

A P P E N D I X

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**Simulation of Conversion
Factor Updates for
Physicians' Services**

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The Commission's simulations of conversion factor updates for 2000 through 2009, discussed in Chapter 7, are based on unpublished quarterly data from the Health Care Financing Administration (HCFA) on Medicare's actual expenditures for physicians' services. The data were available for the second quarter of calendar year 1996 through the first quarter of calendar year 1998.

To simulate future conversion factor updates, assumptions were necessary about the two determinants of those updates: the Medicare Economic Index (MEI) and the sustainable growth rate (SGR) system's update adjustment factor.

Medicare Economic Index

The MEI was assumed to increase by a constant 2.3 percent per year. This rate was used by HCFA to calculate the conversion factor update for 1999.

Update adjustment factor

The update adjustment factor is determined

Calculation of update adjustment factor for 1999

$$\begin{aligned} \text{Update adjustment factor} &= \frac{(\text{Allowed spending, 1997-1999}) - (\text{Actual spending, 1997-1998})}{\text{Estimated actual spending, 1999}} \\ &= \frac{(\text{Allowed spending, 1999}) + (\text{Allowed spending, 1997-1998}) - (\text{Actual spending, 1997-1998})}{\text{Estimated actual spending, 1999}} \\ &= \frac{(\text{Allowed spending, 1999}) - (\text{Excess spending, 1997-1998})}{\text{Estimated actual spending, 1999}} \end{aligned}$$

by the difference between allowed expenditures and actual expenditures. Allowed expenditures are baseline 1997, expenditures, projected forward by the SGR. As specified in the Balanced Budget Act of 1997 (BBA), estimated actual spending in the update adjustment factor is actual spending for the preceding year, which ends on March 31, increased by the SGR.¹ If allowed and estimated actual spending for a year are equal and there was no excess spending in previous years, the update adjustment factor equals one.

In the Commission's simulations, allowed spending was determined by an assumed constant SGR of -0.3 percent, which is the SGR for fiscal year 1999. It includes an increase in physicians' fees of 2.1 percent, a decrease in

Medicare fee-for-service enrollment of 4.3 percent, an increase in real gross domestic product (GDP) per capita of 1.3 percent, and an increase due to law and regulations of 0.7 percent.

To simulate a calendar year SGR system, actual expenditures during the year before implementation of a conversion factor update had to be estimated. Those estimates were based on four factors:

- the applicable conversion factor update,
- a decrease in Medicare fee-for-service enrollment of 4.3 percent,
- an increase in volume and intensity of services per beneficiary of 2 percent, and

¹ In the case of the update adjustment factor for 1999, estimated actual spending in 1999 equals actual spending for the year ending March 31, 1998, increased by the SGR for fiscal year 1998.

- an increase due to law and regulations of 0.7 percent.

The assumptions about the decreases in fee-for-service enrollment and the increases in spending due to law and regulations are the same as the SGR assumptions. The assumed increase in volume and intensity of services is the same as the actual increase in volume and intensity that occurred from 1992 through 1996.

The simulation of a calendar year SGR system represented a minimal modification of the current system. As discussed in Chapter 7, further Commission work could lead to an alternative simulation methodology.

Simulation results

The simulations show that a calendar year SGR system can reduce oscillation in conversion factor updates (see Table E-1). Given the assumptions used in these simulations, under the current system, conversion factor updates would oscillate between a maximum of 5.3 percent and a minimum of -4.7 percent from 2004 through 2009. The simulated calendar year system does not exhibit such oscillation.

The simulations also show the effects

of the transition to a calendar year system. Assuming a calendar year system is implemented in time for the 2000 conversion factor update, the simulated update for that year would be 0.3 percent (see Table E-1). In contrast, continuation of the current system would lead to an update of 2.4 percent in 2000, according to the simulations. This difference reflects a one-time change in the update adjustment factor due to elimination of the mismatch of time periods that would otherwise occur.

While a calendar year system could lead to a lower conversion factor update in 2000, the simulations suggest that the advantage for physicians of continuation of the current system may be short lived. Lower updates would occur in 2001, 2002, and 2003 under the current system than under a calendar year system, according to the simulations. The current system's lower updates during this period would be followed by the oscillation in updates discussed earlier.

Sensitivity analysis

To examine the effects of elimination of time lags on conversion factor updates further, the Commission also conducted a sensitivity analysis. Two alternative

patterns of volume growth were considered.

The first alternative was an increase in volume growth from 2.0 percent to 3.6 percent per year, starting in 2001. As discussed in Chapter 7, HCFA actuaries are projecting such an increase in volume growth due to aging of the beneficiary population and other factors. This alternative provided a perspective on the behavior of a calendar year SGR system in addition to one in which a constant 2.0 percent annual increase in volume growth was assumed.

The analysis did not show oscillation in conversion factor updates after the volume growth rate was increased (see Table E-2). Negative conversion factor updates would begin, however, in 2003, after the system recognized the increase in volume growth occurring in 2001.

The second alternative considered in the sensitivity analysis assumed a high level of volume growth in 2000 of 9.3 percent, instead of a constant 2 percent rate. As discussed in Chapter 7, volume growth of 9.3 percent was the highest rate of volume growth observed from 1985 to 1991. Since a year of high volume growth would lead to a large negative update adjustment factor afterward, this "one bad

TABLE E-1

Results of simulation of conversion factor updates, 2000-2009

Year	Current sustainable growth rate system					Calendar year sustainable growth rate system				
	Allowed spending	Excess spending	Estimated actual spending	Update adjustment factor	Conversion factor update	Allowed spending	Excess spending	Estimated actual spending	Update adjustment factor	Conversion factor update
2000	\$400	(\$2)	\$401	0.1%	2.4%	\$399	\$4	\$403	-2.0%	0.3%
2001	399	3	404	-2.0	0.2	398	3	397	-0.7	1.6
2002	397	10	404	-4.1	-1.8	397	3	397	-0.9	1.4
2003	396	10	396	-2.4	-0.1	395	3	395	-0.9	1.4
2004	395	(2)	384	3.4	5.3	394	3	394	-0.9	1.4
2005	394	(14)	382	6.9	5.3	393	3	393	-0.9	1.4
2006	393	(12)	395	2.3	4.7	392	3	392	-0.9	1.4
2007	392	5	408	-5.4	-3.2	391	3	391	-0.9	1.4
2008	390	27	412	-11.9	-4.7	389	3	389	-0.9	1.4
2009	389	29	391	-7.7	-4.7	388	3	388	-0.9	1.4

Note: Spending amounts are a multiple of unpublished spending amounts from HCFA.

Source: MedPAC analysis.

TABLE E-2

Sensitivity analysis of a calendar year sustainable growth rate system, 2000-2009

Volume growth of 2.0 percent in 2000 and volume growth of 3.6 percent in 2001-2009

Year	Allowed spending	Excess spending	Estimated actual spending	Update adjustment factor	Conversion factor update
2000	\$399	\$4	\$403	- 2.0%	0.3%
2001	398	3	398	- 0.7	1.6
2002	397	3	397	- 0.9	1.4
2003	395	16	402	- 5.5	- 3.3
2004	394	16	388	- 2.3	- 0.1
2005	393	15	387	- 2.3	- 0.1
2006	392	15	386	- 2.4	- 0.1
2007	391	15	385	- 2.4	- 0.1
2008	389	15	383	- 2.4	- 0.1
2009	388	15	382	- 2.4	- 0.1

Note: Spending amounts are a multiple of unpublished spending amounts from HCFA.

Source: MedPAC analysis.

relatively high volume growth. This overcompensation is due to use of the high-volume-growth year's spending to estimate spending in subsequent years. If volume growth actually returns to trend during those subsequent years, estimated spending will be too high, causing unnecessarily low conversion factor updates. Once the system recognizes that earlier updates were too low, it will produce much higher updates. This cycle of errors and correction of errors leads to oscillation in the updates.

To examine the role of the limits on the conversion factor updates, the sensitivity analysis also considered one year of high volume growth (9.3 percent) in 2000 and no limits on the updates (see Table E-3). The analysis showed that removal of the limits would not eliminate oscillation in conversion factor updates. The oscillation would occur over fewer years, however. The absence of limits could also lead to large changes in the conversion factor.

As discussed in Chapter 7, a calendar year SGR system, other than the one simulated here, may be possible that does not lead to oscillation in conversion factor updates even in years after the volume of services has grown at a relatively high rate.

year" alternative was expected to trigger the lower limit on the conversion factor update. That limit is MEI minus 7 percentage points. Analysis of this alternative was intended to show the effects of the limit on the conversion factor update in a calendar year SGR system.

The results of analysis of this second alternative showed, as expected, that the lower limit of the conversion factor would

be reached, starting in 2002, as the system recognizes the high rate of volume growth in 2000 (see Table E-3). More important, the analysis also showed oscillation in the conversion factor updates, from a minimum of -4.7 percent to a maximum of 5.3 percent, starting in 2002. Such oscillation means that a calendar year system, of the type simulated, would tend to overcompensate for one year of

TABLE E-3

Sensitivity analysis of a calendar year sustainable growth rate system and a one-time increase in the volume of services, 2000-2009

Volume growth of 9.3 percent in 2000 and volume growth of 2.0 percent in 2001-2009

Volume growth of 9.3 percent in 2000, volume growth of 2.0 percent in 2001-2009 and no conversion factor update limits

Year	Volume growth of 9.3 percent in 2000 and volume growth of 2.0 percent in 2001-2009					Volume growth of 9.3 percent in 2000, volume growth of 2.0 percent in 2001-2009 and no conversion factor update limits				
	Allowed spending	Excess spending	Estimated actual spending	Update adjustment factor	Conversion factor update	Allowed spending	Excess spending	Estimated actual spending	Update adjustment factor	Conversion factor update
2000	\$399	\$4	\$403	- 2.0%	0.3%	\$399	\$4	\$403	- 2.0%	0.3%
2001	398	3	397	- 0.7	1.6	398	3	397	- 0.7	1.6
2002	397	60	425	- 20.9	- 4.7	397	60	425	- 20.9	- 19.1
2003	395	63	398	- 16.5	- 4.7	395	3	338	16.1	18.8
2004	394	42	373	- 5.5	- 3.3	394	3	395	- 1.0	1.3
2005	393	3	354	10.0	5.3	393	3	392	- 0.9	1.4
2006	392	(22)	367	12.8	5.3	392	3	392	- 0.9	1.4
2007	391	(33)	380	11.6	5.3	391	3	391	- 0.9	1.4
2008	389	(29)	393	6.6	5.3	389	3	389	- 0.9	1.4
2009	388	(11)	407	- 1.9	0.4	388	3	388	- 0.9	1.4

Note: Spending amounts are a multiple of unpublished spending amounts for HCFA.

Source: MedPAC analysis.