



# Getzen Model of Long-Run Medical Cost Trends Update for 2021-2030+





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## Premiums after the Pandemic

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**Caveat and Disclaimer**

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## Premiums after the Pandemic

### Section 1: Executive Summary

Health care financing is undergoing a stress test in real time. Extreme volatility makes unlikely events more likely to happen. The disruption is so severe that it seems useless to make a projection of rates next year, or even for the year after. Yet after 5 years, covid-19 is likely to be just one more virus responsible for some of the thousands of regularly occurring seasonal deaths—no longer something unprecedented or even particularly surprising.<sup>1</sup> There is no denying the current shock and we should expect enduring effects, but they will mostly come in the form of accelerated evolution toward financing that is more robust and sustainable, more capable of withstanding major shocks. The Getzen Model is based on 30+ years of observation showing that economic factors, not disease incidence, are responsible for most of the disruption and variance in aggregate medical spending trends.<sup>2,3</sup> This continues to be true even in response to a deadly pandemic. Unemployment has already soared and recovery is apt to be slow. The current update refrains from forecasting precisely what might happen in the next few years. There are placeholder question marks “???” for 2021-2023 while the model continues to project a long run trend and ranges of uncertainty for years 2025 and following.

How will the corona pandemic change insurance contracts and medical reimbursements? Reference pricing based on Medicare rates for some emergency funding has been adopted, and may well become more widespread in the near future. In 2020, government was the only realistic source for immediate funding. Premiums for the year had already been set, employees were being laid off, and their savings drained to cover daily expenses. It was and still is an emergency. Perhaps it should have been planned for, but it was not. Following the crisis, more disaster response will get built in. Not just surge capacity in hospitals and stockpiling of supplies, but diversion of some medical reimbursement toward public health infrastructure. Much of the burden will fall on Medicare and Medicaid. Differential pricing through chagemasters and out-of-network surprise bills paid by employer insurance is already under attack. Using audited costs to put limits on provider payments, as Medicare does, will become more common. Reliance on reference prices has increased over the last ten years, and will expand. A disproportionate share of corona virus treatment costs will fall on the over 65 population just as an aging generation of boomers accounts for more and more inpatient and outpatient care of all kinds, enhancing the centrality of Medicare reimbursement.

Economic and medical conditions are apt to be highly erratic over the next two or three years, with annual growth rates being almost unpredictable although an outer limit on volatility can still be perceived. Conditions are likely to stabilize thereafter and be in line with or close to long run trends. A baseline assumption for this model is that real wages and incomes six years from now in 2026 will be essentially the same as those projected by the CBO in January, 106% of 2019 levels. For years 2027+ the expected average increase is +1% to +1½% per year, consistent with averages over the past fifty years. Nominal wages and prices (i.e., without adjustment for inflation) are less predictable. The core Getzen model is neutral with respect to inflation, but real world contracts are affected by this added volatility. Hence it is better to consider benefits and premiums as a percentage of compensation rather than absolute dollar amounts. Analysis of previous recessions has shown that medical costs almost always continue to rise steadily even as employment and wages fall, ratcheting the health share of GDP upward. Therefore the baseline “share”

projection for 2026 in this year's model has been raised to 19.4% (compared to last years 19.3%), rising by 2030 to 20.3%.

Political considerations surrounding the 2020 election were discussed as major causes of uncertainty in last year's update. These have not gone away. Instead, the covid-19 pandemic is likely to compound indeterminacy. Trying to anticipate year-to-year changes during such turmoil may not be worthwhile. It is more prudent to base projections on long run trends for a period after the storm, extrapolating from 2026 forward, leaving the intervening turbulence (years 2020-2025) mostly unspecified. Almost all analysts fully expect major changes in health financing to occur. We just do not know what they will be and when they will get implemented. This is one of those periods when future growth rates are more bounded and predictable than what will happen in the near term. The project oversight group (POG) for the Getzen Model intends to reconvene in early 2021 to consider a revised update and parameter modifications as new information becomes available. The POG is also considering a report about the possible configuration, constraints, and timing of the next transformation in health care financing, but such exploratory work must always rely more on plausible assumptions and speculation than precisely quantified trends.

## Section 2: Notes on Long Run Model Input Parameters

The “Getzen Model” is a set of linked formulas to facilitate projections of average medical care cost increases over the long run. The formulas are embedded in a spreadsheet available on the SOA website. A “baseline” is presented on the “output” page of the spreadsheet that provides the consensus estimate of an expert project oversight group convened by the SOA. Actuaries should be aware that rates of increases for specific plans may often be above or below, or more variable than, the long-run average national rate of increase in medical costs which is the primary forecast target of the Getzen Model and should be prepared to document and justify conditions or assumptions that deviate from the baseline trend projections. The model has three major sections:

Years 1–4: Short-term annual % increases (user modifiable)

Years 5–9: Linear transition

Years 10+: Long-run forecasts (per capita income+ inflation + X%)

A formula is used to reduce the estimated rate of cost increase once the health share of GDP exceeds a **resistance point**. A **year limit** specifies when further growth in medical costs is limited to the rate of increase in per capita income. This stabilizes the model and keeps unbounded growth from creating contradictions. Further explanation of model details, development, historical trends, sensitivity analysis and uncertainty are provided in the *Technical Manual* on the SOA website for actuaries and other users to consult.

In the sections below, we are illustrating the level at which specific factors were set along with some of the averages and standard deviations for these factors based on other publicly available sources.

### 2.1 INFLATION/CPI

The Inflation/CPI factor was set at 2.5% with a range of 1.5%–4.0%. The 30-year average from 1989–2010 is 2.0% with a standard deviation of  $\pm 0.8\%$  for the deflator and  $2.5\% \pm 1.2\%$  for CPI-U (Consumer Price Index for urban consumers); Five-year moving averages range from 1.5% to 3.5%. The Congressional Budget Office (CBO) projects 2.0% for GDP deflator and 2.2% for CPI 2022-2030 in their July/September 2020 Update (Table 1, page 3). The June 2019 Long-Term Budget Outlook projects 2.0% and 2.4% respectively for 2019-2049 (Table A-2, page 54).<sup>4</sup> The 2020 Medicare Trustees Report projects CPI of 2.4% (range of 1.8% to 3.0%) for 2044-2094 (Table II.C.1 page 13, which is -0.2% below their 2019 assumptions).<sup>5</sup> September 18 2020 30-year TBond (1.45%) - TIPS (-0.31%) implied inflation rate is 1.8%. Inflation is volatile and can change rapidly, confounding expectations. However, inflation is neutral over the long run and thus has no effect on the health share of GDP or annual percentage increases in real spending in this model.

### 2.2 WAGES/REAL PER CAPITA GDP

The Wages / Real Per Capita GDP factor was set at 1.5% with a range of 0.0%–3.0%. The 30-year average from 1989–2019 is 1.5% with a standard deviation of  $\pm 1.2\%$  and a smoothed moving average range of -0.3% to 3.7%. The CBO September 2020 projection is 1.6% for 2023-2030 (Table 1, page 3), and the January 2020 Long Term Outlook projection is  $1.3\% \pm 0.5\%$  for 2019-2049 (Table A-2, page 54, Table 1-5, page 34). The 2020 Medicare Trustees Report projects scenarios from 0.5% to 1.8% with an average long run 2044-2094 estimate of 1.14% (Table II.C.1, page 13). There is some controversy as to how much economic growth has or has not slowed since 2000, and whether or not it will be lower for the next two decades, with experts expressing a variety of opinions.

### 2.3 TECHNOLOGY/EXCESS COST GROWTH

The Technology / Excess Cost Growth factor was set at +1.1% with a range of 0.5%–2.2%. The 30-year smoothed average 1989-2018 of +1.5% with standard deviation of  $\pm 1.2\%$  and range of -0.4% to 4.2%, trending downward and averaging 0.9% over the last ten years. CMS OACT projects excess growth of 1.1% for 2018-2028 (Table 1).<sup>6</sup> Medicare Trustee Report projects +0.6% for 2021 rising to 1.5% by 2025, then declining to 0.8% by 2044, and 0.5% by 2094 (Page 159 and Table V.B5, page 180, see also CMS memorandum “Long Term Projection Assumptions for Medicare and Aggregate National Health Expenditures, April 22 20202, page 24).<sup>7</sup> 2019 CBO Long-Term Budget Outlook projects excess cost growth range of 1.1%-1.8%  $\pm 0.6\%$  for 2019-2039 (Table 1-5, page 34). Projected growth due to technology and related factors is the most crucial element of the model. Excess growth, not the level or nominal rate of spending growth, is the factor creating fiscal pressure on employers and government.

### 2.4 HEALTH SHARE OF GDP

The Health Share of GDP in 2029 was set at 0.203 with a range of 0.175 to 0.235. The expected 2029 share is equal to that projected by the CMS OACT for 2028 plus two additional years of excess growth, up .003, slightly above last year’s value. The main impact of this parameter comes from its interaction with the share resistance limit.

### 2.5 SHARE RESISTANCE POINT

The Share Resistance Point was set at 0.250 with a range of 0.150 to 0.350. This is the share of GDP above which additional health spending is projected to meet increasing resistance. Actuaries expecting greater budgetary resistance to medical cost increases can set this parameter as low as .150, which has the effect of bending the cost curve sooner (from 2026 onward) and more strongly, so that even in the long run medical costs are limited to less than .300 relative to GDP and wages. It is possible that the United States economy has already reached the resistance point where share resistance is already limiting health care costs. The POG is considering, studying the possible impact of share resistance on short-term trend, the excess medical cost growth rate (technology factor) and the resistance point in future releases. The POG provides more detail on how alternative assumptions would affect projected growth rates in the *Technical Manual*.

### 2.6 YEAR LIMIT

The Year Limit was set at 2075 with a range of 2040 to 2098\*. The March 2020 CMS OACT projection was 5.2% for 2020 (1.4% above GDP growth) rising to 5.4% for 2021-2023 and 5.6% for 2024-2028 (1.2% above GDP, NHE Projections, Table 1).<sup>8</sup> However, these projections were made based on data and expectations as of December 2019 before the impact of COVID-19 was even considered a factor. Even the September 2020 CBO projections for GDP and inflation were based on early summer data and have already been upended by rapidly moving trends. For these reasons a series of question-marks “???” are shown for 2021-2023 medical cost growth rates. The 5.4% for 2024 and 2025 is more of a placeholder consistent with long-run trends rather than a forecast of a specific annual rate. Note that in our model the short-term growth rate inputs do not affect the rates projected for 2030 and beyond. Long-run growth projections are determined solely by the inputs of long-run inflation, wage and technology factors, 2030 health share of GDP, resistance level and ultimate year limit.

\*Short-term rates for specific groups may deviate substantially from the average national medical cost increases projected in this model due to plan designs (such as Rx only or Medicare Advantage), known rate increases at the time the valuation is performed, changes in state or federal premium taxes and fees or other factors. Significant changes to provider payment methods due to legislative or regulatory actions are

apt to create perturbations. Actuaries should make use of such information and could justify expected short-term rates outside of the suggested ranges in some cases.



## Section 3: Acknowledgements

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## Endnotes

1. There have been hundreds of articles written recently on the economic impact of COVID-19 on the economy, and on health care costs. Some overviews can be found in several working papers online from the National Bureau of Economic Research [[www.nber.org](http://www.nber.org)] RJ Barro, JU Ursua and J Wang “The Coronavirus and the Great Influenza Pandemic: Lessons from the Spanish Flu for the coronavirus’s potential effects on mortality and economic activity” #w26866; V Arthi & J Parman “Disease, Downturns, and Wellbeing: Economic History and the Long-Run impacts of COVID-19, #w27805; M Lenza & GE Primiceri :How to estimate VAR after March 2020” #w27771.
2. Getzen, Thomas E. (2019). The Growth of Health Spending in the USA from 1776 to 2026. *Oxford Research Encyclopedia: Economics and Finance*. <https://oxfordre.com/economics/>.
3. The revised Model with an updated *Technical Manual and Documentation* is available on the SOA website under “Research Projects – Health.”
4. Medicare Trustees, *2020 Annual Report of the Boards of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds*. Washington, D.C., April 22, 2020.
5. CBO. *An Update to the Economic Outlook, 2020-2030*. Dated July 2020, published 02 September 2020 (see Table I, page 3 and Figure 1, page 4); and *The 2019 Long-Term Budget Outlook*. June 2019 USGPO, Washington, DC.. (see Figure 1-11, page 26, Table 1-5, page 34 and Table A-2, page 54).
6. CMS Office of the Actuary. *National Health Expenditure Projections 2019-2028*. Health Affairs, 39(4): April 2020 (see Table 1: Selected Economic Indicators, Levels and Annual Percent Change: Calendar Years 2011-2027). Online at [cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-](https://cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-)
7. CMS Office of the Actuary. “Long Term Projection Assumptions for Medicare and Aggregate National Health Expenditures.” April 22 2020. <https://www.cms.gov/files/document/long-term-projection-assumptions-medicare-and-aggregate-national-health-expenditures.pdf>
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The SOA supports actuaries and advances knowledge through research and education. As part of its work, the SOA seeks to inform public policy development and public understanding through research. The SOA aspires to be a trusted source of objective, data-driven research and analysis with an actuarial perspective for its members, industry, policymakers and the public. This distinct perspective comes from the SOA as an association of actuaries, who have a rigorous formal education and direct experience as practitioners as they perform applied research. The SOA also welcomes the opportunity to partner with other organizations in our work where appropriate.

The SOA has a history of working with public policymakers and regulators in developing historical experience studies and projection techniques as well as individual reports on health care, retirement and other topics. The SOA's research is intended to aid the work of policymakers and regulators and follow certain core principles:

**Objectivity:** The SOA's research informs and provides analysis that can be relied upon by other individuals or organizations involved in public policy discussions. The SOA does not take advocacy positions or lobby specific policy proposals.

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**Relevance:** The SOA provides timely research on public policy issues. Our research advances actuarial knowledge while providing critical insights on key policy issues, and thereby provides value to stakeholders and decision makers.

**Quantification:** The SOA leverages the diverse skill sets of actuaries to provide research and findings that are driven by the best available data and methods. Actuaries use detailed modeling to analyze financial risk and provide distinct insight and quantification. Further, actuarial standards require transparency and the disclosure of the assumptions and analytic approach underlying the work.

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