpatient Care," *Health Affairs*, Vol. 32, No. 10, October 2013, pp. 1789–1795.
- Woolhandler, Steffie, Terry Campbell, and David U. Himmelstein, "Costs of Health Care Administration in the United States and Canada," *New England Journal of Medicine*, Vol. 349, No. 8, 2003, pp. 768–777, doi:10.1056/NEJMsa022033.
- Young, Cristobal, and Charles Varner, "Millionaire Migration and State Taxation of Top Incomes: Evidence from a Natural Experiment," *National Tax Journal*, Vol. 64, No. 2, June 2011, pp. 255–284.
- Zuckerman, Stephen, and Dana Goin, *How Much Will Medicaid Physician Fees for Primary Care Rise in 2013? Evidence from a 2012 Survey of Medicaid Physician Fees*, Washington, D.C.: Kaiser Commission on Medicaid and the Uninsured, December 2012.

Zuckerman, Stephen, Joshua McFeeters, Peter Cunningham, and Len Nichols, “Changes in Medicaid Physician Fees, 1998–2003: Implications for Physician Participation,” *Health Affairs*, Web Exclusive, June 23, 2004. As of July 6, 2018:
<https://www.ncbi.nlm.nih.gov/pubmed/15451955>

Zuckerman, Stephen, Laura Skopec, and Marni Epstein, *Medicaid Physician Fees After the ACA Primary Care Fee Bump: 19 States Continue the Affordable Care Act’s Temporary Policy Change*, Washington, D.C.: Urban Institute, Health Policy Center, March 2017.

Zuckerman, Stephen, Aimee F. Williams, and Karen E. Stockley, “Trends in Medicaid Physician Fees, 2003–2008,” *Health Affairs*, Vol. 28, No. 3, May/June 2009, pp. w251–w519.