



The Potential National Health Cost Impacts to Consumers, Employers and Insurers Due to the Coronavirus (COVID-19)

Introduction

This policy/actuarial brief provides projections and models the potential costs associated with coronavirus (COVID-19) testing and treatment on the national commercial health insurance markets (individual, small and large group employers — including both those employers that are insured and self-funded). There are additional cost and access implications for Medicare, Medicaid, other public programs, and the uninsured, but this brief focuses only on the impacts on Americans with commercial insurance coverage. Major findings include:

- **The one-year projected costs in the national commercial market range from \$34 billion to \$251 billion** for testing, treatment and care specifically related to COVID-19 — with the potential that costs could be higher than the high end of the range.
- **Potential COVID-19 costs for 2020 could range from about 2 percent of premium to over 21 percent of premium** if the full first-year costs of the epidemic had been priced into the premium.
- Health carriers are in the process of setting rates for 2021. If carriers must recoup 2020 costs, price for the same level of costs next year, and protect their solvency, **2021 premium increases to individuals and employers from COVID-19 alone could range from 4 percent to more than 40 percent.**

Background

The coronavirus (COVID-19) pandemic is causing large financial and personal impacts to virtually all Americans. In addition to the impacts on individuals and the major disruption of the national economy, this disruption is particularly acute in the health care sector. The impacts of the COVID-19 pandemic is huge in the United States with a possibility that 50%

Highlights

The potential impacts detailed in this report reflect what could happen absent decisive federal action. If these impacts are not mitigated, the public health and economic consequences to consumers, small and large employers and health insurers are potentially staggering, including:

- Consumers and employees not getting needed testing or treatments due to cost barriers, both for COVID-19 but also for other health conditions.
- Employers no longer being able to offer affordable coverage, or dramatically shifting costs to employees.
- Consumers and employers no longer being able to afford coverage, leading to employer groups dropping coverage or individuals deciding to go uninsured.
- Even more unsubsidized marketplace enrollees being priced out of individual markets.
- Small insurers risk insolvency, and if they close, put covered consumers at financial risk, damaging competition that benefits consumers and the employers that purchase on behalf of millions of Americans.
- Dramatic cost increases, many of which will be borne by the federal government in the form of higher Advanced Premium Tax Credits (APTC), or by both federal and state governments paying for increased Medicaid enrollment as individuals and employers drop coverage.

This analysis was prepared by Covered California for its ongoing planning and to inform policy making in California and nationally.

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of the total population may be infected with COVID-19. COVID-19 may have a devastating impact on America's seniors which will be reflected in illness, deaths and Medicare costs. It will have large impacts on Americans served by Medicaid programs and the state that operate these vital safety net programs; and it will affect the millions who remain uninsured. This policy/actuarial brief, however, focuses on the commercial market that includes up to 20 million high-risk people under age 60 who are at higher risk of having significant health needs due to the virus, and many in the commercial market who are not high-risk but will need testing and care when infected by COVID-19.

As roughly half of the US population receives its health care coverage through employers or through direct purchase in the individual market and exchanges, much of the COVID-19 testing and treatment will be paid through commercial health insurers. Claims for testing, hospitalization and other treatment will likely begin to emerge in a significant way in 2020, with those costs continuing into future years. Commercial-population insurance premium rates for 2020 were set six to nine months before January of this year and well before there was even any hint of the virus. The health care and insurance industries were unprepared for the onset of such an unexpected occurrence.

Projections of Potential National Commercial Market COVID-19 Costs

The summary of low, medium and high projections for the potential testing and treatment costs of COVID-19 on the Commercial Market is summarized in Table 1: Projected First Year Costs for National Commercial Market COVID-19 Testing and Table 2: Projected First Year COVID-19 National Commercial Market Treatment Costs.

As described in the discussion that follows these tables, while there is substantial uncertainty regarding many of the important variables for this analysis, all parameters were chosen based on best-available data and input from actuarial and clinical advisors.

The Medium Estimates in the tables are meant to reflect a "best estimate" given what we know today and the huge uncertainty in making projections. The Low Estimate may occur if mandatory "shelter in place" actions have a big effect. The High Estimate is not a "worst case" but represents a possible outcome with somewhat higher than expected positive test results and the percentage of patients requiring hospitalization is somewhat higher (i.e., 25%) than currently being observed in other countries.

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Table 1: Projected First Year Costs for National Commercial Market COVID-19 Testing¹			
ESTIMATE RANGE	LOW	MEDIUM	HIGH
Commercially Insured Population	170 million		
Estimated Number at Higher Risk	20 million		
Assumed % of Higher Risk Tested	25%	50%	75%
Modeled Number Tested	5 million	10 million	15 million
Remaining Non-Higher Risk	150 million		
Assumed % of Non-Higher Risk Tested	10%	20%	30%
Modeled Number of Non-HR Tested	15 million	30 million	45 million
Estimated Number of All Tested	20 million	40 million	60 million
Lab-only Test Costs (includes what would have been consumer out of pocket portion)	\$120		
% for Lab-only or Drive-Through	75%	25%	20%
Number of Lab-only or Drive-Thru	15 million	10 million	12 million
Lab AND PCP or Televisit Average Cost (includes what would have been consumer out of pocket portion)	\$240		
% for Lab and PCP/Televisit	25%	75%	80%
Number for Lab and PCP/Televisit	5 million	30 million	48 million
Total Cost at Commercial rates (includes what would have been consumer out of pocket portion)	\$3.0 billion	\$8.4 billion	\$13.0 billion

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Table 2: Projected First Year COVID-19 National Commercial Market Treatment Costs¹			
ESTIMATE RANGE	LOW	MEDIUM	HIGH
Projected number of positive cases (among those tested)	4.0 million	8.0 million	15 million
Assumed % requiring hospitalization (for those under 60)	10%	15%	20%
Projected number of cases requiring hospitalization	400,000	1,200,000	3,000,000
Assumed Length of Stay (severe cases)	12 days		
Assumed Insurance Reimbursement — Commercial (includes consumer out of pocket portion) ²	\$72,000		
Projected Hospital Costs for severe cases	\$28.8 billion	\$86.4 billion	\$216.0 billion
Assumed % of cases that require outpatient services	90%	85%	80%
Projected number of cases that require outpatient services	3,600,000	6,800,000	12,000,000
Assumed physician reimbursement for cases that require outpatient services — Commercial (includes consumer out-of-pocket portion)	\$600	\$1,200	\$1,800
Projected physician cost for cases that require outpatient services	\$2.2 billion	\$8.2 billion	\$21.6 billion
Total projected costs for treatments at commercial insurance rates (includes consumer out of pocket portion)	\$31.0 billion	\$94.6 billion	\$237.6 billion

Assumptions and Methodology

1. Likely People Affected Nationally by COVID-19 in the Commercial Market

- The total market for individuals covered by private health insurance is about 170 million — which does not include those eligible for Medicare and Medicaid, or those who are uninsured.³
- Of those with private health insurance, there might be 29 million people *under* age 60 at risk due to health conditions.⁴ (Many more people over 60 will also be at risk, but most will be covered by Medicare.) Of this number, there may be 4 million uninsured and, possibly 20% who are covered by Medicaid. Thus, we project that there are 20 million people under age 60 who are at higher risk of serious illness from COVID-19. This number may need to be revised to include people aged 61 to 64 with commercial coverage.

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2. Estimates of Potential Testing Costs Nationally

- **Summary:** Assuming that there is a large outbreak of the disease, some estimates are that 120 million of the 170 million non-elderly Americans could show some symptoms (i.e., fever, etc.). If this happens, then consideration would likely be given to testing all of these individuals. But assuming that “only” 20 to 60 million get tested the costs could be around \$3 billion to \$13 billion for one year of testing.
- **Basis for this estimate:** The two variables that affect cost are the number of those in the commercially insured population who will get tested and the cost of providing those tests (see Table 1. Projected First Year Costs for National Commercial Market COVID-19 Testing, which shows the assumptions and calculations).
 - **Number of people getting tested:** For the purpose of developing these estimates, we modeled a Low Estimate of 25% of those at Higher Risk and 10% of non-Higher Risk individuals getting tested. For the High Estimate, we modeled 75% of those at Higher Risk and 30% of non-Higher Risk individuals getting tested. Some individuals might be triaged using online survey tools that could indicate they may not require testing.
 - **Costs of testing:** The costs of testing may vary dramatically. Generally, testing costs entail clinician/visit costs and the costs of the actual lab work. Based on expert review, the costs incurred for a primary care physician (PCP) visit or televisit could range from about \$75 to \$25, respectively, and lab work ranging from \$36 to \$51 at Medicare rates — for a total cost ranging from \$61 to \$126. For the purpose of estimating the cost of testing with a related clinician visit, we have used an average total cost of \$100 (at Medicare rates), corresponding to \$240 at estimated commercial rates. However, if the healthcare system widely offers “drive-through” visits as currently being done in South Korea and some U.S. cities, the physician component might be mostly eliminated, for such testing we have used a total cost figure of \$50. The Low Estimate models the costs if testing is evenly split between “lab-only” testing and Lab and PCP/televisit testing, while the High Estimate models only 25% of the testing being lab-only. It is also possible that much of the cost taken be borne directly by the federal, state and local governments. To the extent direct public funding pays the testing costs, all of these estimates would need to be adjusted.

3. Estimates of Potential Treatment Costs Nationally

- **Summary:** Assuming that there is a large outbreak of the disease, which may result in half of the population getting infected, with from 4 to 15 million individuals in the national commercial market having confirmed cases after testing, the main cost drivers will be how many of those require hospitalization versus out-patient care and the costs of those services. Modeling from 10% to 20% of those getting infected needing hospitalization, and commercial rates, the costs could range from \$31 billion to \$238 billion for the first year.
- **Basis for this estimate:** The two variables that affect the treatment costs are the number of those in the commercially insured population who will get infected, the level of services needed for those infected and the costs of those services (see Table 2. Projected First Year COVID-19 National Commercial Market Treatment Costs, which shows the assumptions and calculations).
 - **Number of people getting infected and level of treatment:** For the 20 million high risk individuals in the commercial markets, there are not good estimates of the percent of people who would actually get infected and, of those, how many might need hospitalization and the length of their hospitalization.

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We expect that relatively few COVID-19 cases for those under age 65 will end up in a hospitalization, but that the cases involving hospitalization will have lengths of stay around 10-14 days. While it is far more likely those that infected high-risk individuals will require hospitalization and other treatment, there will be lower risk infected individuals also requiring care, including hospitalization. These projections are based on best evidence that the majority of those infected with the virus will not need either outpatient services or hospitalization. For the purpose of developing these estimates, we modeled a low estimate of 20 million people being tested with an infection rate of 20%; and of those infected 10% requiring hospitalization. For the high estimate we modeled 60 million people being tested with an infection rate of 25%; and of those infected 20% requiring hospitalization. Those not hospitalized are modeled as cases receiving out-patient care. Under these models, assuming 50 percent of the individuals in the commercial market are infected, these projections assume between 5 percent at the Low Estimate and 17 percent at the High Estimate may need hospitalization or outpatient care. Also, while it is possible that as hospitals and doctors get more experience with COVID-19 patients, they may be able to divert lower-risk patients to alternative facilities, like Urgent Care and avoid high cost (and over-worked) hospitals, that is not modeled given the short-term nature of this potential program.

- **Costs of treatment:** The costs of treatment may vary dramatically. Costs could be roughly \$30,000 per admission, based on Medicare rates and an average length of stay of 12 days (based on similar length of stay for flu or pneumonia patients), which translates to an average commercial cost of \$72,000 (an estimate we validated with health plans and counsel from external actuaries. For cases requiring outpatient care, we have modeled the average cost at \$600 per infected individual in the Low Estimate and \$1,800 per infected individual in the High Estimate. The basis for these estimates is an assumption that each person with a case requiring outpatient care would have one primary care physician office visit and two televisits. The \$600 is a best estimate based on estimated \$250 that Medicare would pay for these three visits and applying the 2.4 multiplier.

Note that the cost estimates for 2020 are based only on the impacts due to testing and treatment for COVID-19 and do not include any estimates of cost impacts related to the potential impact to utilization for other conditions that may result from COVID-19's significant impact to the health care delivery system. These could include reductions in some services (e.g., elective surgeries), but also an unknown increase in adverse events due to delays in preventive care or disease management for chronic conditions.

Projected Costs for the Commercial Market Nationally for 2021

Given the significant uncertainty of projecting 2020 costs and the unknown incidence of the COVID-19 disease, projecting costs for 2021 is even more uncertain. In addition to the modeled testing, hospitalization and other treatment costs projected above for 2020 (which might be repeated in 2021), there could be additional treatment costs for:

- Anti-viral drug treatment at some unknown cost, perhaps in a wide range of \$50 to \$2,000 per dose. Some pharmaceutical companies are currently trying to determine if some of their current drugs might be effective in treating COVID-19; and
- There are multiple efforts underway to create and test a vaccine that would be effective on COVID-19 (much the same way the flu vaccine is effective in prevention of flu episodes). It is unknown when such a vaccine would be ready and whether it could be distributed for a 2021 COVID-19 season (if COVID-19 follows the “winter pattern” of the flu) and what its cost might be.

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Another unknown factor for 2021 and later is that we do not know at this time whether COVID-19 will follow a seasonal pattern (i.e., higher in the winter and then very low in the summer months) like the flu or whether it would be a year-round affliction.

While projections of 2021 costs is difficult, we suggest that it is not prudent to plan today on lower costs related to COVID-19 in the 2021 calendar year than we project for 2020. Only when we know more about COVID-19 and whether drug treatments or a vaccine are effective should we consider modifying cost estimates for 2021.

Limitations of the Analysis of Potential National Commercial Market COVID-19 Costs

The analysis presented here is directional and needs fuller, more detailed review and modeling for a range of reasons. First, we note that there are currently many unknowns about the incidence of the COVID-19 virus in the American population. We also know very little at this point about the likely levels of severity and the length of hospital treatment needed. In all cases, we have tried to make reasonable estimates, based on treatment of similar conditions.

The analysis is further silent on the issues of facility capacity for treatment of individuals needing to be hospitalized for COVID-19 treatment. This analysis assumes that the United States will be at least somewhat successful in flattening the curve of the infection rate so that the healthcare system can manage the capacity needed. It is also silent on the supply of healthcare workers and does not address potential risks to healthcare workers and any potential staffing shortages.

This policy/actuarial brief was prepared by John Bertko, Covered California's Chief Actuary. Prior to joining Covered California, Mr. Bertko served as an actuarial consultant and director of special initiatives and pricing for CMS's Center for Consumer Information and Insurance Oversight, the federal office charged with implementing changes of the Patient Protection and Affordable Care Act impacting the individual and employer markets as well as working with states to establish new health insurance exchanges. In prior positions, Mr. Bertko was a senior fellow at the LMI Center for Health Reform, an organization that provides analysis and direction to government leaders on federal health reform. He's also been adjunct staff at RAND and a visiting scholar at both the Brookings Institution and the Center for Health Policy at Stanford University. Previously, Bertko was chief actuary at Humana Inc., a for-profit health plan in Louisville, KY. In that role, he directed work for Humana's major business units, including development of Part D, Medicare Advantage and consumer-driven health care products. He serves on the panel of health advisors for the Congressional Budget Office and completed a 6-year term on the Medicare Payment Advisory Commission (MedPAC).

The report reflects the engagement and counsel from experienced external actuaries with deep expertise in the commercial insurance markets, as well as expert clinical review and interviews with health insurance plans. It is informed by the best available data in a rapidly changing environment and has been prepared to inform the national response to the COVID-19 epidemic as policy makers prepare to cope with and mitigate its impacts. While informed by similar sources, this Covered California Policy/Actuarial Brief was prepared separately from work being done by the State of California to model the impacts of the COVID-19 pandemic on that state. Examples of data used to develop this report not referenced in the body of the report include those referenced in the Appendix.

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Appendix – References

Kaiser Family Foundation. “How Many Adults Are at Risk of Serious Illness if Infected with Coronavirus?” <https://www.kff.org/global-health-policy/issue-brief/how-many-adults-are-at-risk-of-serious-illness-if-infected-with-coronavirus/> published March 2020

White, Chapin, Whaley, Christopher, “Prices Paid to Hospitals by Private Health Plans Are High Relative to Medicare and Vary Widely,” 2019, https://www.rand.org/pubs/research_reports/RR3033.html.

CDC, Severe Outcomes Among Patients with Coronavirus Disease 2019 (COVID-19) – United States, February 12-March 16, 2020, <https://www.cdc.gov/mmwr/volumes/69/wr/mm6912e2.htm>. March 18, 2020.

CMS posted a fact sheet providing a HCPCS code and fee schedule for COVID-19 testing performed by CDC laboratories and non-CDC laboratories: <https://www.cms.gov/files/document/mac-covid-19-test-pricing.pdf>.

<https://www.cnn.com/2020/03/02/asia/coronavirus-drive-through-south-korea-hnk-intl/index.html>

Review of treatments and outcomes in Wuhan, China. One source is The Lancet: [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)30566-3/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30566-3/fulltext)

For estimate hospitalization length of stay, review of a consultant’s proprietary claims data sets with DRGs associated with pneumonia, the flu, and sepsis, which may be reasonable proxies for the treatment protocol for COVID-19

COVID-19 codes were recently assigned and were recently published and are available online at: <https://www.cdc.gov/nchs/data/icd/ICD-10-CM-Official-Coding-Guidance-Interim-Advice-coronavirus-feb-20-2020.pdf>

For Medicare beneficiary costs: <https://www.urban.org/urban-wire/covid-19-treatment-costs-could-hit-some-medicare-beneficiaries-high-out-pocket-expenses>

Endnotes

- ¹ All estimates for unit costs are derived from first calculating estimated costs at Medicare rates and then inflating those rates to estimated commercial rates based on published studies finding commercial payments to be on average 241 percent of Medicare across inpatient and outpatient settings – this Policy/Actuarial Brief uses a 2.4X multiplier for all costs originally derived from Medicare rates. See, White, Chapin, Whaley, Christopher, “Prices Paid to Hospitals by Private Health Plans Are High Relative to Medicare and Vary Widely,” 2019, https://www.rand.org/pubs/research_reports/RR3033.html.
- ² Our research for hospital costs using a claims database from a large actuarial consulting firm suggests that the cost of hospitalization for related illnesses like the flu and pneumonia is approximately \$72,000 for a 12-day average length of stay (ALOS), confirmed by interviews with commercial payers. We reviewed other publicly reported hospitalization costs based only on pneumonia from a different database, which estimated costs of approximately \$20,000 and found those estimates to be far lower than actual costs. See <https://www.healthsystemtracker.org/brief/potential-costs-of-coronavirus-treatment-for-people-with-employer-coverage/>.
- ³ Kaiser Family Foundation. State Health Facts. Health Insurance Coverage of the Total Population. <https://www.kff.org/other/state-indicator/total-population/> (accessed March 17, 2020).
- ⁴ Kaiser Family Foundation. “How Many Adults Are at Risk of Serious Illness if Infected with Coronavirus?” <https://www.kff.org/global-health-policy/issue-brief/how-many-adults-are-at-risk-of-serious-illness-if-infected-with-coronavirus/> published March 2020.

About Covered California

Covered California is an independent part of the state government whose job is to make the health insurance marketplace work for California’s consumers. It is overseen by a five-member board appointed by the governor and the Legislature. For more information about Covered California, please visit CoveredCA.com.