The Impact of Medicare for America on the Employer Market and Health Spending

Technical Appendix

Prepared For:
Partnership for America's Health Care Future

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About KNG Health Consulting, LLC

KNG Health Consulting, LLC, is a health economics and policy consulting company assisting clients across all sectors of the healthcare industry. The company's work focuses on two main practice areas: Healthcare Reform and Payment Innovation (HRPI); and Evaluation and Health Economics (EHE). In the HRPI practice, KNG Health's experts work with our clients to estimate the effects of a wide range of healthcare reform and payment innovation policies, ranging from modeling innovative state and federal proposals to reduce health insurance premiums to facilitating learning systems for providers on alternative payment models. In the EHE practice, KNG Health's experts conduct studies on the efficiency, effectiveness, and value of medical interventions using big and small data, applying careful research designs, and translating findings into actionable results.

KNG Health is a small, woman- and minority-owned business located in the Washington, DC metropolitan area.

Contents

I.   Overview

This technical appendix describes KNG Health Consulting's model and assumptions for developing estimates of the impact of the Medicare for America proposal on employer-sponsored insurance (ESI). Since Medicare for America (MFA) would eliminate private insurance coverage options except for ESI, we focus on firms' decisions on whether to offer qualified coverage to their employees ("offer decision"). We simulate the effects of MFA on employer premiums, offer decisions, and enrollee take-up. We model key decision factors under a scenario where the firm offers coverage and under a scenario where the firm does not offer coverage. We allow firms that offer ESI in the baseline to drop coverage and allow firms that do not offer ESI in the baseline to offer coverage to its employees under MFA.

We posit that firms will offer coverage under MFA if doing so would result in higher joint welfare to the firm and its employees. We define a joint welfare or utility function for each firm that incorporates dollar-denominated factors that relate to employer and employees, including paid premiums, subsidies to purchase health insurance, tax implications of ESI, out-of-pocket health spending, and applicable penalties for firms that do not offer qualified coverage under MFA. Under our model, firms compare the cost of offering coverage to the cost of not offering coverage.[a] We assume that a firm will offer ESI under MFA if the cost of offering coverage is not significantly higher than the cost of not offering coverage, relative to the firm's total annual payroll. We use the model to project firms' coverage decisions and ESI enrollment under Medicare for America.

Our model incorporates many features of the MFA (Table A1). For each of these features, we developed assumptions regarding how the feature would be implemented and, in some cases, the potential impact. Where available, we developed assumptions based on literature, Congressional Budget Office (CBO), or other documented sources

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[a] Under the utility or welfare nomenclature, the cost of offering coverage or not offering coverage is the disutility or loss in welfare of offering or not offering. Throughout this report, we refer to this function as the firm's cost (of offering coverage) function.

Figure A1. MFA Policy Elements that were modeled in the KNG-HRM

Policy Element	Modeling Assumptions
Populations automatically enrolled in MFA	- The following populations would be automatically enrolled in MFA beginning in 2023: Uninsured people, non-group market enrollees, Medicare enrollees who are not also eligible for Medicaid; and individuals born in 2023 or later. - Medicaid enrollees would be phased-in to MFA in the years between 2024 and 2027. - Dual-eligible enrollees would be automatically enrolled in MFA beginning in 2025.
Ineligible populations	- Undocumented immigrants - Incarcerated populations
MFA Premiums	National per enrollee health insurance premium that covers 100% of benefit spending for enrollees and associated administrative costs
MFA Premium Subsidies	- MFA subsidies are set so that the cost of the family's MFA premium does not exceed a specified percentage of the families modified adjusted gross income. - If the family earns less than 200% of the Federal Poverty Level (FPL), this percentage is set at 0%. - If the family earns more than 600% of the FPL, this percentage is set at 6%. - For families with incomes between 200% and 600% of the FPL, the percentage increases linearly.
MFA Provider Prices	- Hospital inpatient and outpatient payment rates are set at 110% of the higher of Medicare or Medicaid payment rates within the enrollee's state of residence - Payments for primary care and behavioral health services are set 30% higher than Medicare rates - Hospital outpatient rates are reduced to create payment site-neutrality with physician offices.
Cost-Sharing	- MFA would have no cost-sharing for families with incomes below 200% of the Federal Poverty level. - The law specifies precise cost-sharing rules for higher-income families which we estimate would translate to an average plan actuarial value of 90%.
Benefit Design	- MFA would offer Long Term Services & Supports (LTSS) coverage. - The MFA plan would not have prior authorization.
Qualified Employer Coverage	- Qualified employer plans would need to have a minimum actuarial value of 80% - The employer would need to cover at least 70% of the cost of the premium for the worker and dependents. - Employer plans would not be allowed to require prior authorization.
Employer Penalties	- Large employers choosing not to offer health coverage would be required to pay a penalty of 8% of their annual payroll. - A large employer is defined as an employer with more than 100 workers or a payroll of more than $2,000,000. - Employers offering qualified coverage would have to pay the employer share of the premium subsidy amount into MFA for each worker who opts out of employer coverage in favor of MFA.

We first developed a comprehensive analytic file that includes information on ESI enrollees, firms offering coverage, and characteristics of offered health plans. In creating the analytic file, we begin with our KNG Health Reform Model (KNG-HRM) analytic file, which is based in the American Community Survey (ACS) and includes health status, utilization, and spending information for a large nationally representative sample.[1] We augment this file through four steps:

1. Group workers into synthetic firms by linking employed ACS respondents to respondent companies in the Employer Health Benefits Survey (EHBS).
2. Impute whether a worker has an ESI coverage offer and (if applicable) the characteristics of that offer.
3. Assign families a preferred plan among available options based on patterns observed in the EHBS.
4. Estimate actuarial values (AVs) for each plan using a plan's cost-sharing parameters and Centers for Medicare & Medicaid Services 2020 AV Calculator.

Additional detail on the creation of our analytic file is provided in Section III of this document. We use this file to dynamically simulate health insurance premiums, public subsidies for health insurance premiums, out-of-pocket costs, and financial penalties. These factors drive both employee take-up on ESI plans and employer decisions to offer coverage. Our methodology for implementing this simulation is provided in Section II of this document.

II.   Simulating the Impact of Medicare for America

a.   Calculating ESI Premiums and Employee Take-Up

We distinguish between large group employers and small group employers based on state-specific regulatory thresholds.[2] For large group employers, we define risk pools at the firm-state level. For small group employers, we define risk pools at the state level. Using utilization rates and prices from the KNG-HRM (but modified to reflect specific features of MFA), we calculated total spending for each pool. For large group employers, we allocated spending to health insurance units (HIUs) based on the number of subscribers within the HIU, capped at three. This spending amount was multiplied by the AV corresponding to the HIU's selected plan and inflated by an administrative load. For small group employers, we allocated spending to HIUs based on state-specific age- and tobacco-rating rules.

Following estimates from the literature, we assume an administrative load of 20% for firms with fewer than 25 employees, 13% for firms with fewer than 99 employees, and 8% for firms with 100 or more employees.[3,4] Based on the CMS National Health Expenditure Accounts, we scale total administrative costs to 12% of total premium costs.[5] We partition the premium into an employee and employer share based on the employer subsidy percentage reported by the firm in the EHBS that was linked to an observation in the ACS. We also reduce administrative loads for self-insured firms by 1.3% to account for their exemption from health insurance taxes.[6]

MFA would include several key changes that would affect our calculation of premiums. First, health plans would need to have an AV of at least 80%. We estimate that nearly 40% of workers are enrolled in ESI plans that have an AV below 80%. We increase the AV for these plans, which increases associated premiums. Secondly, MFA prohibits the use of prior authorization. This would further increase spending and premiums. Third, MFA requires that employers contribute at least 70% of the premium cost for both individuals and dependents. This reduces the employee's share of premiums, having a disproportionately large impact for families.

In our model, the decision to participate in an employer plan is made at the HIU level. We assume that, if offered, workers take-up ESI coverage unless that coverage is unaffordable. We define ESI coverage as being affordable if the premium is less than 9.5% of the family's modified adjusted gross income ("affordability standard"). This threshold is similar to how affordability is defined for the highest income bracket in the ACA Marketplaces.[b] For families with incomes below 200% of the Federal Poverty Level, we use a lower income threshold of 4%, which results in approximately half of this population enrolling in the public plan. These families would pay no premiums or cost-sharing under MFA, so would likely enroll in the program at notably higher rates. We simulate individual coverage decisions using this affordability threshold prior to simulating employer decisions.

b. Calculating Medicare for America Premiums

MFA premiums are based on the average health expenditures for those who do not have access or choose to enroll in ESI. This includes those who are currently enrolled in Medicare, Medicaid (as phased in), the non-group market, and the uninsured. As part of the KNG-HRM, we have population and health spending estimates for these populations. We adjust spending to account for MFA price differentials and higher utilization under MFA. We apply utilization adjustments to account for four factors:

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[b] The Urban Institute has previously used this same threshold in their Dynamic Simulation of Income Model (DYNASIM).

1. **Gains in coverage.** Based on findings from the Oregon Health Insurance Experiment, for previously uninsured individuals gaining coverage through MFA, we increase inpatient utilization by 30%, emergency room utilization by 68%, physician visits by 50%, and prescription drug usage by 15%.[7]

2. **Lower cost-sharing.** We assume MFA would have an AV of 90% which is generally higher than most existing coverage options. We use the -0.2 health care demand elasticity from the RAND Health Insurance Experiment to adjust utilization.[8] This translates to, on average, an 8% increase in utilization for those coming from ESI, a 13% increase for those coming from the Marketplace plans, and a 15% increase for those coming from off-Marketplace non-group market plans. A utilization adjustment is also applied for a subset of those continuing employer coverage to account for some employer plans having to improve generosity to meet the new minimum AV standards.

3. **New LTSS benefit.** The Urban Institute has previously estimated that expanding coverage of LTSS would increase health spending in 2017 by $212.1 billion, which was approximately 7% of personal health care spending.[9] Based on this analysis, we inflated health spending for MFA enrollees by 7% to account for higher LTSS utilization rates.

4. **Elimination of Prior Authorization.** MFA enrollees would not be subject to prior authorization. We assume MFA enrollees who were previously subject to prior authorization would experience an additional 2.5% increase in utilization.

c. Simulating Employer Choice under Medicare for America

We use a firm-based cost model to identify firms likely to drop coverage. The measured cost under each scenario equally weights costs incurred by both employers, employees, and employee dependents.[c] We calculate a cost under both a scenario in which the firm offers coverage and a scenario in which coverage is dropped. The firm's cost function includes the sum of four components: (1) premiums for workers and dependents, net of government subsidies; (2) out of pocket health costs; (3) financial penalties; and (4) other costs. A description of these cost components is provided in Figure A2. We assume firms drop coverage if the savings from dropping coverage exceed a threshold expressed as a percentage of payroll. We also allow firms that previously did not offer coverage to offer coverage if the incremental cost of doing so does not exceed cost threshold.

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[c] We avoid double-counting dependent costs by assigning dependents to a specific firm where the family is most likely to obtain health insurance coverage.

Figure A2. Description of components in firm cost model

Cost Component	If the employer maintains coverage…	If the employer drops coverage…
Premiums for workers and dependents, net of subsidy	The sum of: • The employee's and employer's share of ESI premiums for those taking-up ESI coverage, reduced by the enrolling family's marginal tax rate; and • MFA premiums for those opting out of ESI coverage, reduced by the income-based MFA subsidy.	MFA premiums for all workers and dependents, reduced by the income-based MFA subsidy.
Out of Pocket Costs	Out of pocket health costs of the workers and dependents either participating in the ESI plan or receiving coverage through MFA.	Out of pocket health costs for workers and dependents receiving coverage through MFA.
Financial Penalties	The hypothetical employer's share of ESI premiums for those opting out of ESI coverage.	For large firms, eight percent of the firm's annual payroll.
Other Costs	The internal HR administrative burden of offering coverage.	None.

Our calculation of firm costs involves discounting employer premiums by the marginal tax rates of enrolled workers. This adjustment accounts for employer health insurance premiums being tax-deductible and assumes that the employer-share of premiums would be converted to taxable wages if the employer drops coverage. We estimate Federal taxes using the National Bureau of Economic Research web based TAXSIM model.[10]

If a firm drops coverage, we allow families with multiple ESI offers to switch to the other available ESI offer if that coverage meets the affordability standard. We iteratively cycle through individual take-up decisions, employer offer decisions, and premium calculations until an equilibrium is reached.

III. Creating the Analytic File

a. Overview

The KNG-HRM is based in the American Community Survey (ACS), but also relies on a variety of other data sources, including the Behavioral Risk Factor Surveillance System (BRFSS), the Medical Expenditure Panel Survey Household Component (MEPS-HC), and reports from the Health Care

Cost Institute (HCCI). For this analysis, we made use of several additional data sources that provide information on employer health plans. These include the 2017 Employer Health Benefits Survey (EHBS), the 2018 Current Population Survey Annual Social and Economic Supplement (CPS), the 2017 Medical Expenditure Panel Survey Insurance Component (MEPS-IC), and the 2016 Statistics of U.S. Businesses (SUSB). Figure A3 provides additional detail on these data sources and a summary for how they were used.

Figure A3. Data on Businesses and Employer Health Plans Used to Supplement KNG-HRM

Year	Data	Description	Summary of Use
2017	EHBS	Annual national representative survey of employers conducted by the Kaiser Family Foundation (KFF) that collects detailed information on employer health plans.	The EHBS is our primary source for employer characteristics, co-worker resemblances, offer rates, employer premium subsidies, plan types offered, and self-insurance rates.
2018	CPS	The CPS is a monthly household survey conducted by the U.S. Census Bureau. The March CPS includes the Annual Social and Economic Supplement which collects detailed information on income and health insurance status.	We use the CPS to estimate a model for imputing firm size for each employed ACS respondent. While we ultimately use firm size information from EHBS, we use a CPS-based imputation for some preliminary adjustments.
2017	MEPS-IC	The MEPS-IC is a survey administered by the Agency for Healthcare Research and Quality to private and public sector employees. Some of the information collected by MEPS-IC overlaps with data from EHBS, but MEPS-IC is a much larger sample.	We adjust premiums, offer rates, and firm-size distributions to be consistent with data reported in MEPS-IC.
2016	SUSB	The SUSB is an annual series produced by the U.S. Census that provides data on U.S. businesses. The SUSB is based on economic censuses, business surveys, Federal tax records, and other sources.	We use the 2016 SUSB for detailed information on firm size distributions and payroll.

Notes: EHBS = Employer Health Benefits Survey; CPS = Current Population Survey; MEPS-IC = Medical Expenditure Panel Survey – Insurance Component; SUBS = Statistics of US Businesses.

b. Grouping Workers into Firms

We grouped employed ACS respondents into synthetic firms. This allows us to create risk pools that are used to determine premiums for large-group ESI plans. As enrollees in small-group ESI plans are pooled across firms according to state-specific rating rules, exact synthetic firm assignments do not affect risk pooling for these plans. Throughout this document, we use the term establishment to refer to one location where a company operates, and firm to refer to the entire organization.

We randomly sample (with replacement), an establishment from the EHBS. Each establishment's probability of being sampled is based on a survey weight, which was adjusted to match the distribution of private sector establishments in MEPS-IC. EHBS reports each establishment's Census region, but not the establishment's state. We use the MEPS-IC to derive a state probability distribution specific to each region, firm size, and ESI offer status combination, and use this distribution to impute a state for each sampled establishment.

Next, we populate the establishment with employees by randomly selecting ACS respondents who live in the same state as the establishment. As establishments report the age and income distribution of their workforce in the EHBS, ACS workers are selected probabilistically to approximately match these distributions. In addition, if an ACS family reports having employer coverage, we ensure that at least one employed family member is matched to an offering firm.

As health insurance offer decisions are typically made at the firm-level rather than establishment-level, we group establishments into firms. We combine establishments into firms so that the number of employees across all grouped establishments is consistent with the firm size reported by the respective establishment in EHBS. Our methodology ensures that combined establishments nearly always have the same ESI offer status and reported industry, but do not always reside in the same state. National firm size distributions were calibrated to be consistent with MEPS-IC firm-size distributions, supplemented with more granular state-specific data from SUSB.[d] Whether an employee has access to ESI coverage and, if applicable, the characteristics of the coverage offer are based on the EHBS responses corresponding to the linked establishment.

Very small firms, defined as those with 3 or fewer workers, are not included in the EHBS. As a result, we could not use the EHBS to link such workers into synthetic firms. Using a firm size model estimated in the CPS, we partitioned a sample of workers in the ACS who we assumed worked at very small firms. These workers, as well as self-employed non-incorporated workers, were not sorted into synthetic firms. When setting ESI premiums, we combined these workers

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[d] County Business Patterns. United States Census Bureau. 2016. Available at https://bit.ly/2Mwc4sz.

into risk pools with workers from other small firms according to state-specific small group rating rules.

ACS respondents report whether they are government employees. In 2017, 6.5% of workers were public employees, with 3.9% of workers being employed by the Federal government. We treat all Federal government employees as working for the same firm. We treat other government employees residing in the same state as being employed by the same firm. We do not model coverage offer decisions for government employers.

c. Selecting Between Five Different Plan Options

In the EHBS, information is provided on five different types of health plans:
- Conventional health plans;
- Health Maintenance Organizations (HMOs);
- Preferred Provider Organizations (PPOs);
- Point of Service (POS) plans; and
- High Deductible Health Plans (HDPs).

Each employer reports the percent of employees enrolled in each of the five above health plan types. If a worker enrolls in an employer health plan, we simulate their plan choice based on the employer-specific enrollment distribution. Based on the CBO's discussion of spending differences across health plans, we assume those enrolled in HMOs or POS plans have 2.5% lower spending than PPO enrollees, and that those enrolled in HDPs have 5% lower spending than PPO enrollees.[e] Conventional health plans had very little enrollment (<1%). We assumed conventional health plan spending would be comparable to PPO spending.

d. Estimating Actuarial Value

The AV of a given health insurance plan represents the plan's expected share of an enrollee's costs. We allow health plans to have different AVs based on the cost-sharing rules reported in EHBS. We use the Centers for Medicare & Medicaid Services (CMS) Draft 2020 AV Calculator, which enables users to select various plan design features and estimate the plan's AV. [f] Specifically, we estimated AV as a function of plan deductibles, out-of-pocket limits, health savings account contributions, and service-specific coinsurance/copayment amounts. Plan

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[e] Based on findings from the RAND Health Insurance Experiment, we assume that movement from a conventional health plan to an HDP reduces utilization and spending by 5%. We assume that movement from a conventional health plan to a PPO, HMO, or POS plan reduce spending by 2.5%.

[f] Draft 2020 Actuarial Value Calculator Methodology. Centers for Medicare & Medicaid Services. 2019. Available at https://go.cms.gov/2ZqaCfd.

parameters for pharmaceuticals and some medical services were not inputted into the calculator since the EHBS fields did not translate well into calculator inputs. For a minority of plans that did not report enough data to measure AV, we impute an AV based on the plan type, the firm's industry, and the firm's number of employees. We slightly increase our AV estimates to match the 83% employer market average reported by the Urban Institute.[g]

e. Imputing Payroll

We have wage and salary information for each assigned worker from the ACS, which we use to measure the distribution of wages within the firm. Aggregate payroll for the firm is adjusted based on payroll data from SUSB. For each synthetic firm, we assumed the average payroll per worker was equal to the average among all firms in the same state, industry, and firm size, as reported in SUSB.

f. Identifying Dependents

We define Health Insurance Units (HIUs) in the ACS using software released by the State Health Access Data Assistance Center (SHADAC).[h] HIUs represent family units that can obtain a health plan together. Most of those reporting ESI enrollment were in an HIU with at least one person who had ESI access. However, for some households, we were unable to identify an ESI source. This was usually the result of retirees having coverage from a former employer or young adults living in separate households from the ESI source. We excluded retirees from the analysis. We grouped young adults (under age 26) into HIUs with potential "parents," by matching on race, geography and relative age.

g. Internal Administrative Burden of Offering Coverage

Firms offering health benefits must use staff time to manage their health plans. We assume that by dropping their health benefits, firms can reduce their human resources expense by 10%. Based on data from the Society for Human Resource Management on human resource expenses, this translates to $350 per employee for firms with fewer than 250 employees, $200 per employee for firms with fewer than 1,000 employees, and $150 per employee for firms with more than 1,000 employees.

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[g] Are Nongroup Marketplace Premiums Really High? Not in Comparison with Employer Insurance. The Urban Institute. https://urbn.is/30Fpru1.
[h] Using SHADAC Health Insurance Unit (HIU) and Federal Poverty Guideline (FPG) Microdata Variables. State Health Access Data Assistance Center (SHADAC). https://bit.ly/2tkYHAT. We modified the SHADAC programs to allow for same-sex marriages and to combine college students with their parents.

[1] KNG Health Reform Model. KNG Health Consulting. 2019. Available at https://bit.ly/2WHj5bT.

[2] Market Rating Reforms; State Specific Rating Variations. Centers for Medicare & Medicaid Services. Available at https://go.cms.gov/1TdRj0Z.

[3] Karaca-Mandic, P., Abraham, J. M., & Phelps, C. E. (2011). How do health insurance loading fees vary by group size?: implications for Healthcare reform. International Journal of Health Care Finance and Economics, 11(3), 181.

[4] Eibner, C., Girosi, F., Miller, A., Cordova, A., McGlynn, E. A., Pace, N. M., ... & Gresenz, C. R. (2011). Employer self-insurance decisions and the implications of the Patient Protection And Affordable Care Act as modified by the health care and education reconciliation Act of 2010 (ACA). Rand health quarterly, 1(2).

[5] Table 20. Private Health Insurance Benefits and Net Costs. National Health Expenditure Accounts. Centers for Medicare & Medicaid Services. 2017. Available at https://go.cms.gov/1Jy5kin.

[6] Eibner, C., Girosi, F., Miller, A., Cordova, A., McGlynn, E. A., Pace, N. M., ... & Gresenz, C. R. (2011). Employer self-insurance decisions and the implications of the Patient Protection And Affordable Care Act as modified by the health care and education reconciliation Act of 2010 (ACA). Rand health quarterly, 1(2).

[7] The Oregon Health Insurance Experiment. Health Care Utilization. Available at https://www.nber.org/oregon/3.results.html#health-care.

[8] Liu, S., & Chollet, D. (2006). Price and income elasticity of the demand for health insurance and health care services: a critical review of the literature. Mathematica Policy Research.

[9] Holahan, J., Clemans-Cope, L., Buettgens, M., Favreault, M., Blumberg, L. J., & Ndwandwe, S. (2016). The Sanders single-payer health care plan. Urban Institute.

[10] Feenberg, Daniel Richard, and Elizabeth Coutts, An Introduction to the TAXSIM Model, Journal of Policy Analysis and Management vol 12 no 1, Winter 1993, pages 189-194.