



Getzen Model of Long-Run Medical Cost Trends Update for 2020—2029+





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Crunch Time for Health Care Pricing

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Crunch Time for Health Care Pricing

Section 1: Executive Summary

A divisive confrontation over health care pricing is almost inevitable over the next few years. What will ultimately happen is a political decision, not an actuarial one—but it will have major consequences for the trend in health care costs and the divergence between public and private insurance premiums. “Medicare for All” may prove to be an empty slogan, or a winning one, but there is no doubt that health care issues will be influential in the 2020 elections.¹ Calls for “price transparency” have proven to be disappointing. The public does not believe that either pharmacy benefit managers or managed care have operated effectively as market solutions to bring down costs. In the end, there are only three sources of funding: government, employers or individuals. Government is already paying almost half—more if one counts IRS tax exemption subsidies. Employers have been able to hold down their increases by modifying benefits and shifting more of the burden to employees through increased premium contributions and larger deductibles and co-pays but now face more resistance. According to the 2019 Milliman Medical Index, individual employee payments have been growing more rapidly than employer contributions and now cover 40% of the total cost of care (24% employee contribution, 16% out-of-pocket).² Workers are beginning to resist ever-larger personal payments, and those employees who shifted to high-deductible plans start to scream when they receive a hospital bill or an out-of-network lab invoice. Chargemasters have become so divorced from reasonable prices that Medicare rates are now accepted as the only de facto standard. Since Medicare pays so much less than private insurance, any move in that direction forces painful cuts to providers and layoffs. This cost-shifting system is unsustainable in the long run, and the long run may be rapidly approaching. Medicare enrollment will rise by 20 million over the ensuing decade as baby boomers retire, with expenditures more than doubling to exceed \$1.7 trillion by 2029 [2019 Medicare Trustees Report, Table V.H4, p. 211].³ Financial stress will be created not only by enrollment and per-member cost increases but also by rising federal deficits. The twin pincers of rising costs and restricted revenues will severely limit any increase in provider reimbursement rates. Yes, it is season 8 in the game of financial thrones, and winter’s cold hard actuarial truths are coming. That said, the future beyond 2020 is at least as cloudy and uncertain as it was last year, and very little can or will be done before the elections; hence the previous muddling-through projections mostly remain in force.

In this model, short-run cost increases for 2020–2023 do not affect projected long-run rates for 2029 and beyond and could presumably be left out but are of more interest to many actuaries than the long-run rates. Baseline short-run rates included here are generated by the lag regression model described in the Technical Manual, essentially equal to a smoothed three-year moving average of inflation, a six-year moving average of real per capita income, and a technology factor of +1.3% based on smoothed moving average trends for actual excess cost growth (National Health Expenditure % – GDP %) over the last 30 years. In prior updates, the Project Oversight Group (POG) has often chosen to make short-run projection adjustments of $\pm 0.5\%$ or more based on a consensus judgment but is using the regression extrapolation with no adjustments this year. Using a formula based on past trends has drawbacks but avoids the confusion that arises when judgment and speculation are mixed in with the results of technical analysis. Actuaries should change these baseline short-term rates to reflect their superior knowledge of local and plan-specific factors. In addition to shifting local market conditions, actuaries should also consider

additional national forces such as the continued cost shifting that has routinely caused private health insurance premiums to rise 1%–2% faster than average medical costs, a surge in pharmaceutical pricing and of course the impact of contemplated changes in state and federal legislation.

1.1 LONG RUN PROJECTIONS

Projected long-run inflation remains at 2.5%, up slightly from last year's update.⁴ The second parameter, real per capita gross domestic product (GDP) and wage growth, has been left unchanged at the baseline 1.5%. Excess cost growth due to technology and related system changes, the most critical parameter, has a baseline long-run estimate of 1.1%, down –0.1 % from the prior update. Continued slow growth in national medical expenditures per capita is the main reason for this slight downward revision. Excess medical cost growth is expected to remain between +1% and +1½% on average, trending moderately downward as it has for the last 20 years. The small increase in inflation and decline in technology factor offset each other, leaving the estimated nominal medical cost trend increases for 2029 and beyond at 5.2%, the same as in last year's update.

1.2 SHORT RUN PROJECTIONS

In this model, short-run cost increases for 2020–2023 do not affect projected long-run rates for 2029 and beyond and could presumably be left out but are of more interest to many actuaries than the long-run rates. Baseline short-run rates included here are generated by the lag regression model described in the Technical Manual, essentially equal to a smoothed three-year moving average of inflation, a six-year moving average of real per capita income, and a technology factor of +1.3% based on smoothed moving average trends for actual excess cost growth (National Health Expenditure % – GDP %) over the last 30 years. In prior updates, the Project Oversight Group (POG) has often chosen to make short-run projection adjustments of ±0.5% or more based on a consensus judgment but is using the regression extrapolation with no adjustments this year. Using a formula based on past trends has drawbacks but avoids the confusion that arises when judgment and speculation are mixed in with the results of technical analysis. Actuaries should change these baseline short-term rates to reflect their superior knowledge of local and plan-specific factors. In addition to shifting local market conditions, actuaries should also consider additional national forces such as the continued cost shifting that has routinely caused private health insurance premiums to rise 1%–2% faster than average medical costs, a surge in pharmaceutical pricing and of course the impact of contemplated changes in state and federal legislation.

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 1988–2018 is 2.2% with a standard deviation of $\pm 0.8\%$ for the deflator and $2.6\% \pm 1.2\%$ 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 2.4% for 2019–2049 for CPI-U and 2.0% for the GDP deflator (2019 Long-Term Budget Outlook, Table A-2, p. 54).⁵ The 2019 Medicare Trustees Report projects a CPI-U of 3.2% for 2019–2028 and 2.6% for 2029–2093, with a long-run GDP deflator of 2.25% (Table II.C.1 pp. 13, 156).³ The July 1, 2019, 30-year T bond (2.60%)–Treasury Inflation-Protected Securities (TIPS) (0.75%) implied inflation rate was 1.9%. 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 1988–2018 is 1.5% with a standard deviation of $\pm 1.5\%$ and a smoothed moving average range of -0.3% to 3.7%. The CBO projects $1.1\% \pm 0.5\%$ for 2019–2049 (Table A-2, p. 54, Table 1-5, p. 34). The 2019 Medicare Trustees Report projects scenarios from 0.6% to 1.8% for the next 10 years with a long-run 2043–2093 estimate of 1.2% (Table II.C.1, p. 13). There is some controversy as to how much economic growth has or has not slowed since 2000, 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 from 1988–2018 is +1.6% with a standard deviation of $\pm 2.2\%$ and a range of -0.5% to 4.1% . This has a downward trend and averages $+0.8\%$ over the last 10 years. The Centers for Medicare & Medicaid Services Office of the Actuary (CMS OACT) projects excess growth of 1.2% for 2020–2027 (Table 1).⁶ The Medicare Trustee Report projects $+0.6\%$ for 2020 rising to 1.4% by 2023, then declining to 0.7% by 2068 and 0.5% in 2069–2093 (p. 156 and Table V.B5, p. 177). The CBO Long-Term Budget Outlook projects an excess cost growth range of 1.1% to $1.8\% \pm 0.6\%$ for 2019–2039 (Table 1-5, p. 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 the government.

2.4 HEALTH SHARE OF GDP

The Health Share of GDP in 2029 was set at 0.200 with a range of 0.175 to 0.235. The expected 2029 share is equal to that projected by the CMS OACT for 2027 plus two additional years of excess growth at $+1.2\%$. This is down slightly from the value in last year's report. 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 0.150, 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 0.300 relative to GDP and wages. It is possible that the U.S. 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 2030 to 2098. This parameter sets the year in which spending is projected to match the rate of increase in wages so that the health share of GDP stays constant. The parameter assumption is unchanged from last year's model.

2.7 ANNUAL PREMIUM INCREASES

Annual premium increases have often exceeded the growth in medical costs per capita by $+1\%$ or more for extended periods, although in the long run the ratio of costs/premiums will stabilize so that these growth rates converge. These are not specifically addressed in the model but exist as an underlying component of annual medical spending growth.

2.8 SHORT-TERM RATES

Short-Term Rates for 2020–2023 fell between 4.7% and 5.2% with ranges from 4.0% – 8.0% . The CMS OACT projects a rate of 4.5% for 2020 which is 0.6% above GDP growth. They also project Short Term Rates rising to 5.3% in 2024, with a decline back under 5.0% in 2027, their final projection year [National Health Expenditure Projections, Table 1]. The baseline inputs are for a slow and temporary rise in spending before cost growth moderates toward the long-term trend. Note that in our model the short-term growth rate

inputs do not affect the rates projected for 2029 and beyond. Long-run growth projections are determined solely by the inputs of long-run inflation, wage and technology factors, 2029 health share of GDP, resistance level and ultimate year limit. Additionally, 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 6: Acknowledgements

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Endnotes

- The New York Times* article “Hospitals Stand to Lose Billions under ‘Medicare for All’” by Reed Abelson in the business section on April 22, 2019, provides an overview of some salient points and why they are so threatening to providers. “Price transparency” seems headed for the dustbin since patients want to know what they will have to pay, not the rarely used list price. Hospital chargemasters become relevant, and sometimes catastrophically so, only when patients get stuck with a bill for uncovered or out-of-network services. The transparency push is also undercut once it is recognized that the pharmacy acronym “AWP” is conceded not to mean any real “average wholesale price” but is coyly referred to as “ain’t what’s paid.”
2. Milliman Research (C. Girod, S. Hart, D. Liner, T Snook, and S. Wentz), *2019 Milliman Medical Index*, <http://www.milliman.com/mmi/>. Note that the 2019 report uses an “average person” whereas previous *MMI* indexes from 2005 to 2018 use a “hypothetical family of 4” for comparisons and show somewhat larger percentages of total costs paid by employee contribution and employee out-of-pocket.
 3. *2019 Annual Report of the Boards of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds*, Washington, DC, April 22, 2019.
 4. The revised Model 2020 with an updated *Technical Manual and Documentation* is available on the SOA website under “Research Projects–Health.”
 5. CBO, *The 2019 Long-Term Budget Outlook* (Washington, DC: Government Printing Office, June 2019) (see Figure 1-11, p. 26, Table 1-5, p. 34 and Table A-2, p. 54).
 6. CMS Office of the Actuary, *National Health Expenditure Projections 2018–2027* (Washington, DC: Government Printing Office, March 2019, Table 1: Selected Economic Indicators, Levels and Annual Percent Change: Calendar Years 2011–2027.

About The Society of Actuaries

The Society of Actuaries (SOA), formed in 1949, is one of the largest actuarial professional organizations in the world dedicated to serving more than 32,000 actuarial members and the public in the United States, Canada and worldwide. In line with the SOA Vision Statement, actuaries act as business leaders who develop and use mathematical models to measure and manage risk in support of financial security for individuals, organizations and the public.

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:

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