

March 17, 2023

Honorable Sheldon Whitehouse Chairman Committee on the Budget United States Senate Washington, DC 20510

Re: CBO's Projections of Federal Health Care Spending

Dear Mr. Chairman:

You asked the Congressional Budget Office to gauge the accuracy of its projections of federal health care spending over time. In particular, you would like information about several aspects of the agency's work: how CBO's 2010 projections compare with actual spending and the agency's current baseline; why the 2010 projections overestimated or underestimated actual spending; how health outcomes and spending on health care in the United States compare with those measures in other countries; and how CBO incorporates past errors into its current and future baseline projections and estimates of the costs of legislation. This letter addresses those questions. In brief, these are the agency's findings:

- CBO overestimated mandatory spending for health care in its projections for the 2010–2020 period. Over that period, mandatory outlays for the two broad budget categories covering the major health care programs (mostly Medicare and Medicaid) were
 9 percent lower than CBO projected in 2010.
- Most of the overestimate for the Medicare and Medicaid programs stemmed from an overestimate of spending per beneficiary, not an overestimate of the number of beneficiaries. Less-than-anticipated spending for prescription drugs in Medicare Part D and for longterm services and supports (LTSS) in Medicaid were two significant sources of error in CBO's 2010 projections.

- The rate of growth in federal mandatory spending on health care per beneficiary has slowed sharply since 2005. For example, Medicare spending per beneficiary grew at an average annual rate of 6.6 percent between 1987 and 2005, 3.1 percent between 2007 and 2012, and 2.2 percent between 2013 and 2019. Several developments may have contributed to that slowdown in spending growth, and the findings of several research papers do not fully account for that trend, in CBO's assessment.
- The United States spends a larger share of its gross domestic product (GDP) on health care than other advanced economies and performs worse on various measures of health outcomes than many of those same countries. In 2019, U.S. health expenditures were 17.6 percent of GDP, nearly 7 percentage points higher than the average of other comparably wealthy countries.
- By examining the accuracy of its past projections, CBO identifies opportunities to improve its current and future projections and cost estimates. The agency regularly publishes reports explaining how it has assessed the accuracy of its projections and the changes it has made as a result.

Fuller explanations for each of those findings is provided below.

How do CBO's August 2010 baseline projections of federal health care spending compare with actual spending over the 2010–2020 period?

CBO's baseline projections from August 2010—the first projections published after enactment of the Affordable Care Act—spanned the period from 2010 to 2020. At that time, the agency estimated that mandatory outlays for the two broad budget categories covering the major health care programs—function 550 (Health), mostly for the Medicaid program, and function 570 (Medicare, net of premiums and other offsetting receipts)—would be \$11.7 trillion over the 2010–2020 period (see Table 1 on page 11). Actual mandatory outlays for those categories turned out to be \$10.6 trillion over that period, or 9 percent less than the amount CBO

¹ Congressional Budget Office, *The Budget and Economic Outlook: An Update* (August 2010), www.cbo.gov/publication/21670. CBO's analysis of spending in this letter focuses on mandatory, or direct, spending. Such outlays are generally governed by statutory criteria and are not normally constrained by the annual appropriation process. For discretionary spending (which stems from authority provided in annual appropriation acts), differences over time between projected and actual outlays result largely from differences between projected funding and actual appropriations.

projected in 2010; the difference between projected and actual mandatory outlays was 12 percent for function 550 and 7 percent for function 570. For 2019, the last year covered in the agency's August 2010 projections that was unaffected by the coronavirus pandemic, mandatory outlays for budget functions 550 and 570 turned out to be \$1.2 trillion, which was 17 percent lower than the agency had projected in 2010.

Changes to CBO's baseline projections are grouped in three categories: legislative changes, which result from enactment of new laws; economic changes, which stem from updates to the agency's economic forecast; and technical changes, which reflect all other updates to the agency's projections. Of the \$232 billion difference between projected and actual mandatory outlays in 2019, only \$16 billion is attributable to legislative and economic changes. The rest of the difference (\$216 billion) stems from technical changes: \$123 billion in function 550, and \$94 billion in function 570.

Disentangling the reasons that estimated spending has differed from actual spending since the August 2010 projections is difficult. In a previous analysis, CBO discussed how the slowdown in the growth of health care spending and an overestimate of the number of people receiving premium tax credits through the health insurance marketplaces contributed to downward technical revisions to CBO's projections.² For this analysis, CBO looked in more detail at trends in Medicare and Medicaid spending since the 2010 projections. For both programs, the agency estimates that most of the projection errors resulted from an overestimate of spending per beneficiary and not an overestimate of the number of beneficiaries. In 2019, the actual number of Medicare and Medicaid beneficiaries turned out to be only 1 percent higher and 2 percent lower, respectively, than CBO estimated in its August 2010 projections.

For the Medicare program, the largest difference between CBO's August 2010 baseline projections of net spending in 2019 and actual net spending was an overestimate of net spending for Medicare Part D (the program that covers the cost of beneficiaries' outpatient prescription drugs). In a 2014 report, CBO identified two reasons for the slower-than-expected growth in prescription drug spending, both nationally and in Part D. First, as existing brand-name drugs lost their patent protection, they faced new competition from generic drugs, and a significant share of prescriptions shifted to less

² Congressional Budget Office, Answers to Questions for the Record Following a Hearing Conducted by the Senate Committee on the Budget on CBO's Budget Projections (December 2020), p. 13, www.cbo.gov/publication/56908.

expensive generic formulations.³ Second, fewer new brand-name drugs, which would have been relatively more expensive, were introduced than CBO had anticipated.

For the Medicaid program, identifying the precise causes of the differences between CBO's August 2010 baseline projections of spending in 2019 and actual spending in that year is more difficult—mainly because of the major changes to Medicaid during that period. One contributing cause is less-than-anticipated spending for long-term services and supports, which help people with functional or cognitive limitations perform routine daily activities for an extended period. LTSS can be provided in an institutional setting (such as a nursing home) or a noninstitutional setting (such as a person's home or an adult day care center).

From 2000 to 2010, growth of LTSS spending averaged 5 percent annually; that growth was largely driven by 11 percent average annual growth in noninstitutional LTSS. Between 2011 and 2020, average annual growth of LTSS spending fell to 1 percent, and average annual growth in spending for noninstitutional LTSS declined to 4 percent. The slower growth in spending since 2010 has been driven by two factors. First, the number of users of noninstitutional LTSS grew more slowly than it did from 2000 to 2010. Second, states have increasingly shifted patients from institutional to noninstitutional settings (in which care is provided at a lower cost), and more institutional services have been delivered by managed care plans (which actively seek to control costs). Both of those alternative caredelivery mechanisms are generally less costly on a per user basis. As a result, spending for institutional LTSS in 2019 was lower than such spending in 2010.

How do CBO's 2010 long-term projections of federal health care spending for the 2021–2033 period compare with actual spending in 2021 and 2022 and with current baseline spending projections?

CBO's 2010 projections of federal outlays for the major health care programs beyond the 2010–2020 period were presented in its 2010 *Long-Term Budget Outlook*.⁴ Federal outlays for the major health care programs consist of outlays for Medicare (net of premiums and other offsetting receipts), Medicaid, the Children's Health Insurance Program (CHIP), and

³ Congressional Budget Office, Competition and the Cost of Medicare's Prescription Drug Program (July 2014), www.cbo.gov/publication/45552.

⁴ Congressional Budget Office, *The Long-Term Budget Outlook* (June 2010), www.cbo.gov/publication/21546.

premium tax credits.⁵ The health care projections in the *Long-Term Budget Outlook* reflect the agency's forecast for the next 30 years under the assumption that current laws governing taxes and spending generally remain the same. (The 2010 *Long-Term Budget Outlook* focused on projected health care outlays over the next 25 years, but CBO changed the length of its projection period to 30 years beginning in 2016.)

CBO's 2010 projections of federal outlays for the major health care programs in 2021 and 2022 can be compared with actual outlays for those years. In the long-term projections it made in 2010, CBO estimated that federal outlays for the major health care programs would account for 6.5 percent of GDP in 2021 and 6.6 percent of GDP in 2022. Actual outlays for those programs turned out to be 5.7 percent of GDP in both years.

Additionally, CBO's 2010 projections of federal outlays for the major health care programs over the 2023–2033 period can be compared with CBO's current baseline projections. In its long-term projections made in 2010, the agency estimated that those outlays would increase from 6.8 percent of GDP in 2023 to 8.5 percent of GDP in 2033. CBO now expects federal spending on those programs, measured as a percentage of GDP, to grow more slowly over that 10-year period, increasing from 5.8 percent of GDP in 2023 to 6.9 percent of GDP in 2033 (see Figure 1 on page 12).

Those sets of comparisons show that the rate of growth in federal spending on the major health care programs has slowed significantly since 2010 and that growth is expected to remain slower (relative to CBO's 2010 projections) over the next decade.

What factors account for the recent slowdown in federal health care spending?

In recent years, the growth of federal health care spending per beneficiary has slowed substantially. Between 1987 and 2005, for instance, Medicare spending per beneficiary grew at an average annual rate of 6.6 percent. But between 2007 and 2012, that rate was 3.1 percent.⁶ The average annual

⁵ Those major health care programs are mandatory. That scope of spending is narrower than the spending reported for 2010 to 2020 in Table 1, which comprises all of mandatory spending in budget functions 550 and 570.

⁶ CBO omitted the growth rate for 2006 from the comparisons because that was the year in which Medicare Part D was introduced.

growth rate in the years that followed (before the pandemic began in 2020) was even lower, at 2.2 percent.⁷

To better understand what factors contributed to that slowdown, CBO reviewed several research papers. The findings from those papers do not fully account for the widespread slowdown in federal health care spending, in CBO's assessment.⁸ The agency previously pointed to two factors—both of which are discussed in the research papers—that are known to have contributed to that recent trend.⁹ Those factors are decreases in the growth of Medicare's payment rates, which are set through laws and regulations, and reduced spending on patients with cardiovascular diseases. The latter outcome stems from better management of such conditions, including greater use of medications to control risk factors, such as hypertension and diabetes.¹⁰

Recent research has suggested a potential third reason for the slowdown: a shift in the relative importance of technology in fueling the growth of health care spending. Historically, the pace of diffusion and the adoption of new technology have been key drivers of increases in health care spending,

⁷ CBO calculated those amounts using data through 2019 from the Centers for Medicare & Medicaid Services. In particular, see the entries for "growth rates," "per enrollee," and "Medicare" in Centers for Medicare & Medicaid Services, National Health Expenditure Data, Historical, Expenditures, "Table 21: Enrollment and Per Enrollee Estimates of Health Insurance: United States, Calendar Years 1987–2021" (accessed March 9, 2023), https://tinyurl.com/23tm6xdf.

⁸ See, for example, Melinda B. Buntin and others, "Trends in and Factors Contributing to the Slowdown in Medicare Spending Growth, 2007–2018," JAMA Health Forum, vol. 3, no. 12 (December 2022), pp. 1–12, https://tinyurl.com/5n8ay43e; Laura M. Keohane, Lucas Stewart, and Melinda B. Buntin, The Slowdown in Medicare Spending Growth for Baby Boomers and Older Beneficiaries: Changes in Medicare Spending Levels and Growth by Age Group, 2007–2015 (Commonwealth Fund, December 2019), https://doi.org/10.26099/sy0d-xs78; David M. Cutler and others, "Explaining the Slowdown in Medical Spending Growth Among the Elderly, 1999-2012," Health Affairs, vol. 38, no. 2 (February 2019), pp. 222–229, https://tinyurl.com/y4nau678; Amitabh Chandra, Jonathan Holmes, and Jonathan Skinner, "Is This Time Different? The Slowdown in Health Care Spending," Brookings Papers on Economic Activity (Fall 2013), pp. 261–323, https://tinyurl.com/3vz5k35c; Michael Levine and Melinda Buntin, Why Has Growth in Spending for Fee-for-Service Medicare Slowed? Working Paper 2013-06 (Congressional Budget Office, August 2013), www.cbo.gov/publication/44513; and Alexander J. Ryu and others, "The Slowdown in Health Care Spending in 2009-11 Reflected Factors Other Than the Weak Economy and Thus May Persist," Health Affairs, vol. 32, no. 5 (May 2013), pp. 835–839, www.healthaffairs.org/doi/full/10.1377/hlthaff.2012.1297.

⁹ Congressional Budget Office, Answers to Questions for the Record Following a Hearing Conducted by the Senate Committee on the Budget on CBO's Budget Projections (December 2020), p. 13, www.cbo.gov/publication/56908.

¹⁰ David M. Cutler and others, "Explaining the Slowdown in Medical Spending Growth Among the Elderly, 1999–2012," *Health Affairs*, vol. 38, no. 2 (February 2019), pp. 222–229, https://tinyurl.com/y4nau678.

but one recent study found that their contribution from 2009 to 2019 was notably smaller than it had been over a longer period starting in 1970.¹¹ That finding is consistent with a shift toward the diffusion of cost-saving technologies—such as those used to treat cardiovascular diseases.¹²

How do health outcomes and spending on health care in the United States compare with those measures in other countries?

Despite the recent slowdown in health care spending, the United States continues to spend a higher share of its GDP on health care—as it has for many decades—than other advanced economies. In 2019, U.S. health expenditures were 17.6 percent of GDP. That amount was nearly 7 percentage points higher than the average of other comparably wealthy countries and 5.9 percentage points higher than health care spending in Germany, the country with the next-highest spending among that group of wealthy nations. Spending is much higher in the United States despite similar inputs and levels of health care utilization, which indicates that the prices paid for health care in the United States are higher. Those higher prices reflect a mix of factors, including higher prices for labor, medical devices, and prescription drugs, as well as higher administrative costs (such as those related to processing claims and updating patients' medical records). Second Science of the United States are higher administrative costs (such as those related to processing claims and updating patients' medical records).

Other high-income countries perform similarly or better on many—but not all—health outcome measures. For instance, among a group of nine high-

¹¹ Shelia D. Smith, Joseph P. Newhouse, and Gigi A. Cuckler, *Health Care Spending Growth Has Slowed: Will the Bend in the Curve Continue?* Working Paper 30782 (National Bureau of Economic Research, December 2022), www.nber.org/papers/w30782.

¹² Congressional Budget Office, Answers to Questions for the Record Following a Hearing Conducted by the Senate Committee on the Budget on CBO's Budget Projections (December 2020), p. 13, www.cbo.gov/publication/56908.

¹³ Matthew McGough and others, "How Does Health Spending in the U.S. Compare to Other Countries?" (Peterson-KFF Health System Tracker, posted February 9, 2023), https://tinyurl.com/bdf6pdzv. For information about how differences in the prices paid for health care services by country affect differences in countries' spending for that care, see Congressional Budget Office, *Policy Approaches to Reduce What Commercial Insurers Pay for Hospitals' and Physicians' Services* (September 2022), www.cbo.gov/publication/58222.

¹⁴ Congressional Budget Office, *Policy Approaches to Reduce What Commercial Insurers Pay for Hospitals' and Physicians' Services* (September 2022), www.cbo.gov/publication/58222.

¹⁵ Gerard F. Anderson, Peter Hussey, and Varduhi Petrosyan, "It's Still the Prices, Stupid: Why the U.S. Spends So Much on Health Care, and a Tribute to Uwe Reinhardt," *Health Affairs*, vol. 38, no. 1 (January 2019), pp. 87–95, https://doi.org/10.1377/hlthaff.2018.05144; and Irene Papanicolas, Liana R. Woskie, and Ashish K. Jha, "Health Care Spending in the United States and Other High-Income Countries," *JAMA*, vol. 319, no. 10 (March 2018), pp. 1024–1039, https://doi.org/10.1001/jama.2018.1150.

income countries, the United States had the highest maternal mortality rate and lowest life expectancy at birth. ¹⁶ The United States also lagged behind other nations on performance measures related to access to care and avoidable hospital admissions. For other measures, like those related to 30-day mortality rates for acute myocardial infarction and stroke, the United States landed near the top of the rankings among those same countries. ¹⁷ In general, using summary health outcome measures to assess the efficiency of national health systems is difficult because many outcomes are affected by other factors that are not attributable to the health care system and that cannot easily be controlled for in most available measures.

How does CBO review the accuracy of its projections and incorporate observed trends into current and future projections and cost estimates?

CBO frequently analyzes its projections of spending and its analyses of legislation to identify errors and opportunities to improve. Every year, the agency compares its projections for the most recent fiscal year with actual outlays and analyzes the extent of and sources of errors. CBO publishes a document summarizing that analysis.¹⁸ Periodically, the agency also analyzes its projections over a longer period; that type of analysis was most recently published in 2019.¹⁹

Using the findings from those analyses, CBO identifies opportunities to refine its methodology and improve its projections. For example, in its March 2020 baseline, CBO updated its projections of spending growth under different parts of the Medicare program; as a result, the agency decreased its projection of the program's outlays by 1.3 percent over the 2021–2030 period. That revision in part reflected the agency's examination of actual spending during the early part of the 2020 fiscal year and growth

¹⁶ Nisha Kurani and Emma Wager, "How Does the Quality of the U.S. Health System Compare to Other Countries?" (Peterson-KFF Health System Tracker, posted September 30, 2021), https://tinyurl.com/374m998e.

¹⁷ Organisation for Economic Co-operation and Development, *Health at a Glance 2019: OECD Indicators* (November 2019), https://doi.org/10.1787/4dd50c09-en.

¹⁸ Congressional Budget Office, *The Accuracy of CBO's Budget Projections for Fiscal Year 2022* (January 2023), www.cbo.gov/publication/58603.

¹⁹ Congressional Budget Office, *An Evaluation of CBO's Past Deficit and Debt Projections* (September 2019), www.cbo.gov/publication/55234.

rates in spending for various medical services—both of which were lower than expected.²⁰

Assessing estimates of legislation can be challenging for various reasons. In some cases, for example, the agency cannot isolate the effects of legislation in administrative data from other underlying changes affecting outcomes. Despite those challenges, at times CBO has been able to compare its estimates with actual outcomes. In 2017, for instance, CBO published a report discussing how projected marketplace subsidies and spending for Medicaid beneficiaries made eligible by the Affordable Care Act differed from actual amounts. Two other examples are a report that the agency published in 2012 on the relationship between increased use of prescription drugs and decreases in spending on medical services for the Medicare population and a report from 2014 analyzing why CBO's estimate of outlays for the Medicare Part D program differed from actual outlays. CBO used the findings from the 2012 and 2014 reports in its later estimates of legislation (including the 2022 reconciliation act) that affected utilization of prescription drugs.

By examining actual spending and evaluating the experiences of other programs, CBO is sometimes able to discern what adjustments to make to key estimating inputs to improve its projections. For instance, when CBO analyzed the reasons underlying the difference between its cost estimate for the Medicare-Eligible Retiree Health Care Fund and actual expenditures from the fund, it found that fewer eligible military retirees and their dependents initially used some of the benefits covered by the fund.²³ On the basis of that experience, as well as experience with other federal programs (including Part D), CBO expects that full participation in new government programs will happen with a longer delay.

In addition to routinely updating the baseline by reviewing and incorporating the latest data on Medicare spending, CBO reevaluates its long-term projections by examining historical spending trends over an

²⁰ Congressional Budget Office, *Baseline Budget Projections as of March 6, 2020* (March 2020), www.cbo.gov/publication/56268.

²¹ Congressional Budget Office, *CBO's Record of Projecting Subsidies for Health Insurance Under the Affordable Care Act: 2014 to 2016* (December 2017), www.cbo.gov/publication/53094.

²² Congressional Budget Office, *Offsetting Effects of Prescription Drug Use on Medicare's Spending for Medical Services* (November 2012), www.cbo.gov/publication/43741.

²³ Congressional Budget Office, A Review of CBO's Estimate of Spending From the Department of Defense's Medicare-Eligible Retiree Health Care Fund (October 2020), www.cbo.gov/publication/56653.

extended period. That process, together with changes to CBO's projection methods, resulted in the agency's revising downward its estimate of additional cost growth at the end of the 30-year projection period used in the 2022 *Long-Term Budget Outlook*. (Additional cost growth is the amount by which the growth rate of nominal health care spending per person, adjusted to remove the effects of demographic changes, exceeds the growth rate of potential GDP per person.) Using that revised growth parameter, CBO projected that federal spending on Medicare as a share of GDP would be about one-half of one percentage point lower in 2052 than what the agency would have projected using its earlier estimate of additional cost growth.²⁴

I hope this information is helpful to you. If you have any additional questions, please contact me.

Sincerely,

Phillip L. Swagel Director

cc: Honorable Chuck Grassley
Ranking Member
Senate Committee on the Budget

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²⁴ Congressional Budget Office, *The 2022 Long-Term Budget Outlook* (July 2022), www.cbo.gov/publication/57971.

Table 1.

Comparison of CBO's August 2010 Projections and Actual Amounts of Mandatory Outlays for Budget Functions 550 and 570, by Fiscal Year

Billions of Dollars

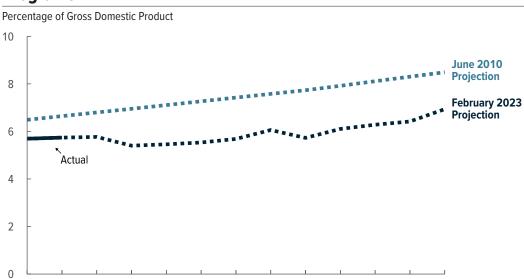
	2040	2044	2042	2042	2044	2045	2046	2047	2040	2040	2020	Total, 2010-
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2020
Functions 550 and 570												
Actual amounts	750	790	752	793	859		,		1,072		,	10,590
August 2010 projections	751	798	778	831	930	1,026	1,148	1,224	1,287	1,395	1,489	11,656
Differences												
Legislative changes	0	12	20	16	3	-1	5	4	-1	-10	74	121
Economic changes	0	1	2	4	7	4	-2	-11	-4	-6	-3	-8
Technical changes	-1	-21	-48	-57	-80	-63	-108	-153	-210	-216	-223	-1,179
Total Differences	-1	-8	-26	-38	-71	-60	-105	-160	-215	-232	-151	-1,066
Function 550—Health (mostly Medicaid)												
Actual amounts	304	310	286	301	354	426	455	473	490	519	569	4,486
August 2010 projections Differences	304	315	299	309	380	449	522	574	612	657	700	5,121
Legislative changes	0	0	2	1	-2	-5	-5	0	3	-4	24	15
Economic changes	0	0	0	3	6	6	0	-6	-9	-11	-11	-23
Technical changes	0	-5	-15	-12	-30	-23	-63	-95	-116	-123	-145	-627
Total Differences	0	-5	-13	-8	-26	-23	-67	-101	-122	-138	-132	-635
Function 570—Medicare												
Actual amounts	446	480	466	492	505	540	588	591	582	644	769	6,104
August 2010 projections Differences	447	483	479	522	550	577	626	650	675	738	788	6,535
Legislative changes	0	11	18	14	4	4	10	4	-4	-6	50	106
Economic changes	0	1	2	1	1	-1	-2	-5	5	5	8	15
Technical changes	-1	-15	-33	-45	-50	-40	-45	-57	-94	-94	-78	-553
Total Differences	-1	-3	-13	-30	-45	-37	-38	-59	-93	-94	-20	-431
Memorandum:												
Percentage Difference												
Functions 550 and 570	0	-1	-3	-5	-8	-6	-9	-13	-17	-17	-10	-9
Function 550	0	-2	-4	-3	-7	-5	-13	-18	-20	-21	-19	-12
Function 570	0	-1	-3	-6	-8	-6	-6	-9	-14	-13	-2	-7

Data source: Congressional Budget Office.

CBO's analysis of spending in this letter focuses on mandatory, or direct, spending. Such outlays are generally governed by statutory criteria and are not normally constrained by the annual appropriation process. For discretionary spending (which stems from authority provided in annual appropriation acts), differences over time between projected and actual outlays result largely from differences between projected funding and actual appropriations. Outlays for function 570 are net of premiums and other offsetting receipts.

Figure 1.

CBO's Projections of Federal Outlays for the Major Health Care Programs



Data source: Congressional Budget Office.

2023 2024

2025

2026 2027

2021 2022

The June 2010 projection values for 2021 to 2033 reflect CBO's past projections as published in *The Long-Term Budget Outlook* (June 2010), www.cbo.gov/publication/21546. Actual amounts are reported through 2022; the February 2023 projection values for 2023 through 2033 reflect CBO's current projections as published in the *Budget and Economic Outlook: 2023 to 2033* (February 2023), www.cbo.gov/publication/58848. Outlays for the major federal health care programs consist of federal spending for Medicare (net of premiums and other offsetting receipts), Medicaid, and the Children's Health Insurance Program, as well as subsidies for health insurance purchased through the marketplaces established under the Affordable Care Act.

2028 2029 2030 2031 2032 2033