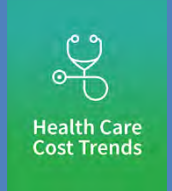


Getzen Model of Long-Run Medical Cost Trends: *Update for 2024 - 2034+*



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Executive Summary

Similar to the prior model, long-run medical cost increases are estimated at 5.0% per year. Expected future inflation in the model was raised by +0.1% which was offset by a reduction in the expected rate of technologically induced excess cost increases by -0.1%. However, the POG now perceives greater budgetary resistance to future cost increases, estimating that the expected health share of GDP after ten years will be .190 rather than the .198 projected last year, and reducing the 50-year estimate to .226 from .238.

Key Considerations

Inflation and the possibility of recession are major factors affecting health care cost increases over the next five years. Insurance and medical organization will continue to evolve but are unlikely to create major shifts in the short run. However, over the long run structural changes in providers and payment mechanisms will determine future trends – raising or lowering the health share of GDP depending upon public choices and private decisions. While the precise configuration of medical provision and health care financing in 2050 and beyond cannot be confidently predicted, a series of scenarios and extrapolations considered by the POG are reviewed in the “Scenarios 2050” appendix to this Update. Current macroeconomic disruptions are unlikely to stabilize until after 2025, and perhaps not until 2030.¹ CMS projections indicate that health expenditures soared from 17.6% of GDP in 2019 to 19.7% in 2020, and then dropped to 18.3% in 2021, and will fall again to 17.8% by 2024 before gradually rising back to 19.6% by 2031.² The Getzen Long Run

Trend Model is designed to forecast spending 10+ years in the future. It provides a credible forecast for the 2030s, but is of limited use in the short run. For year-to-year changes, the volatility of inflation will overwhelm any subtle difference in the underlying secular trend.

Changes in the rate of inflation take 18 to 36 months to be fully expressed in nominal health care spending, while changes in real wages and per capita incomes take three to six years. As in last year's model, years 2024 and 2025 are given placeholder "???" signs due to extreme volatility and uncertainty. Even the numbers for 2026 and 2027 should be considered as reasonable placeholders rather than forecasts for specific years. Uncertainty and the range of possible outcomes involved in any forecast should always be considered.^{3, 4} Although aftershocks and a possible recession are likely to disrupt year-to-year changes they are not likely to affect the long-run trend. Since reversion to the mean is expected within ten years, the baseline model parameters are mostly similar to those published last year.

Two factors determine health expenditures: i) the total amount available to spend (GDP) and ii) the fraction of the total allocated to medical care rather than other types of consumption (Share).⁵ The first is expressed in the model as inflation plus real growth per capita, the second as the technology factor "excess medical cost growth." Inflation is expected to moderate sometime within the next few years but still outpace the unusually low rates experienced over the last thirty years. The inflation parameter in the model has been reduced to +2.6% from +2.7% last year to reflect the growing expectation of a "soft landing." Although rising in nominal terms, real wage growth is expected to be moderate once adjustments are made for inflation, averaging about +1.4% annually. A growing public perception that medicine in the U.S. is overpriced is likely to reduce the rate of increase in share. The long-run technology trend parameter is expected to be close to +0.9%, below the thirty-year average of +1.2% but above the +0.2% average for the last ten years. The share resistance point has been placed at .170 since the recent stabilization of Medicare per enrollee costs suggests that medical cost increases are already slowing. Volatility and sustainability of existing health care cost trends have become major concerns for patients, providers, and payers. The project oversight group (POG) met in 2023 to consider multiple

scenarios and factors responsible for trend shifts, providing a framework for considering the timing and direction of future changes in health system payments (see appendix).

The Getzen Model is a long-run model designed to project medical cost levels and trends 10 or more years into the future on a national basis. All short-run or local employee group trends will eventually converge toward that long-run national trend, but in the interim may deviate widely. It is up to actuaries to use their expertise to bring in local and group factors such as age-gender demographics, regional supply conditions, group experience, plan type, benefit changes, disease prevalence, specialty drug expenses, etc. The general national trend is just one factor to be considered, and may be of relatively minor importance on actuarial projections in the short or medium term for many specific groups or localities. The 2024 version of the Getzen Model projects the level of spending for 2033 and growth trends for the following years. A simple linear extrapolation is used estimate growth back to the current situation, not to make year-to year forecasts for the next nine years—nor for trends in a specific locality or employee or retiree group.

Notes on LR 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.⁴ 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.

Inflation / CPI: **2.7%** (*range 1.5 - 4.5*). 30-year average 1991-2021 of 2.0% with standard deviation of $\pm 0.8\%$ for deflator and $2.5\% \pm 1.2\%$ for CPI; five-year moving average ranges from 1.5% to 3.5%. However, the prior 30 years 1961-1990 averaged more than twice as much, 4.6%, and the August 2022 Fed survey of professional forecasters had a median of 2.8% for the next ten years with an interquartile range of 2.6% - 3.2%.³ Expected inflation for the coming decades is clearly moving higher. How much higher is unclear and subject to considerable dispute. CBO projected 2.4% for GDP deflator and 2.8% for CPI 2022-2032 in their July 2022 *Long-Term Budget Outlook* (Table B-1, page 40).⁵ The 2022 Medicare Trustees Report projects CPI of 2.4% (range of 1.8% to 3.0%) for 2046-2096 (Table II.C1 page 15, which is the same as their 2021 assumptions).⁶ September 6 30-year TBond (3.49%) - TIPS (1.11%) implied inflation rate is 2.38%. 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.

Real Wages / per capita GDP: **1.4%** (*range 0.5 - 2.5*). 30-year average 1993-2022 of +1.6% with standard deviation of $\pm 1.8\%$; smoothed moving average range -0.1% to +3.1%. Extreme values 2020 - 2022 suggest that recent historical data must be used with caution or considered as “outliers” relative to the long-run trend. CBO June 2023 Long Term Outlook projection is +1.4% for 2023-2033 declining to +1.2% for 2044-2053. 2023 Medicare Trustees Report projects scenarios from +0.5% to +1.7% with an average long run 2047-2097 estimate of +1.14% (Table II.C.1, page 16). There is considerable controversy as to how much economic growth has or has not slowed and whether or not it will be lower for the next two decades, with experts expressing a variety of opinions.

Technology/excess cost growth: **+0.9%** (*range 0.3 - 2.0*). 30-year smoothed average 1992-2021 of +1.4% with standard deviation of $\pm 1.2\%$ and range of -0.2% to +3.9%, trending downward and averaging +0.2% over the last ten years. 2020 and 2021 values are so extreme that they have to be treated as outliers relative to the long-run trend. CMS OACT July 2023 excess growth projection was +0.9% for 2024-2031 (Table 1).² Medicare 2023 Trustee Report projects +0.4% for 2023, +1.1% for 2024, rising to +1.4% for 2027, then trending down to +0.8% in 2047 and +0.4% for in 2097 (Page 166 and Table V.B5, page 197, see also CMS memorandum “Long Term

Projection Assumptions for Medicare and Aggregate National Health Expenditures,” April 22 2020, page 24).¹⁰ 2023 CBO Long-Term Budget Outlook projects excess cost growth averaging +1.0% 2023 to 2053. (pp.18-19). Excess growth, not the level or nominal rate of spending growth, is the factor creating fiscal pressure on employers and government making projected growth due to technology and related factors the most important element of the model. Health employment since 2020 has not shown as much excess growth as the prior thirty years and public perceptions of the value of new drugs and technology have weakened.

Health Share of GDP in 2033: **.190** (*range .175 to .235*). This is slightly below the CMS 2031 projection of .196 and the previous estimate of .198 in last year’s model since some recent evidence convinced the POG that resistance to cost increases has already begun to bend to cost curve (see “Scenarios 2050” appendix).² The main impact of this parameter comes from its interaction with the share resistance limit. When the Share Resistance Point is lower than the expected health share of GDP then the impact of the technology factor (excess growth rate) is reduced and the projected trend is lower than the baseline long-run annual growth rate of 5.0% (cell H28).

Share Resistance Point: **.170** (*range .150 to .300*). This is the share of GDP above which additional health spending is projected to meet increasing resistance. Downward revision to .170 (previously .190) has the effect of reducing the expected health share of GDP after 50 years by about one percent to (.226 instead of prior estimate of .238). 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 immediately and more strongly, so that the long run medical costs after 50 years are further reduced to .217. If the share resistance parameter is raised above .275 there is no resistance and the projected share after 50 years rises to .263. The POG provides more detail on how alternative assumptions would affect projected growth rates in the Technical Manual.

Year Limit: **2075** (*range 2040 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.

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 with the rate of increase in total National Health Expenditures. Conversely, Medicare and Medicaid per enrollee costs are likely to rise less rapidly than NHE.*

Short-term rates for 2024 – 2027 **≈ ?? to 5.6%** (*range 4% – 8%**). A series of question-marks “???” are shown for 2024 and 2025 medical cost growth rates. The 6.2% for 2026 and 5.6% for 2027 are placeholders consistent with current expectations 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 2033 and beyond. Long-run growth projections are determined solely by the inputs of long-run

inflation, wage and technology factors, 2033 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.*

End Notes

1. 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/>.
2. CMS Office of the Actuary. *National Health Expenditure Projections 2022-2031*. (July 2023). *Health Affairs*, 42(7): (see Table 1: Selected Economic Indicators, Levels and Annual Percent Change: Calendar Years 2013-2031). Online at [cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsProjected](https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsProjected)
3. Getzen, Thomas E. (2016). Accuracy of Long-Range Actuarial Projections of Health Care Costs. *North American Actuarial Journal* 20(2): 101-113.
4. CMS Office of the Actuary. (November 2020). "Analysis of National Health Expenditure Projections Accuracy." <https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/nationalhealthexpenddata/downloads/projectionaccuracy.pdf>
5. Getzen, Thomas E. (2022). *Money and Medicine: The Evolution of National Health Expenditures*. Oxford University Press.
6. The revised Model with an updated *Technical Manual and Documentation* is available on the SOA website under "Research Projects – Health."
7. Federal Reserve Bank of Philadelphia (11 August 2023), *Survey of Professional Forecasters*. www.philadelphiafed.org/surveys-and-data/real-time-data-research/survey-of-professional-forecasters
8. CBO. *The 2023 Long-Term Budget Outlook*. (June 2023). USGPO, Washington, DC.
9. Medicare Trustees, (March 2023). *2022 Annual Report of the Boards of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds*. Washington, D.C.
10. CMS Office of the Actuary. (April 22 2020). "Long Term Projection Assumptions for Medicare and Aggregate National Health Expenditures." <https://www.cms.gov/files/document/long-term-projection-assumptions-medicare-and-aggregate-national-health-expenditures.pdf>.